116524 REV

Odisha Higher Education Program for Excellence and Equity

Environment and Social Systems Assessment

Final Report

August 7, 2017

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Abbreviations

AE	Assistant Engineer
AISHE	All India Survey of Higher Education
BDO	Block Development Officer
BEE	Bureau of Energy Efficiency
BIS	Bureau of Indian Standards
CAG	Comptroller and Auditor General
CAGR	Compound Annual Growth Rate
CAPA	College Accounting Procedure Automation
CBCS	Choice-based Credit System
CCPD	Chief Commissioner for Persons with Disabilities
CIP	College Infra Project
CMRF	Chief Minister's relief fund
CoE	Centres of Excellence
CPCB	Central Pollution Control Board
CPS	Country Partnership Strategy
CPWD	Central Public Works Department
CRF	Calamity Relief Fund
CSR	Corporate Social Responsibility
DDRC	District Disability Rehabilitation Center
DGS&D	Directorate General of Supplies and Disposals
DLC	District-level Consultant
DLFA	Directorate of Local Fund Audit
DLI	Disbursement-linked Indicator
DLR	Disbursement-linked Result
DSSO	District Social Security Officer
EHS	Environment, Health, and Safety
EIA	Environmental Impact Assessment
EAMP	Environmental Audit and Management Plan
ESA	Environment Systems Assessment
ESSA	Environmental and Social Systems Assessment
FDP	Faculty Development Program
FGD	Focus Group Discussions
FM	Financial Management
FRR	Financial Rules and Regulations
FSA	Fiduciary System Assessment
GB	Governing Body
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
GoI	Government of India
GoO	Government of Odisha
GP	Gram Panchayat
GPEO	Gram Panchayat Extension Officer
GRM	Grievance Redress Mechanism

GRS	Grievance Redress Service
GSDP	Gross State Domestic Product
HE	Higher Education
HED	Higher Education Department
HEI	Higher Education Institution
HRDC	Human Resource Development Centre
ICSSR	Indian Council of Social Science Research
IDCO	Infrastructure Development Corporation of Odisha
IDG	Institutional Development Grant
IDP	Institutional Development Plan
IEQA	Institutional Eligibility for Quality Assessment
IT	Information Technology
JE	Junior Engineer
KPI	Key Performance Indicator
KRA	Key Results Area
LFAO	Local Fund Audit Organization
LIS	Low Income States
LOI	Letter of Intent
M&E	Monitoring and Evaluation
MCDs	Minority Concentration Districts
MHRD	Ministry of Human Resource Development
MIS	Management Information System
MoEFCC	Ministry of Environment Forests and Climate Change
MOOC	Massive Open Online Courses
MoTA	The Ministry of Tribal Affairs
MoU	Memorandum of Understanding
MP	Members of Parliament
MPLADS	Members of Parliament Local Area Development Scheme
NAAC	National Assessment and Accreditation Council
NBC	National Building Code
NCC	National Cadet Crops
NGO	Non-Governmental Organizations
NHFDC	National Handicapped Finance and Development Corporation
NME-ICT	National Mission on Education through Information and Communication Technology
NSS	National Service Scheme
ODRAF	Orissa Disaster Rapid Action Force
OEA	Odisha Education Act 1969
OHEP	Odisha Higher Education Program
OHEPEE	Odisha Higher Education Program for Excellence and Equity
OPHW	Odisha Police and Housing Welfare Corporation
OPRC	Operational Procurement Review Committee
OPSC	Odisha Public Service Commission
OPWD	Odisha Public Works Department
OSDMA	Odisha State Disaster Management Authority
OSPHWC	Odisha State Police Housing and Welfare Corporation Ltd.

PAP	Program Action Plan
PD	Project Director
PDO	Program Development Objective
PforR	Program-for-Results
PHEO	Public Health Engineering Organisation
PIM	Project Implementation Manual
PIMS	Personnel Information Management System
PMU	Project Management Unit
PPSD	Project Procurement Strategy for Development
PRC	Peer Review Committee
PTC	Performance Tracking Cell
PWD	Public Works Department
QCBS	Quality- and Cost-Based Selection
R&B	Roads and Buildings
R&D	Research and Development
RBF	Results-based Financing
RCCB	Regional Centre for Capacity Building
RDD	Rural Development Department
REOI	Requests for Expression of Interest
RTI	Right to Information
RUSA	Rashtriya Uchchatar Shiksha Abhiyan
RWSS	Rural Water Supply and Sanitation department
SAMS	Student Academic Management System
SBD	Standard Bidding Document
SC	Scheduled Castes
SCPD	State Commissioner for Persons with Disabilities
SDP	Skill Development Program
SHEC	State Higher Education Council
SIDR	State institute for Disability Rehabilitation
SJ&E	Ministry of Social Justice& Empowerment
SPCB	State Pollution Control Board Odisha
SQAC	State Quality Assurance Cell
SSA	Social Systems Assessment
SSEPD	Social Security and Empowerment of Persons with Disabilities Department
SSR	Self-study Report
SSSO	Sub-divisional Social Security Officer
ST	Scheduled Tribes
SWAYAM	Study Webs of Active –Learning for Young Aspiring Minds (A programme of Ministry of Human Resource Development, Government of India)
TA	Technical Assistance
TEQIP	Technical Education Quality Improvement Project
TOR	Terms of Reference
TSP	Tribal Sub Plan
UGC	University Grants Commission
WD	Works Department, Government of Odisha
YRC	Youth Red Cross

Executive Summary

1. The proposed Odisha Higher Education Program for Excellence and Equity (OHEPEE) will be the first support for the HE sector by the World Bank in Odisha and will seek to support an overall government HE program through a Results-based Financing (RBF) modality.

2. The proposed World Bank Operation, the OHEPEE, will support the GoO in strengthening state-level initiatives of the OHEP through two components: (a) OHEPEE PforR Program (US$165 million) and (b) a TA component (US$5 million). Disbursements for the PforR will be made against the achievement of specific DLIs that would contribute to the achievement of the overall objectives of the Program. The TA portion will use an IPF instrument. The TA will support the implementation of the PforR through capacity building, stakeholder consultations, TA and research. The flow of funds under the TA will be provided against specific investments.

3. For the PforR instrument, an **Environmental and Social Systems Assessment (ESSA)** was undertaken by the World Bank team as part of the project preparation to gauge the adequacy of systems at the state, university, and college levels towards understanding the environmental and social impacts, risks, benefits, and opportunities associated with the proposed operation. The broad scope of the ESSA included a review of the extent to which the program systems promote environmental and social sustainability; avoid, minimize and/or mitigate adverse impacts on natural habitats and physical cultural resources; protect public and worker safety; manage land acquisition; consider issues related to indigenous peoples/vulnerable groups; and avoid social conflicts. Based on this, the ESSA identified gaps/risks and actions required for enhancing the program systems to enhance opportunities/benefits.

Environment Systems Assessment (ESA)

4. **Methodology.** The ESA methodology included an analysis of environment, health and safety (EHS) related information/data of the HE program in Odisha. The assessment was carried out through a review of relevant government policies, legislations, codes, program guidelines, procedures and institutional roles. It included a study of governing systems pertaining to higher education sector at the national and state levels apart from guidelines issued by UGC. An analysis of the extent to which these are consistent with the World Bank's policy and directive on Program-for-Results financing was carried out. The review process also encompassed findings from the site visits, which covered two universities (one each in Mayurbhanj and Sambalpur district) and a representative sample of eighteen colleges located across Mayurbhanj, Koraput, Rayagada, Khurda and Ganjam districts.

5. Consultations were carried out with the HED, staff and students at the universities and colleges, construction agencies such as the Odisha Works Department and relevant regulatory agencies as part of the ESA. Additionally, a workshop was organized at Khariar on January 30, 2017 to interact with the key stakeholders and share the preliminary findings from the study. A second workshop was organized on April 26, 2017 at Bhubaneswar as part of the Appraisal mission to deliberate on the recommendations and actions to be included in the Program Action Plan.

6. **Key ESA findings.** The major findings of the Environment Systems Assessment are summarized below:

(a) **The existing legal and regulatory framework, as relevant to the Program activities, is largely adequate in its coverage of environmental aspects**. The national and state laws/regulations cover aspects such as management of air, water and noise pollution; construction and demolition wastes; public and worker safety aspects; energy conservation; building safety; protection of critical natural habitats and; protection of archeological monuments/sites. There are also other codes and guidelines defining environmental infrastructure standards and management procedures (for example, standards for sanitation infrastructure in the HEIs and guidelines for handling hazardous materials in the HEIs). However, awareness on these requirements is lacking or quite ineffectual resulting in inconsistent and inadequate application of existing codes and norms.

(b) **There is inconsistent inclusion of relevant EHS aspects in a majority of the campus/building plans/designs.** The impacts resulting from poor design, construction, and more importantly, inadequate maintenance of buildings/ infrastructure pose a risk to achievement of the intended program objectives. The environmental risks include adverse impacts related to design (inadequate natural light and ventilation; insufficient sanitation and water supply facilities; lack of water and energy governance elements; no or little regard for issues related to universal access; deficient electrical and fire safety measures; lack of disaster preparedness from structural perspective); construction (worksite safety management, including risks to staff/students/public; worker health and safety issues; improper disposal of construction waste/debris) and impacts related to the operation of the physical infrastructure (improper maintenance of sanitation facilities; inadequate drainage leading to unhygienic conditions; poor waste disposal including e-waste; deficiencies in safety/emergency procedures; and deficiencies in laboratory management, including safety practices related to handling of chemicals, residues, and spills).

Despite the fact that NAAC accreditation process provides for criteria/weightage on environment aspects, most HEIs have remained oblivious to these. Also, there is limited sensitization and capacity in the construction agencies to design buildings that fully meet safety requirements and are environment-friendly and low in maintenance. A piece-meal approach to infrastructure expansion/addition without a comprehensive over-all plan further affects the asset life/usage.

(c) **The inclusion of EHS aspects in the bidding documents used by construction agencies is not consistent and comprehensive, thereby affecting adherence to requirements during execution of works.** Typically, the following areas are covered for civil works associated with buildings construction/repair: (a) safety measures to be taken during construction such as barricading an excavation, putting-up of warning signage to prevent/discourage trespassing, fire and electrical safety practices, first aid and emergency response; (b) safety measures for officials/workers/labour engaged in a construction site (personal protective equipment); (c) ensuring structural safety during construction (scaffolding); (d) measures to avoid/reduce dust and noise during construction; (e) adherence to labour laws (including labour license, child labour

prohibition and basic facilities such as drinking water and sanitation); (f) safe storage and stacking of construction material; (g) management of construction waste/debris; (h) statutory permissions (as and if warranted) and; (i) site clean-up after construction. The inclusion/coverage of these aspects in the bid document is either weak or remains inadequately monitored during the civil works.

(d) **The institutional capacity for Environment, Health and Safety (EHS) management in the HED and in the HEIs is quite limited** as there is no designated position or role with defined responsibilities on this front. While the building design and construction aspects are largely the responsibilities of the executing agencies like OWD, HED/HEIs need to be more involved in monitoring, reporting and maintaining basic safety and health/hygiene on the campus to improve adherence to norms as specified in UGC and RUSA among other applicable codes at the national/state level. This is necessary to create an improved and healthy learning/teaching environment, which currently remains impaired on account of institutional weakness.

(e) **Monitoring of environmental management aspects in the HEIs is limited**. While the HED has an infrastructure module as part of CIP, the updating of information by HEIs is partial and irregular. Likewise, the monitoring mechanism to review Common Minimum Standard (CMS) on building safety and cleanliness stipulated by HED remains weak.

7. **Key issues/Risks.** The impacts resulting from poor design; construction; and, more importantly, inadequate maintenance of buildings/infrastructure pose a risk to achievement of the intended project/program objectives. The key issues requiring attention include design of buildings/physical infrastructure, sanitation facilities, waste management (including e-waste), drainage, water supply, universal access, fire safety, electrical safety, laboratory management (including safety practices related to handling of chemicals, residues, spills) and disaster preparedness (both structural and non-structural).

8. Therefore, the environmental risks primarily stem from inconsistent adherence to relevant regulations, codes, and guidelines; inadequate monitoring of environmental management aspects; lack of staff capacity on environmental management in construction agencies and the HEIs/HED; and proximity to forest areas (in some cases).

9. **Recommendations/Agreed Actions.** In view of the findings mentioned above, it has been agreed that the following actions will be included in the Program Action Plan to manage the identified issues and risks to the Program:

(a) **Integration of the Environmental Audit and Management Plan (EAMP) in the MoUs.** EAMP will be included as part of the MoUs (Memorandum of Understanding) with the universities/colleges receiving the IDG. Checklist for self-evaluation/audit (to be used by the participating universities/colleges) and guidelines for the preparation of the Environment Management Plan will be included in the Program Implementation Manual (PIM). For those involved in recommending/releasing IDGs, relevant guidance will be provided.

Once the college or the university has been selected, the IDP provisions and budget should be reviewed to ensure that the activities proposed in the project/EMP are adequately covered and funded. For example, construction of additional toilets to

ensure required student: toilet ratio has a budgetary implication and if not covered or adequately covered in the IDP, appropriate remedies should be ensured during fund allotment. The IDP for a college/university that has already covered this properly (or the ones that already meet the requirement), will not be required to make changes.

(b) **Inclusion of EHS aspects in bidding documents.** The bid documents of the construction agencies will be strengthened to include appropriate references to the legal and regulatory requirements on EHS management. Samples for the major work categories (new construction, major refurbishment works in an existing building and minor repair works), will be prepared prior to initiation of the bidding process. These can be tweaked as per site/work needs by the institutes and the concerned agencies involved in civil works. The EHS aspects proposed to be included in the bid documents will be based on the laws and regulations of GoI/GoO and will be commensurate to the type/nature and scale/magnitude of the work in question.

(c) **Capacity building.** Capacity building of relevant staff of universities, colleges, HED, and construction agencies will be supported/arranged to ensure awareness of and adherence to the existing legal and regulatory provisions and guidelines/requirements on environmental management applicable to the HEIs.

(d) **Monitoring.** Institutional and monitoring systems of the HED and HEIs will be strengthened to adequately capture environmental dimensions by appointing/ designating an Environment Officer and forming/assigning role to the Building Management Committee within HEIs to facilitate implementation of environment management activities.

10. **List of Activities to be excluded**. The following activities will be excluded from the Program as they are likely to have significant adverse impacts (sensitive, diverse, or unprecedented) on the natural and physical environment:

a) Construction within all protected/forest areas (including National Parks, Wildlife Sanctuaries, Elephant/Wildlife Corridors, Tiger Reserves, Elephant Reserves, Biosphere Reserves), and, within Eco-Sensitive Zones for which final or draft notifications have been published by the MoEFCC, GoI.

b) Construction or demolition within 300 meter radius of protected monuments identified by the Archeological Survey of India or Odisha State Archeology Department.

c) Construction of new buildings of more than 20,000 sq. m. area.

d) Construction, renovation or dismantling works involving 'asbestos containing materials'.

e) Procurement of equipment containing radioactive material or hazardous material[1].

Social Systems Assessment (SSA)

11. ***Methodology:*** The ESSA methodology included secondary data analysis of the HE program in Odisha, field reviews, focus group discussions and consultations with key

[1] Hazardous material refers to chemicals listed in the Public Liability Insurance Act, 1991.

stakeholders. Site visits covered a representative sample of 18 colleges and 2 universities in the state. Consultations were organized with HED, staff and students at the universities and colleges, and relevant regulatory agencies. The process included two stakeholder workshops to share the findings of ESSA. The first workshop for sharing the preliminary findings was organized on January 30, 2017 at Khariar. The second workshop for sharing the findings and securing agreement on the proposed actions was organized on April 26, 2017 at Bhubaneshwar.

12. **Key findings of the SSA**

(a) **Assessment of the legal and regulatory framework for the social aspects pertaining to HE points out that both national and state government had clear focus on inclusion.** Over the period of the last two decades, both central and state governments have placed significant emphasis on excellence along with expansion and equity in Higher Education. Various guidelines of the MHRD, UGC reflect the efforts taken for ensuring the continued implementation of all these acts and regulations in HEIs. The frequent amendments of these regulations again indicate that the Odisha government is sensitive towards keeping the regulations relevant to the emerging situation.

(b) **The assessment of the HED's existing capacity, colleges and universities indicate that adequate institutional arrangements exists at the state level for implementing OHEPEE.** There exists a clear mandate for ensuring social inclusiveness in areas directly applicable to OHEPEE.

- **Quality Assurance:** A State Quality Assurance Cell (SQAC) has been set up in the HED to sensitize the HEIs to seek NAAC accreditation and monitor their quality assurance activities;

- **Equity:** The state government has increased the percentage of reservation for SC and ST category in the education sector from 8 percent to 16.25 percent and 12 percent to 22.5 percent respectively. This has been one of the enabling factors in rising enrolment of students from disadvantaged communities. For HE, the HED has started implementation of interest subvention of 4 percent and 6 percent for boys and girls for educational loans (the student loan scheme "Kalinga Sikhya Sathi Yojana" (KSSY)).

- **Setting up Model Degree Colleges under RUSA:** The HED has established 8 model degree colleges in Educationally Backward Districts[2] which are Boudh, Deogarh, Malkangiri, Nawarangpur, Nayagda, Nuapada, Rayagada and Sonepur. These have been established under RUSA project of MHRD and are under construction.

(c) Though Odisha has made progress in students' enrollment especially for SC and ST categories, it still need to make efforts to reach up to national level. The variations across districts with respect to enrolment and GER provide some interesting insights. One, districts with high share of SC and ST population fall in the 'low GER range'. Within districts with high SC and ST population, the GER of SC and ST sub-groups

[2] MHRD

especially ST girls lags behind the enrolment achieved by the entire cohort. After the increase in reservation of seats for SC and ST students it was noticed that seats in colleges belonging to districts with high SC and ST population got filled up with almost 95 percent capacity utilization. However, colleges in other districts depicted an increase in vacancy of reserved seats.

(d) ***Field findings:*** The report distinguishes between access and quality related barriers that hinder equitable participation of students from disadvantaged groups. Some of the concerns that prevent students from enrolling in and continuing higher education include (a) implicit and explicit information-related barriers (knowledge about the application procedure, courses offered and future possibilities); (b) socio-economic and socio-cultural issues (expenses incurred on food by day scholars and hostel students, cost of travel, communication gaps between students and teachers, language issues, parental attitude toward safety concerns especially for girl students, clashing of exams with the harvest season, and so on); (c) perceived lack of value and relevance in HE; (d) information asymmetry related to employment opportunities and (e) the larger social context with respect to migration and security-related risks also are seen to have an impact on the sustainable participation of tribal boys and girls in HE institutes of the state.

13. OHEPEE will directly work toward improving the enrollment and employability of students from SC/ST communities in Higher Education in the state. However, despite the planned interventions, there exist some social risks associated with the project principally due to external factors. Below table aggregates the risks anticipated from the program and propose measures to mitigate those risks.

Table E 1. Residual Risks Analysis

Risk Description	Risk Management
High Drop-out rate at +2 level: The drop- out rate across category A districts continues to remains high due to a conflux of socio-cultural barriers. This effects the enrolment in higher education institutions across the state, but especially in districts with high SC and ST population.	Strong outreach programs need to be developed at the block level to sensitize parents and students about the relevance of higher education by the government. The strategy will be to focus primarily on the pull factor by improving the quality and accessibility of the HEIs. This is likely to have a positive impact on the GER in higher education institutes.
Lack of perceived relevance in HE: Students belonging to vulnerable groups in districts with high share of SC/ST population are first generation college-goers. Adding to this challenge is students' (especially ST boys) reluctance toward HE and perception of lack of relevance in degree courses.	Under OHEPEE, it is recommended that a proctorial system where a faculty member acts as a mentor for a small group of weak students be put in place. The HEIs need to prioritize focus on improving their fluency in English, +2 mathematics, knowledge related to the subject and improvement in basic subjects.

Risk Description	Risk Management
	The expert committee to be constituted by the HED will examine the factors that cause drop out after +2 in districts with high SC and ST population and make recommendations towards introduction of market-linked skills, credit courses linked to projects with an aim to make higher education more relevant to students in districts with high SC and ST population. Establishing entrepreneurship incubation cells will also be considered under OHEPEE.
Students are sensitive toward **the communication gap** between teachers and themselves. Additionally, posting teachers from non-tribal areas to HEIs in districts with high SC and ST population may result in linguistic and cultural gaps.	Formal feedback mechanisms and informal student Faculty meetings will be established.
Tribal girls: Girls belonging to SC and ST communities face an inter-sectionality of barriers which mostly stretch beyond the scope of individual decision making. In the case of girl students, enrollment and completion of degree courses can be attributed to a host of external factors such as willingness of parents and relatives, marriage, lack of community consent and safety and mobility related issues.	The HED has taken several initiatives such as self-defense courses for girls, scholarships, counseling to increase the enrollment and retention of both girls and boys. The OHEP recognizes the existing gender differentials that emerge as a result of the wider social context and aims to improve equitable access to disadvantaged groups, particularly girls from SC/ST communities since they face an inter-sectionality of barriers. Consequently, the DLIs related to enrollment and faculty training will collect information disaggregated by gender.
Information asymmetry at +2 level: Students of Higher Secondary Education cohort in the districts with high population of SCs and STs are unaware of the structure of HE courses, associated costs, scholarships available and other related information. Misinformed choices could result in disenchantment with studies and subsequent dropouts.	OHEPEE will focus on outreach activities to reach out to students of Higher Secondary Education. Under this, students will be informed about the streams and courses available during the Higher Secondary Education and their future prospects. This will help students to pick the right stream and subjects resulting in timely completion of graduation.

Risk Description	Risk Management
Excessive focus on government jobs and competitive exams: In districts with high SC and ST population, students and their parents perceive HE as a means to securing a government job after graduation. Almost 80% of the students interviewed wished for a government job and were preparing for competitive exams.	The program will ensure that Skill Development and Entrepreneurship is promoted in HEIs. The streamlined focus by the state government on skills will help mitigate the associated risk to a considerable extent. Developing strong alumni networks, exposure visits to industries, guest talks by local entrepreneurs, personnel working in the IT and other tertiary sector industries will act as nudge factors in gradually evolving the existing thought process among students and parents.
Participatory Decision Making: non-involvement of the staff in quality and governance related aspects of the institution fail to generate a sense of ownership. As a result, planned micro-level initiatives remain partially implemented.	OHEPEE ensures that the participatory decision making in letter and spirit, will facilitate institutions to develop their IDP in consultation with all the stakeholders. It will promote ownership and effective implementation of the IDP.

14. **Risk Management related to Land Acquisition and Resettlement:** To increase access for ST/SC students to HE in underserved areas, the HED will launch a pilot to open five degree colleges in tribal-dominated districts to be owned and managed by not-for-profit organizations. The establishment of the colleges will be done on government-owned land.

15. The HED has identified 9 districts that have significantly low provision of degree colleges, and in these districts, there are 22 blocks that do not have any degree colleges, where students either travel to colleges in other blocks or do not pursue HE. The distance between the closest degree colleges and the higher secondary schools in these unserved blocks ranges between 20 and 80 kilometers. There will be no land acquisition from title or non-title holders (squatters, temporary shelters) undertaken under OHEPEE. However, sites for the pilot colleges will be identified and screened from available government land. These sites will be screened to mitigate risks and rule out instances associated with squatters or rehabilitation under OHEPEE.

16. Construction work is expected to be limited to campus boundaries and will majorly involve upgradation of existing infrastructure.

17. In view of the findings mentioned above, it is proposed that HED will take the following actions to mitigate the identified issues and risks:

18. The **key program actions for social system strengthening** are:

***Management related*:** The HED and universities to will work to integrate marketable skills, entrepreneurship development cells, credits linked to live/voluntary projects with higher education to positively impact the enrollment and retention of SC and ST students in higher education. This is to make higher education more relevant for students, to prepare them for the job market and the local context under the IDG.

Institution related: The actions outlined are applicable to both Category A and Category B districts. However, affirming to these action areas is more crucial to HEIs from Category A districts. This is recommended with an objective to improve the inclusionary outcomes related to better enrolment, retention and completion of degree courses by SC, ST and female students.

- **Action 1: Improving enrolment, retention, on-time graduation of SC, ST and female students The MoUs signed between the HED and** HEIs will identify two to three action steps towards improving the enrolment, retention, on-time graduation and overall performance of SC, ST and female students. The suggested action steps include organising doubt clearing sessions by HEIs with an emphasis on fundamental aspects of courses, engaged mentorship through a strong proctorial system, functional language labs, career guidance cells, provision of hostel facilities to SC and ST students, career guidance, exposure visits, etc.
- **Action 2: Functional GRM cells and students feedback mechanisms:** HEIs will ensure robustly functional GRM cells, Equal Opportunity Cells and Women Harassment Redressal Cells with adequate students and faculty representation. Along with these cells, the HEIs will also organize regular, informal interactions between students and teachers.

1. Introduction

1.1 Background

The state of Odisha is one of the Low Income States located in the eastern coast with a population of 43.7 million. Income from agriculture, forestry, and fishery, on which most of the poor depend, remains volatile and excessively dependent on rainfall. In 2015–16, the state's economy grew at a real growth rate of 6.24 percent, at market prices, with 2011–12 as the newly revised base year. With a per capita income of US$1,150 in 2014–15,[3] Odisha is among the poorest states in India. The state has performed better with regard to poverty reduction; 8.2 million poor people moved out of poverty between 2005 and 2012, moving Odisha from a rank of 30 in 2004 to 25 in 2012 among Indian states.[4] Scheduled Tribes (STs) comprise 22.8 percent of the state's population, against an average of 8.6 percent nationally. The poverty rate of STs in Odisha is the highest nationally, at 63 percent, and educational attainment for STs is particularly poor, with only 2.1 percent of STs in Odisha having completed Higher Education (HE), against 13.7 percent of the general category population.[5]

The HE system in Odisha faces several challenges. First, the GER at 17.5 percent is low compared to the national average (23.6 percent), and there are major inequalities in access to HE in Odisha across gender and minority groups. The majority of students (591,000) are enrolled in the approximately 800 degree-granting colleges (these numbers do not include technical education), and the remaining 39,000 students are enrolled in 12 conventional state universities. Of the college students in Odisha, 43 percent are attending government-aided and block grant colleges, and 20 percent of the students are enrolled in private unaided colleges. The GER was 17.8 percent for female students, 14.7 percent for SC students, and 9.4 percent for ST students in Odisha in 2014–15 compared to national ratios of 23.5 percent, 19.9 percent, and 14.2 percent, respectively. The high incidence of poverty among SCs and STs combined with the outdated HE curricula with poor market relevance and, consequently, low private returns to HE are important factors behind low enrollment rates for these groups. It is important to note that between the academic years 2014–15 and 2016–17, there was a 60 percent increase in the number of seats at colleges in the tribal-dense districts. All of these seats were immediately occupied by students, and it can be concluded that there does not seem to be a demand constraint at the colleges in the tribal-dense districts. In the urban districts in coastal Odisha, only 4 percent of the students are ST students, which illustrated that relatively few ST students are moving to the urban districts to pursue a college degree.

There are growing concerns about the quality of HE in Odisha. Only 126 of the approximately 800 affiliated colleges in Odisha have National Assessment and Accreditation Council (NAAC) accreditation or have completed the self-assessment report in applying for NAAC accreditation with only six colleges having 'Grade A' status. One of the factors for insufficient quality is the shortage of qualified teaching staff at HEIs. In March 2014, the Comptroller and Auditor General (CAG) Report noted that 42 percent of the teaching posts in government colleges, 35 percent in universities, and 15 percent in government-aided colleges were vacant. Few teaching staff receive updated training in their disciplines and pedagogical

[3] Ministry of Statistics and Program Implementation 2015.
[4] Odisha Economic Survey 2015–16, Government of Odisha (GoO), 2016.
[5] Calculated using National Sample Survey (NSS) 68th round (2011–12) data.

training. Existing training facilities also remain inadequate and underdeveloped for the large pool of teachers in HEIs. In addition, lack of relevance of HE and highly skilled jobs is hindering the employability of college and university graduates.

There are inadequate resources for HE in Odisha. Odisha's per capita expenditure on HE for population ages between 18 and 23 years is INR 2,700 (approximately US$40.3), compared to the national average of INR 3,865 (approximately US$57.7). Odisha spends about 0.5 percent of its GSDP on HE, which is grossly inadequate to support the expanding HE system in the state.

The proposed Odisha Higher Education Program for Excellence and Equity (OHEPEE) will be the first support for the HE sector by the World Bank in Odisha and will seek to support an overall government HE program through a Results-based Financing (RBF) modality.

1.2 Program Description

1.2.1 Program Development Objective and Key Results

The Program Development Objective (PDO) is to improve the quality of and students' equitable access to selected institutions and enhance governance of the higher education system in Odisha.

The key performance indicators (KPIs) are:

- Improved quality of selected government and government-aided institutions (increased percentage of selected colleges that have improved their NAAC grade from the previous cycle of accreditation);
- Increased on-time graduation rate of students in undergraduate degree programs in selected institutions (disaggregated by women, ST, SC, and total students); and
- Revised regulations on the creation/composition of Governing Bodies (GBs) and their functioning issued by the HED and percentage of affiliated government-aided colleges that implement the regulations.

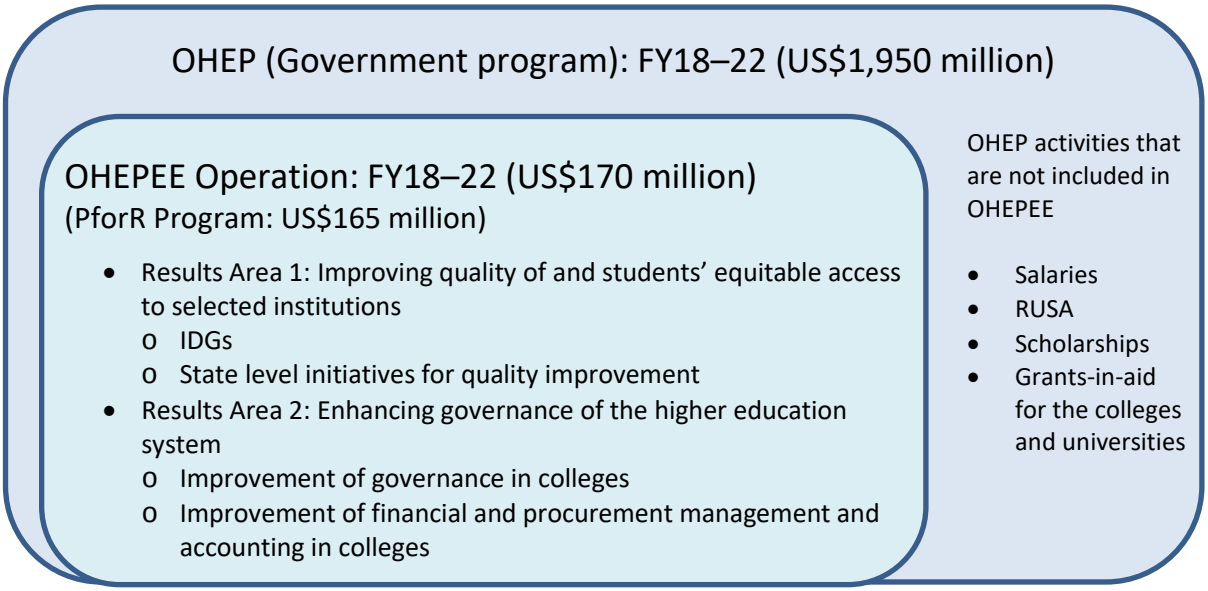
1.2.2 PforR: Operation Scope

The proposed World Bank Operation, the OHEPEE, will support the GoO in strengthening state-level initiatives of the OHEP through two components: (a) OHEPEE PforR Program (US$165 million) and (b) a TA component (US$5 million). Disbursements for the PforR will be made against the achievement of specific DLIs that would contribute to the achievement of the overall objectives of the Program. The TA portion will use an IPF instrument. The TA will support the implementation of the PforR through capacity building, stakeholder consultations, TA, and research. The flow of funds under the TA will be provided against specific investments.

The boundary of the OHEPEE Program (FY18–FY22) focuses on initiatives that strengthen the quality and governance of HE in Odisha. The OHEPEE has two results areas: (a) improving quality of and students' equitable access to selected institutions and (b) enhancing governance of the higher education system. Under Results Area 1, the Program includes the

following activities that directly contribute to the results areas of the Program (a)IDGs to universities and colleges that aim to incentivize institutes to undertake quality-focused initiatives and (b) state level initiatives for quality improvement. Under Results Area 2, the Program will cover initiatives aimed at the improvement of governance of the system: (a) improvement of governance in colleges and (b) improvement of financial and procurement management and accounting in colleges. RUSA focuses primarily on improving the infrastructure including equipment to state universities and colleges and it is not included in the Program. Scholarship schemes are also outside the scope of the Program because these are complex with multiple agencies and departments involved in funding and implementation. The boundaries of the Program are represented in Figure 1. The main beneficiaries of the Operation are estimated to be about 630,000 HE students and about 21,000 faculty staff and 11,000 administrative staff at the colleges and universities.

Figure 1. Program Boundary



Program costs and financing. The OHEP spreads over 5 years from 2018 to 2022 and stands at US$1.950 billion. The OHEPEE is valued at US$170 million and it will support OHEP, except those funded by RUSA, student financial support, grants-in-aid for the colleges and universities, and teachers' salaries. An IBRD financing of US$119 million will be used to leverage the Operation (Table 1).

Table 1. Operation Cost and Financing (US$, millions)

Financing	Cost
Government program cost (OHEP) FY18–FY27	**1,950**
Total Operation cost (OHEPEE) FY18–FY22	**170**
Total Program cost FY18-FY 22	**165**
IPF component	5
Counterpart funding	51

Financing	Cost
IBRD	119
Financing gap	0

The OHEPEE has two results areas: (a) improving quality of and students' equitable access to selected institutions and (b) enhancing governance of the higher education system.

Results Area 1: Improving quality of and students' equitable access to selected institutions (US$160 million)

To improve quality of and students' equitable access to higher education institutions, the Program will implement two activities under this results area: (a) support to HEIs through IDGs and (b) state level initiatives for quality improvement. The majority of the activities under this results area will be implemented at the institutional level (that is, colleges and universities).

Activity 1.1: Institutional Development Plan (IDP) Grants (Performance-based Financing)

IDG for colleges. Government, government-aided, and block grant colleges that either have obtained NAAC accreditation or have completed their NAAC self-assessment report as well as state universities are eligible to compete for IDGs based on their IDP. Each of the IDPs will be evaluated by an Evaluation Committee with eminent academics from inside and outside the state of Odisha, and they will select the 70 best college IDPs in the first round and approximately another 70 college IDPs in the second round of selection to be done after 12 to 18 months. The IDPs aim to increase the capacity of HEIs in Odisha to deliver quality education matched to the needs of their students in a manner that will be sustainable after the completion of the project.

IDG for universities. The eligible state universities will be classified as follows: (a) affiliating universities and (b) non-affiliating universities. IDPs of affiliating universities will have focus on strengthening the links with their affiliated colleges. IDG for universities will have two components: (a) Core Component; and (b) Centers of Excellence (CoE). The Core Component will be mandatory for the IDG proposal (a CoE will be an optional part of the IDP). Eligible activities for the university IDG will include efforts on assisting affiliated colleges in achieving autonomous status, curriculum delivery innovations, teacher training, improving of the examination system, establishing of Resource Support Centre for Affiliated Colleges in tribal-dominated districts, modernization of university, infrastructure support and so on. The evaluation and selection of the IDPs and CoEs will be done based on the guidelines provided in the IDGs Operations Manual for Universities.

The remaining approximately 660 colleges in Odisha that will not receive IDGs will be able to benefit directly from a faculty development program (FDP) and the activities to be implemented by the affiliating universities financed by their IDGs to improve their support to their affiliated colleges.

Activity 1.2: State level initiatives for quality improvement

The HED will take up certain initiatives at the state level to improve the quality of teaching and learning in the colleges. These initiatives will include short term trainings for faculty to

improve their skills and knowledge; online student feedback system on faculty performance; and skills development initiatives etc.

Results Area 2: Enhancing governance of the higher education system (US$5 million)

The following system-wide activities will be undertaken under this results area: (a) improvement of governance in colleges and (b) improvement of financial and procurement management and accounting in all government and government-aided colleges. Major initiatives will be undertaken at the state level by the HED under this results area to enhance the governance of the HE system in Odisha.

Activity 2.1: Improvement of governance in colleges

Strengthening GBs in all government-aided and block grant colleges. The HED will develop and issue a regulation for the composition of the GBs and their functioning for all government-aided non-autonomous colleges. Mechanisms will also be developed to monitor the implementation of the guidelines that will be developed for the GBs to meet at least four times in a year and for the minutes of their meetings to be made available on the websites of the colleges.

Governance benchmarking exercise for selected colleges. Using a standardized benchmarking tool (currently being used in seven countries) adapted to the specific contextual characteristics of HE in Odisha to score performance, selected institutions will have a comprehensive assessment of their governance practices to allow monitoring of their progress and to compare themselves with other institutions.

A management information system (MIS) for all HEIs for the program will be developed by the HED for effective program management. It will monitor the performance indicators and annual disbursement to the colleges and streamline the Student Admission Management System (SAMS) database with the All India Survey of Higher Education (AISHE).

Development of an online system to publish the guidelines and results of the licensing/recognition process for all new colleges and the process for expansion of existing colleges. The Program will support the development of the online system to publish the guidelines and results of this process with an aim to improve transparency and to maintain the objectivity of the process.

Activity 2.2: Improvement of financial and procurement management and accounting in all government and government-aided colleges

1. Under the Program, the HED will develop a strategy for the effective implementation of an online financial management (FM) system to be used by all the government-aided colleges. Procurement management will be strengthened at the colleges through capacity-building efforts to adopt and use the Procurement Manual for efficient and transparent issue of contracts and their management.

1.2.3 Institutional and Implementation Arrangements

The main implementing agency for the proposed Program will be the PMU housed in the HED to manage and oversee implementation of the Program as well as the state's RUSA program, which also serves as the executing arm of the SHEC. The Program Director (PD) of the PMU will be responsible for both the RUSA program in the state and the OHEPEE supported by the World Bank. A team of professionals either on deputation or hired from the market as

consultants with expertise in M&E, faculty development, MIS, procurement, and FM staffing the PMU will support the PD in implementation and M&E of the Program activities.

The PMU will be responsible for administrative and financial oversight of the Program, coordination between the HED and institutions, monitoring of the implementation of the IDGs, support for the HED in the introduction and institutionalization of systemic reforms to improve management and governance of the HE sector, coordination of the various capacity-building activities under the TA component, and ensuring of complementarity (and not duplication) of the Program activities with RUSA with separate tracking of results for both.

Two Operations Manuals have been prepared for the preparation and selection of the IDPs of colleges and universities. This will be supplemented by a Project Implementation Manual (PIM) for the Program.

2. Environment Systems Assessment

2.1 Background

2.1.1 Introduction to ESSA

As per the World Bank Policy on Program for Results Financing (July 2015), it is essential to undertake a comprehensive assessment of Environment Systems (ESA), as a part of the Program preparation, to gauge the adequacy of environment systems at national and state levels. The objective of ESA is to ensure consistency with the core principles outlined in the July 2015 policy and directive on Program-for-Results Financing in order to effectively manage program risks and promote sustainable development. These principles are:

- Promote environmental and social sustainability in the Program design - avoid, minimize, or mitigate adverse impacts, and promote informed decision making relating to the Program's environmental and social impacts.
- Avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program.
- Protect public and worker safety against the potential risks associated with construction and/or operations of facilities or other operational practices under the Program; exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.
- Manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assists the affected people in improving, or at the minimum restoring, their livelihoods and living standards.
- Give due consideration to the cultural appropriateness of, and equitable access to, Program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups.
- Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

Of the above principles, the first 3 pertain to environmental aspects and have been focused upon in this report.

2.1.2 Objectives of the ESA

The specific objectives with which the ESA was undertaken in the context of OHEPEE are the following:

- Undertake an Environment Systems Assessment for the OHEPEE's component that will be financed through the Program for Results (PforR) instrument, as required by its Policy and Directive on Program for Results Financing (July 2015).
- Examine environment management systems that are applicable to the Program in order to assess the extent to which the program systems promote environmental sustainability; avoid, minimize or mitigate adverse impacts on natural habitats and physical cultural resources; and, protect public and worker safety.

- Identify required actions for enhancing the Program systems and mitigating environment risks.

The ESA evaluates the compatibility of the Program's systems with the core principles on two basic levels: (i) the systems as defined by laws, regulations, procedures, etc. (the 'system as defined'); and (ii) the institutional capacity of implementation entities under the Program to effectively implement the system (the 'system as it is applied in practice'). It identifies and analyses the differences between the Program systems and the core principles that apply to the Program on the two levels indicated above.

2.1.3 Scope of the ESA

The Environment Systems Assessment includes a comprehensive analysis of the following:

Task I: Assessment of the Existing Environmental Systems

- Review relevant ***policies, laws and regulations*** of Government of India and Odisha regarding environment, occupational and public health and safety aspects that are required to be followed for the ***construction/augmentation of higher educational infrastructure*** (land, building, prefab structure, equipment, etc.).
- Review relevant ***policies, laws and regulations*** of Government of India and Odisha regarding environment, occupational and public health and safety aspects that are required to be followed by the ***higher education institutions including teaching, research and skill building centers***.
- Detailed assessment of the ***extent and effectiveness of compliance*** of environment, occupational and public health and safety aspects during the ***construction/ augmentation of higher educational infrastructure*** by the relevant State Government institutions (e.g., Works Department, Higher Education Department), private sector partners, etc. This assessment covers the following aspects:
    - Sitting/location;
    - Planning and lay-out of the campus; Structural safety aspects (application and adherence to building codes; condition of buildings);
    - Building design (building lay-out and materials); Class room design (space, natural light and ventilation);
    - Library and laboratory design (space, natural light and ventilation);
    - Measures for Disaster Risk Management;
    - Facilities for Physically Challenged;
    - Water management (drinking water, water for other purposes, water supply sources, water quality);
    - Drainage arrangements (rainwater);
    - Sanitation arrangements (sewage, sullage);
    - Energy availability and usage;
    - Waste management (collection, storage and disposal);
    - Exposure to pollution (dust, toxic fumes, contaminated water and noise);
    - Fire and Electrical Safety Practices; Storage, handling and use of various toxic/hazardous materials (such as chemicals used in laboratories);
    - First aid and emergency response arrangements;

    - Overall operation and maintenance aspects (housekeeping, cleanliness and hygiene).
- Detailed assessment of the ***extent and effectiveness of compliance*** of environment, occupational and public health and safety aspects by the higher education institutions during the ***delivery/implementation of the teaching, research, skill training and other relevant activities***.
- Assessment of the over-all adequacy of ***institutional capacity*** (staffing, training, monitoring, budgeting, etc.) to implement the environmental dimensions of the Program at the multiple agencies and tiers that are involved in the Program.
- Assessment of effectiveness of ***coordination*** between the multiple agencies and tiers that are involved in the Program.
- Identify the ***critical issues and risks*** that need to be addressed in the Program.

Task II: Identification of measures to enhance environmental management capacity and performance

- Based on the findings from the assessment, identification of specific ***activities for exclusion*** from the Program in view of the likelihood of causing significant adverse environmental impacts.
- Based on the findings from the assessment, identification of specific measures, as and if required, to strengthen systems, procedures, institutional capacity for ***strengthening the environment management system and performance*** of the Program. This includes inputs to the following:
    - Inputs on environmental management for the guidelines/operational manual for reference by the Universities and Colleges.
    - Inputs on environmental management for the template on 'Centres of Excellence' (CoE) proposals to be developed by the Universities.
    - Inputs on environmental management for 'Memorandum of Understanding' to be signed by the participating/eligible Universities and Colleges.
    - Inputs on environmental management for the development of the 'governance and management benchmarking scorecard' tool.
- Formulation of an ***Action Plan***, with time-bound actions necessary for strengthening environmental management in the Program (for consistency with the core principles mentioned earlier).

2.1.4 Approach and Methodology

The ESA draws on both secondary and primary information. While the former is essentially desk based review of relevant data and documents, primary information was generated through visits to colleges, universities and relevant government institutions.

Desk Review

The desk review focused on understanding the existing policy, legal and regulatory provisions, operational procedures, institutional capacity, and implementation effectiveness relevant to the activities under the Program. The list of documents reviewed is provided in Annexure 1 A.

Field Study

The ESA draws information from extensive consultations with several stakeholders from Government Departments and HEIs.

The Government Departments covered in the field study are:

- Higher Education Department (HED)
- Central Public Works Department (CPWD)
- Works Department (WD), Government of Odisha
- State Pollution Control Board Odisha (SPCB)
- Odisha State Police Housing and Welfare Corporation Ltd. (OSPHWC)
- Rural Development Department (RDD)
- Odisha State Disaster Management Authority (OSDMA)

The list of consultation meetings is provided in Annexure 4.

The HEIs covered in the field study include 2 Universities and 18 Colleges. From the list of 126 colleges (eligible for the OHEPEE Project), a representative sample of 18 colleges (approximately 15%) and 2 Universities were selected. The key criteria used for the selecting the colleges and the weightage of each criterion are as follows:

- Type of colleges
    i. Private colleges that receive Government block grants - 40%
    ii. Private aided colleges – 40%
    iii. Government colleges – 20%
- Tribal area
    i. Colleges in tribal district – 56%
    ii. Colleges in non-tribal district – 44%
- Forest area
    i. Colleges in districts with significant forest cover – 56%
    ii. Colleges in districts without significant forest cover – 44%
- Coastal area
    i. Colleges in coastal area – 44%
    ii. Colleges in non-coastal areas – 56%

The list of 18 colleges and 2 universities covered under the study is given as Annexure 3.

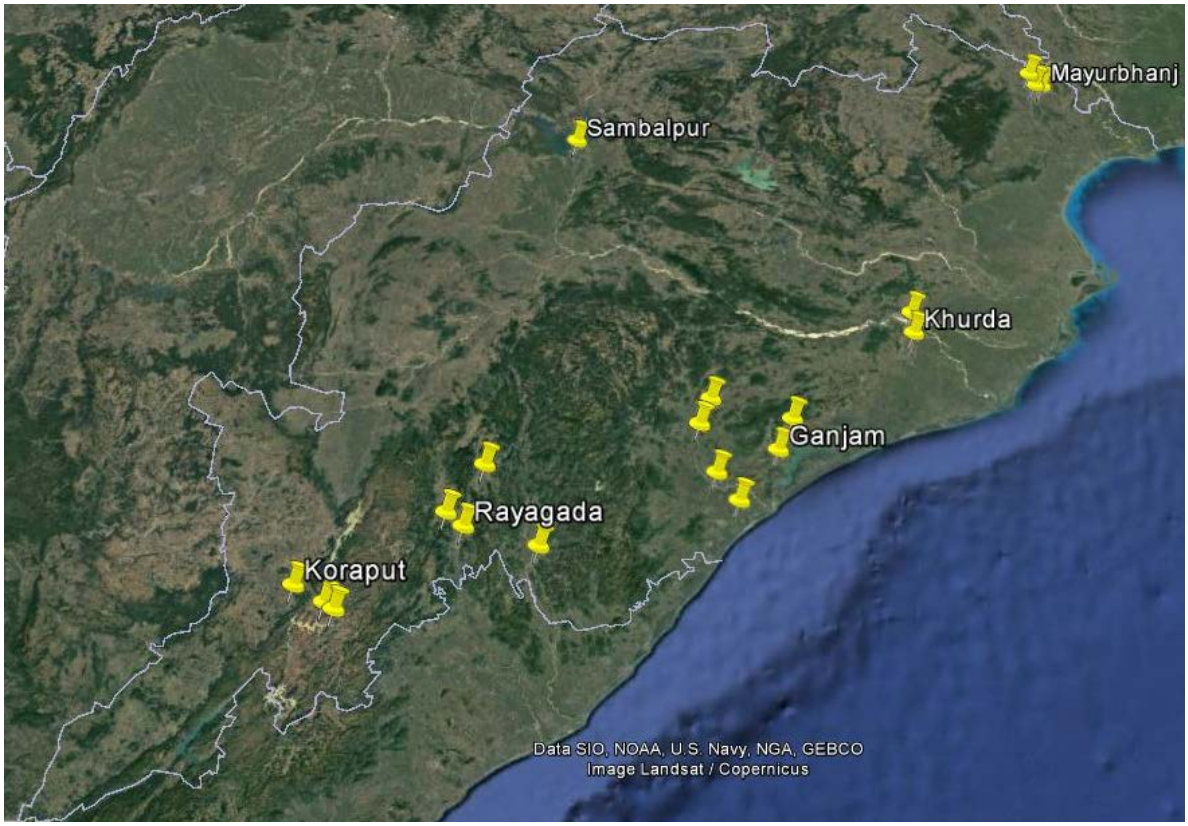


Figure 2: Location of HEIs visited for ESA

The details of the key stakeholders consulted during the study are given in the Table 2:

Table 2: List of institutions and stakeholders covered in the study

Level	Institution	Key Stakeholders Consulted	Methodology
State level	• Higher Education Department (HED)	Deputy Director = 1 Regional Director = 1	Semi-structured Interview
	• Central Public Works Department (CPWD)	Chief Engineer = 1 Superintending Engineer = 1	Semi-structured Interview
	• Works Department	Chief Engineer (Design) = 1	Semi-structured Interview
	• State Pollution Control Board Odisha (OSPCB)	Senior Environment Engineer = 2	Semi-structured Interview
	• Odisha State Police Housing and Welfare Corporation Ltd. (OSPHWC)	Executive Engineer = 1	Semi-structured Interview

Level	Institution	Key Stakeholders Consulted	Methodology
	• Rural Development Department (RDD)	Executive Engineer = 1	Semi-structured Interview
	• Odisha State Disaster Management Authority (OSDMA)	Chief General Manager = 1	Semi-structured Interview
District level	Division office of Works Department	Executive Engineer = 1 Assistant Executive Engineer = 5 Assistant Engineer = 6 Junior Engineer = 4	Semi-structured Interview
HEI Level	University level	Vice Chancellor = 2 Registrar = 2 Member of construction committee = 5 Procurement Head = 1 Faculty members = 2 Students = 16	Semi-structured Interviews
	College level	Principal = 18 Member of construction committee = 26 Procurement Head = 11 Faculty members =18 Students = 144	Semi-structured Interviews

2.1.5 Consultations and Disclosure

In addition to the consultations during the course of the field study (covered under the section 2.4.2), formal consultation workshops were organized at two stages during the ESA.

Consultation Workshop on Preliminary Findings of ESA:

A consultation workshop on the preliminary findings of the ESA was organized on January 30, 2017 in Khariar (Autonomous) College, Khariar in Nuapada district. The key stakeholder groups represented at the workshop were: participating colleges, participating universities, representatives of the HED, and, the Bank team. The workshop was chaired by the Principal Secretary, HED, Government of Odisha. The list of stakeholders who participated in the workshop is given in the Annexure 4.

A presentation based on the initial findings of the ESA in eight colleges and one university was made at the workshop. The key observations on environmental management status and issues concerning HEIs were shared. The main feedback points from the stakeholders were:

1. HEI representatives expressed the need for guidance on undertaking 'Green Audit' and 'Energy Audit' in their respective institutions.
2. HEI representatives needed clarity on the 'Swach Bharat Mission' guidelines on sanitation and hygiene - especially with regard to the scope of application (limited to HEI campuses or extend to nearby communities through action research programs).
3. Representatives of HEIs and HED recommended that a concise guidance document based on the National Building Code (NBC) 2005[6] should be prepared and made available on the HED website for easy access to this information by all HEIs in the state.
4. HEI representatives shared that a few components related to Green Buildings like rain water harvesting are being incorporated in their respective Institutional Development Plans.
5. Representatives of HEIs also sought clarity on the types of activities and infrastructure development works that could be supported through the Program.

Consultation Workshop on Draft ESA

The draft report of this ESA was disclosed through a State level stakeholder workshop organized in April 2017. The draft report will be finalized after incorporating relevant suggestions from the stakeholder workshops.

Disclosure

The draft report of the ESA will be disclosed on the website of the Higher Education Department, Government of Odisha and on the World Bank's website prior to the conclusion of appraisal. The final report of the ESA will also be disclosed on the website of the Higher Education Department, Government of Odisha and on the World Bank's website.

2.2 Institutional Assessment

This section provides details of the existing institutional setup at the national and state levels as well as an assessment of the environment management capacity of the present system.

2.2.1 National Level Institutions and Programs

National Institutions

Institutions at national level have been mapped keeping in view the key result areas and activities to be undertaken under the OHEPEE. The brief about these institutions is given below.

Ministry of Human Resource Development (MHRD): The main objectives of the Ministry of Human Resource Development (MHRD), Government of India include formulation and implementation of the National Policy on Education, bringing planned development including expanding access and improving quality of the educational institutions throughout the

[6] Now, updated to NBC 2016.

country, paying special attention to disadvantaged groups like the poor, females and the minorities. The Higher Education Department under the MHRD is responsible for the overall development of the basic infrastructure of the Higher Education sector, both in terms of policy and planning. Under a planned development process, the Department looks after expansion of access and qualitative improvement in the Higher Education, through Universities, Colleges and other Institutions.

Relevant to OHEPEE, MHRD has taken the following steps;

- Access: SWAYAM (a free MOOCS platform), implementation of RUSA (described in section 3.1.1).
- Equity: Scholarships for Girls in Technical Education, SAMVAY (Choice Based Credit Framework), Saksham (scholarship for differently abled students).
- Excellence: Committees to review regulators (UGC, AICTE), GIAN International Faculty Collaboration, portals like Know Your College, Madan Mohan Malviya Teacher Training Program.

The MHRD conducts an annual web-based All India Survey on Higher Education (AISHE). The survey covers all the HEIs in the country and covers several parameters including infrastructure (hostels, laboratories, solar power generation, etc.). The survey is intended to help MHRD in making informed policy decisions for development of the higher education sector.

University Grants Commission (UGC): The UGC is a statutory organization responsible for the coordination, determination and maintenance of standards of university education. It functions from New Delhi as well as its six Regional Offices located in Bangalore, Bhopal, Guwahati, Hyderabad, Kolkata and Pune. The UGC's mandate includes:

1. Promoting and coordinating university education.
2. Determining and maintaining standards of teaching, examination and research in universities.
3. Framing regulations on minimum standards of education.
4. Monitoring developments in the field of collegiate and university education; disbursing grants to the universities and colleges.
5. Serving as a vital link between the Union and state governments and institutions of higher learning.
6. Advising the Central and State governments on the measures necessary for improvement of university education.

The University Grants Commission (UGC) provides financial assistance to eligible colleges which are included under Section 2(f) and declared fit to receive central assistance (UGC grant) under Section 12 (B) of UGC Act, 1956 as per approved pattern of assistance under various schemes.

National Assessment and Accreditation Council (NAAC): NAAC, an autonomous body, has been established by the UGC in 1994. The main objective of NAAC is to make quality the defining element of higher education in India through a combination of self and external quality evaluation, promotion and sustenance initiatives. With the mission to encourage self-

evaluation, accountability, autonomy and innovations in higher education, NAAC primarily assesses the quality of HEIs that volunteer for the process, through an internationally accepted methodology. Details on the NAAC Assessment and Accreditation Program are provided in section 3.1.2.1.

Ministry of Environment Forests and Climate Change (MoEFCC): MoEFCC is the nodal agency in the administrative structure of the Central Government for the planning, promotion, co-ordination and overseeing the implementation of India's environmental and forestry policies and programs. The primary concerns of the Ministry are implementation of policies and programs relating to conservation of the country's natural resources including its lakes and rivers, its biodiversity, forests and wildlife, ensuring the welfare of animals, and the prevention and abatement of pollution. While implementing these policies and programs, the Ministry is guided by the principle of sustainable development and enhancement of human well-being.

Central Pollution Control Board (CPCB): The CPCB is a statutory organization that provides technical services to the MoEFCC on the provisions of the Environment (Protection) Act, 1986. The principal functions of the CPCB, as spelt out in the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981, are: (i) to promote cleanliness of streams and wells by prevention, control and abatement of water pollution, and (ii) to improve the quality of air and to prevent, control or abate air pollution. CPCB provides standards for the control of air, water and noise pollution.

Bureau of Indian Standards (BIS): BIS is the National Standard Body of India established for the development of standardization, marking and quality certification of goods. It has produced large number of national standards, which are of direct relevance to the construction industry and HEIs. These include standards for civil engineering design and construction, building materials, electrical and electronic equipment, chemicals and plastics, food safety, water quality, environmental management, occupational health and safety, earth quake resistant design and construction, cyclone resistant structure, etc. The BIS has compiled the relevant standards and guidelines into the National Building Code 2005, which is a national instrument providing guidelines for regulating the building construction activities across the country. It serves as a Model Code for adoption by all agencies involved in building construction works including Public Works Departments, other government construction departments, local bodies or private construction agencies. It mainly contains administrative regulations, development control rules and general building requirements, as well as stipulations regarding building materials, structural design and construction, plumbing services, fire safety requirements, landscaping, etc.

Bureau of Energy Efficiency (BEE): The Bureau of Energy Efficiency is an agency of the Government of India, under the Ministry of Power created in 2002 under the provisions of the nation's 2001 Energy Conservation Act. The primary objective of the bureau is to reduce energy intensity in the economy. Through its Standards & Labeling Program, BEE provides energy efficiency ratings for a variety of appliances/equipment. Besides this, bureau has made it compulsory for certain energy intensive industries to conduct Energy Audits following the Bureau of Energy Efficiency (Manner and Intervals of Time for Conduct of Energy Audit) Regulations, 2010. The Energy Conservation Building Code (ECBC) sets minimum energy standards for new commercial buildings.

Central Public Works Department (CPWD): This is the central agency for execution of public works with expertise in architecture, engineering, project management and experience in building construction and maintenance. It provides services from project concept to completion, consultancy and maintenance management. The CPWD zones in all state capitals are headed by Chief Engineers. The National CPWD Academy focuses on training of engineers, architects, horticulturists and workers from CPWD as well as other Central Government Departments, State Government, PSUs, etc. The CPWD Works Manual 2014 includes Green Building Norms and all CPWD constructions are required to be 'green buildings' and certified as such by its own officers following the GRIHA green building rating system. The Manual also includes Guidelines and Space Standards for Barrier Free Built Environment. The CPWD has also compiled an architectural design handbook on barrier-free and accessible construction.

Green Building Certification Agencies: The green building certification agencies in the country include the Excellence in Design for Greater Efficiencies (EDGE) Program in India, the Indian Green Building Council (IGBC) and the Green Rating for Integrated Habitat Assessment (GRIHA). These agencies address green features under the following categories: sustainable architecture and design, site selection and planning, water conservation, energy efficiency, building materials and resources, indoor environmental quality, and, innovation and development.

National Programs

NAAC Assessment and Accreditation Programme: The NAAC involves a combination of self-evaluation and external peer evaluation of HEIs. The process for assessment and accreditation broadly consists of preparation of Self-Study Report (SSR) by the HEIs to evaluate their strengths, weaknesses and areas for improvement. The SSR is prepared using a guidance manual and is developed through a participatory process involving key stakeholders. After submission of the SSR and other relevant documents, a peer team visits the HEI for evaluation. The final decision on the rating of the HEI is made by NAAC.

The NAAC has identified the following seven criteria to serve as the basis for assessment of HEIs: Curricular Aspects; Teaching-Learning and Evaluation; Research, Consultancy and Extension; Infrastructure and Learning Resources; Student Support and Progression; Governance, Leadership and Management; and, Innovations & Best Practices. 'Environment Consciousness' is included as one of the parameters under 'Innovations and Best Practices' and requires the HEI to provide details about the practices adopted for energy conservation, rain water harvesting, waste recycling, carbon neutrality, etc.

On the basis for this assessment procedure, NAAC provides institution the following grades A++, A+, A, B++, B+, B and C. As on January 2017, the status of NAAC accredited HEIs in Odisha is as given below:

- 13 Universities in Odisha have got NAAC accreditation out of which one has 'A+', eight have 'A' and two each with 'B+' and 'B' Grades.
- 264 Colleges in Odisha have got NAAC accreditation out of which twenty four have 'A', nineteen 'B++', thirty seven 'B+', one hundred and twenty nine 'B', thirteen 'C++', six 'C+' and thirty six have 'C' Grades.

Rashtriya Uchchatar Shiksha Abhiyan (RUSA) is a centrally sponsored scheme, launched in 2013 aiming at providing strategic funding to eligible state HEIs. The central funding is norm based and outcome dependent. The funding flows from the central ministry through the state governments/union territories to the State Higher Education Councils before reaching the identified HEIs. The funding to states is made on the basis of critical appraisal of State Higher Education Plans, which describe each state's strategy to address issues of equity, access and excellence in higher education.

The key action and funding areas under RUSA are: up gradation of existing autonomous colleges to universities; conversion of colleges to cluster universities; infrastructure grants to universities; new model colleges (general); up gradation of existing degree colleges to model colleges; new colleges (professional); infrastructure grants to colleges; research, innovation and quality improvement; equity initiatives; faculty recruitment support; faculty improvements; promoting vocational training in higher education; leadership development of educational administrators; institutional restructuring & reforms; capacity building & preparation, data collection & planning. In September 2015, MHRD released the first and second installment of Rs. 610 million as the total infrastructure grant to 8 Universities and 93 Colleges in Odisha under RUSA[7]. Thus the average grant to each HEI covered under RUSA is about INR 6 million.

Schemes by University Grants Commission

- **General Development Assistance to Colleges:** UGC provides this grant to the colleges for strengthening basic infrastructure and for meeting basic needs like campus development, books & journals, scientific equipment, teaching aids and sports facilities. Extension/ renovation of existing buildings and construction of new buildings can also be taken up with this grant. The XII Plan General Development Assistance (GDA) is provided in the form of Plan Block Grant (PBG) to colleges meeting specified criteria. The college is to identify its needs, decide on its priorities and finalize the budget. A Building Committee constituted by the college will be responsible for the execution of the project in accordance with the Guidelines for the Construction of Buildings (XII Plan) and in adherence to the rules of the State Government.
- **Scheme of construction of Women's Hostels:** During the XII Plan period (2012-2017) the UGC approved/ sanctioned a total of 335 women hostels in Minority Concentrated Districts (MCDs). Only the Gajapati district in Odisha is listed as a Minority Concentration Districts (MCDs).
- **Schemes for Educational Development of Persons with Disability:** UGC has issued instructions to all the universities and colleges for providing 3% reservation in admissions for PwD students. The HED, MHRD had issued instructions (vide letter, dated 10.7.2014), to all the centrally funded HEIs for implementation of the provisions of the PwD Act like providing barrier free environment in the buildings, which would include provision of ramps, rails, lifts, adaptation of toilets for wheelchair users, Braile signage and auditory signals, tactile flooring, etc.

[7] http://mhrd.gov.in/sites/upload_files/mhrd/files/grant-in-Aid/HE/FY-2015-16/Sept_2015/Sanction208.pdf

2.2.2 State Level Institutions and Programs

State Institutions

Higher Education Department (HED): The HED is responsible for the overall development of the Higher Education sector at university, post-graduate, graduate and higher secondary levels including vocational and professional education.

The State has 11 public and 4 private universities, 94 Government Colleges, 787 aided colleges, 50 aided Sanskrit colleges, 643 Block Grant, 571 Non-Government, 287 Self Financing and 14 Other Department Colleges. The Government Colleges include 54 Junior Colleges, 51 Degree Colleges, 16 Autonomous Colleges, 3 Sanskrit Colleges and one Composite College.

The key initiatives of the department most relevant to the infrastructure development under the OHEPEE include:

1. Quality assurance: A State Quality Assurance Cell (SQAC) has been set up in the HED to sensitize the HEIs to seek NAAC accreditation and monitor their activities in the post-accreditation period. Mandatory accreditation has been enforced by the department. As per the 'Activities Report 2015-16' by the Higher Education Department, 6 Universities and 210 Colleges have undergone accreditation in the state.
2. Infrastructure Guidelines: HED also prescribes the 'Common Minimum Standard Guidelines' which includes infrastructure related aspects like having adequate classrooms, library facilities, laboratories, students and staff common room, office, toilets, drinking water facility, boundary wall, etc. It also states that colleges should ensure that, at the beginning of every session, the buildings should be supervised and certified by an engineer not below the rank of Asst. Engineer, and necessary action should be taken for demolition/repairing of unsafe buildings/structures.
3. Setting up Model Degree Colleges under RUSA: The Higher Education Department has established 8 model degree colleges in Educationally Backward Districts which are Boudh, Deogarh, Malkangiri, Nawarangpur, Nayagda, Nuapada, Rayagada and Sonepur. These have been established under RUSA project of MHRD and are under construction. Additionally three colleges, one each in Puri, Balasore and Sundargarh, have been up-graded to Model Degree Colleges under RUSA.
4. Community Colleges: UGC assisted Community Colleges have been opened in 7 autonomous colleges with trade related courses viz Tourism and Hospitality Management and Retail Management.
5. Infrastructure grant to universities / colleges: Government has enhanced the infrastructure grant to HEIs to provide stable infrastructure. This has been increased to Rs. 2380 million including grant for Government Colleges (Rs. 700 million). Under this, the Government has also planned to create 20,000 hostel seats in colleges and universities. Additionally infrastructure grants have been provided to Non-Government aided colleges (Rs 1-1.2 million per college) in coastal / backward areas. Similarly in all government and vocationally colleges, the laboratories have been strengthened with the financial assistance of Rs. 130 million from the state budget.

6. Infrastructure Monitoring: The HED monitors the infrastructure in the HEIs through the College Infra Project (CIP). Colleges have been directed to provide updated information on institutional infrastructure to the CIP website. The CIP mainly asks for and keeps record of building information (building blocks, boundary, laboratory, hostel, etc.) and facilities (drinking water, toilets, etc.).

Works Department (WD): The WD has the responsibility for construction and maintenance of the public building infrastructure of the state. It undertakes site surveys, planning, designing, preparing cost estimates, tendering and construction management. The WD takes up construction work using the funds from the state budget, central schemes, deposits, etc. With regard to its role in infrastructure development in HEIs, the WD is approached either by the HED or by HEIs for assistance. The WD's services to HEIs include development of their proposals and project cost estimates for availing infrastructure development grants from UGC, RUSA and HED. Most HEIs also seek the WD's assistance in tendering and executing the construction work. Integration of fire safety, lightning safety, groundwater recharge and green building elements is part of the WD's infrastructure development strategy. The WD also undertakes repair, renovation and maintenance of university and college buildings. As per the 'Activity Report 2015-16' of the Works Department, it has undertaken construction of 60 Boy's and Girl's hostel buildings at 43 Government Colleges in the State and 8 Model Degree Colleges.

The OPWD Code[8] has integrated various environmental aspects in building design, safety and waste management during construction, provides guidelines for conducting Environmental Impact Assessment (EIA) and preparing Environmental Management Plan (EMP).

Orissa State Police Housing and Welfare Corporation Ltd. (OSPHWC): The OSPHWC takes up construction, repair, maintenance, modification and renovation of buildings through competitive tender or on the basis of direct placement of works. It usually takes up building construction work in left wing extremist distircts and conflict zones. The OSPHWC has constructed HEI buildings supported under UGC grants, schools for SC & ST Development Department, and Vocational Training Institutes for Industries Department. Given the high workload on WD and CPWD for infrastructure development in the state, there is a possibility that in future the involvement of OSPHWC for planning, designing and construction work in HEIs will increase. As per the Annual Report 2014-15, OSPHWC undertook the construction work of Shree Jagannath Sanskrit University, Utkal University, Berhampur University and Sambalpur University.

Rural Works, Rural Development Department (RDD): The Rural Works (RW) organization of the RDD is responsible for the maintenance and upkeep of public buildings of the RDD in rural areas. The RW currently undertakes construction in block grant and government aided colleges only when MPLAD and MLA funds are being used for this. The scope of the RW's work includes planning, design, preparing estimates and execution of construction through tendering and construction monitoring. As per the 'Outcome Budget 2016-17', Rural Development Department had budgeted for the repair and renovation of 1025 government school and college buildings that are more than 30 years old.

[8] http://www.osrp.gov.in/sites/default/files/PDF/final%20Revised%20OPWD%20Manual%20-.pdf

Infrastructure Development Corporation of Odisha (IDCO)[9]: IDCO is the Nodal Agency for providing industrial infrastructure in Odisha. IDCO also takes up planning & execution of construction projects of government departments on agency and contract basis. The expertise of IDCO is in consultancy, design execution of civil, electrical, water supply and public health engineering works. IDCO is also approached by HEIs for infrastructure development and has undertaken construction works in North Orissa University, Biju Patnaik University of Technology, Rourkela[10] Government College of Engineering, Keonjhar and Government Polytechnic, Ragadi[11].

State Pollution Control Board Odisha (SPCB): SPCB is the apex body responsible for pollution control in the state through the enforcement of various environmental legislations such as: Water Act 1974, Air Act 1981, Water Cess Act 1977, Hazardous Waste Rules 2008, Municipal Solid-Waste Rules 2000, EIA notifications under Environment (Protection) Act 1986, etc.

Odisha State Disaster Management Authority (OSDMA): Orissa is vulnerable to disasters like floods, drought, earthquake, cyclone and tsunami. Orissa State Disaster Management Authority (OSDMA) was set up by the Government of Orissa in 1999 as an autonomous organization. It has been registered under the Societies Registration Act, as a non-profit making and charitable institution for the interest of the people of Orissa, with its headquarters at Bhubaneswar and jurisdiction over the whole State. The Revenue & Disaster Management Department is the administrative departments of OSDMA. The Chief Secretary to Government of Orissa is the Chairman of the Authority and has overall power of supervision, direction and control over the affairs of the Authority and the functioning of the office bearers. The main aims of the organization are;

- To take up relief, restoration, and reconstruction activities and measures for socio-economic revival for mitigating the damages caused or likely to be caused due to any disaster.
- To take up programs and schemes that will prevent occurrence of any disaster or minimise the damaging effect due to any disaster
- To accept grants, donation, funds from the State Government, Government of India, bilateral or multi-lateral funding agencies, non-governmental organizations (NGOs), semi-governmental organizations, State Government and Central Government undertakings, Public or Private Companies, Trusts, private individuals interested in participating in or supporting the disaster mitigation works.
- To utilize funds of the Society either directly or through Government Departments, State or Central Government Undertakings, Semi-Government Organizations, NGOs or Private Philanthropic Organizations for achieving its aims and objectives

Under OSDMA, state has also set up five Orissa Disaster Rapid Action Force (ODRAF) units at Cuttack, Chatrapur, Balasore, Jharsuguda and Koraput to assist the civil Administration at the time of calamities to clear relief lines, take up search & rescue operations and help in management of disasters.

[9] http://www.idco.in/
[10] http://odisha.gov.in/e-magazine/Orissareview/july2006/engpdf/70-75.pdf
[11] http://citizen.edodisha.gov.in/eSpace/WebSearchLetter.aspx?OfficeId=15822&type=R

With regard to educational infrastructure, post disaster, construction of the school buildings under Chief Minister's relief fund (CMRF), Calamity Relief Fund (CRF) and Members of Parliament Local Area Development Scheme (MPLADS) is usually entrusted with OSDMA.

State Programs

Infrastructure assistance to Non-Government Aided Colleges of Odisha: The HED provides financial assistance to Non-Govt Aided Colleges for construction as well as extension of existing infrastructure. This includes assistance for construction of classroom, library, hostel, laboratory, administrative block, toilets, etc., including provision for power supply through installation of transformer/generator in areas with no availability of electricity, water supply through bore well, etc. Renovation work is not supported under the scheme. The support under this scheme to HEIs ranges from Rs. 1 to Rs. 1.2 million.

Infrastructure assistance to Government Colleges of Odisha: HED provides financial assistance to Govt. Colleges for construction as well as extension of existing infrastructure (construction of classrooms, library, laboratories, administrative block, hostels, and toilets), electrification works, etc. Renovation of capital nature necessary for extending the life of the building is covered under the scheme. However, expenditure on maintenance, repair and minor works are not always sought by HEIs in time or if sought, are not fully utilised due to various constraints, including staffing shortage. The support under this scheme to Government Colleges has been Rs. 700 million as per budget provision of 2016-2017.

Infrastructure assistance to Universities of Odisha: Under this scheme, the HED provides financial assistance to Universities under the State Govt. for construction as well as extension of existing infrastructure. The scheme supports construction of buildings (classrooms, library, laboratories, hostels, and toilets), electrification, etc. The support under this scheme to Universities has been Rs. 950 million as per budget provision of 2016-2017.

2.2.3 Assessment of Environment Management capacity in the key institutions

The assessment of the environmental management capacity has been undertaken at the state level and at the HEI level – as these are the most relevant for the Program.

Assessment of environmental management capacity at the State level Higher Education Department (HED)

This is the key department whose mandate as per the Orissa Education Act 1969 is to establish, maintain and regulate educational institutions imparting higher secondary, degree and post-graduation education in the state through grant of permission, recognition and extension of financial support. The capacity of the HED for environmental management of the HEIs is discussed under the following heads:

- **Staff capacity:** The Principal Secretary is the administrative head of the department and is assisted by Director of Higher Education, Director of Vocational Education and three Regional Directors of Education stationed at Bhubaneswar, Berhampur and Sambalpur. The key responsibility at the state level for HEI infrastructure development and maintenance is with Directorate of Higher Education and includes Director Higher Education (1), Deputy Directors (5), Assistant Directors (3) and Establishment Officer (1). The key responsibility at the Regional and District levels for HEI infrastructure

development and maintenance is with Regional Directorate of Higher Education and includes Regional Director Higher Education (1), Joint Director (1), Deputy Directors (2), Assistant Directors (4) and Section Officers (5). Staff of Directorate of Higher Education at state and regional level is mostly engaged in dealing with several court cases. Also, there are a few vacant posts that have resulted in staff shortage. Performance Tracking Cell (PTC) plans and undertakes initiatives for the capacity building of staff at the state and district level through Regional Directorates. However there has not been any training session on managing the environmental aspects in HEIs.

- **Financial capacity:** The HED's budget for new infrastructure development of HEIs is Rs. 9572 million in 2016-2017. The budget for infrastructure development is Rs. 1970 million which is around 21 percent of the total outlay. Besides this, the Government has allocated Rs. 1754.5 million for RUSA. Considering that there are 1599 HEIs (consisting of public universities, government colleges, aided colleges, block grant colleges and other department colleges) in the state, this averages to Rs. 5.99 million per HEI. There is no specific outlay for promoting environment friendly building construction.
- **Monitoring capacity:** At the state level, Higher Education Department has a 'Performance Tracking Cell (PTC)' that monitors college infrastructure through 'CIP' module available on department's website and also through the reports received from District Level Consultants (DLC). At the district level, the DLCs are responsible for visiting 10 colleges every month based on which they submit reports to the Performance Tracking Cell in the prescribed format called 'DLC Format'. This format captures only one aspect related to EM and that is 'cleanliness of the campus and building'.

  As outlined above, the capacity of the HED for environmental management of the HEIs is constrained by the inadequate staff, overburden of court cases, lack of a clearly defined staff responsibility at the state and district levels, capacity building activities and monitoring arrangements for this aspect.

Works Department, Odisha: The Buildings Wing of the WD is responsible for the construction, repair and maintenance of public buildings in Odisha. The capacity of the WD for environmental management of the HEIs is discussed under the following heads:

- **Staff capacity:** The WD is headed by the Engineer-in-Chief-cum-Secretary to Government. The state level staffs of the WD include one Engineer-in-Chief (Civil), seven Chief Engineers including one for Buildings and one Chief Architect. The Architect Wing at state level is responsible for the structural and architectural design of the buildings. The cadre below the state level services both roads and buildings construction. There are 12 (R&B) Circles headed by Superintending Engineers, 49 (R&B) Divisions headed by Executive Engineers, 189 (R&B) Sub-Divisions managed by Deputy Executive Engineers and Assistant Executive Engineers, and 560 (R&B) Sections managed by Assistant Engineers and Junior Engineers. Regarding the capacity building of the staff on environmental management, there is no system of training in the department.

- **Financial capacity:** The WD's outlay for environment friendly building construction is Rs. 411.8 million in 2016-2017[12] which consists of 1.4% of the total state plan. Additionally there is provision of Rs. 4958.7 million under Non-Plan budget also consisting of 38.6% of the total Non-Plan budget outlay. This is for the construction and improvement of Non-residential and Residential buildings.
- **Monitoring capacity:** The key staff responsible for monitoring the environmental management aspects, as part of overall monitoring, during and post-construction are of the division headed by Executive Engineer. Monitoring is undertaken by Assistant Engineer of the Sub-division and Junior Engineer of the section through field visits to construction sites at a frequency of once or twice a month. These visits are primarily to monitor the progress of the constriction and ensure that work is being done as per the architectural and structural design. Besides this review meetings are held at State level by the Chief Engineers with the Superintending Engineers and Division Officers on a monthly basis. Similarly, Superintending Engineers also conduct reviews of Executive Engineers and Assistant Engineers pertaining to the Circle concerned suitably. Progresses of implementation of different construction works are reviewed along with discussing the future plans. Again these reviews reportedly do not discuss the environmental aspects related to construction. The review meetings at all levels are being taken up through Online Project Monitoring Mechanism (e-Nirman).

  A report on physical and financial progress of the project constructions activities is generally submitted by the officials to their respective reporting officers on a monthly basis. Submission of utilization certificate, Reimbursement Claim, Audited Accounts & other requisite reports are also submitted as per the departmental protocol.

The WD is the technically competent authority to take up building design and construction work. However, the department is reportedly overburdened with work and also has shortage of personnel. Also, as outlined above there is no specific capacity, financial provision and monitoring arrangement on environmental management aspects.

Odisha State Police Housing and Welfare Corporation Limited (OPHWC): The OPHWC has expertise in planning, designing and construction of residential and non-residential buildings for the Police, Fire Services, Prison Administration and Judiciary. The OPHWC is the nodal agency for construction of buildings under important Central Government schemes like Modernization of Police Force Scheme, Security Related Expenditure Scheme and the Special Infrastructure Scheme. OPHWC has taken up the infrastructure development work in HEIs which includes providing technical assistance in design and planning and also undertaking the construction work when requested for. It is taken as 'deposit work' under which HEI deposits the money to OPHWC account and then work is undertaken by the OPHWC. Corporation has been reported to have the sufficient staff to undertake the infrastructural development work of HEIs when requested.

Rural Development Department (RDD): The Rural Works (RW) Organization under the department takes up the work of construction and maintenance work of buildings. For this there is a Buildings Wing headed by Chief Engineer. Its field force is divided into Divisions, Circles and Divisions and is adequately staffed. Training on technical advancement and quality management are conducted at national and state level for the engineers of the department.

[12] http://www.worksodisha.gov.in/ssl/admin/dynamic/writereaddata/document/document2016-10-22_263.pdf

However there is no training related to Green Buildings and management of environmental aspects. RDD takes up construction work as deposit work for Government colleges but not for private or aided colleges. It also takes up the construction work under the MPLAD and MLA funds.

Assessment of environmental management capacity at the HEI level

University level: Universities have committees on various administration and management aspects. However, there is no specific committee focusing on environmental management aspects. Some key committees, which exist in universities and are relevant for Environmental Management, have been mentioned in Table 3:

Table 3: Various committees in Universities related to Building Infrastructure

Name of the committee	Members	Purpose
Building Committee	Vice Chancellor (VC), Executive Engineer from WD, PG Council, Registrar, Prof-in-charge of UGC matters, Prof-in-charge of RUSA, Comptroller of Finance, Development Officer, Estate Officer, Head of departments	Finalization of plans and estimations of the various building projects proposals, ensuring the completion of the buildings in accordance with the approved plans and estimates and proper utilization of the funds received
UGC Committee	VC, PG Council, All Heads of Regular Departments, Registrar, Prof-in-charge of UGC matters, Comptroller of Finance, Development Officer, Assistant Engineer from the WD	Planning and implementation of infrastructure development works with UGC grants; Communication with UGC and related documentation; ensuring implementation of UGC guidelines related to infrastructure
RUSA Committee	VC, PG Council, All Heads of Regular Departments, Registrar, Prof-in-charge of RUSA matters, Comptroller of Finance, Development Officer, Assistant Engineer from the WD	Planning and implementation of infrastructure development works with support under RUSA; Communication and related documentation.

Name of the committee	Members	Purpose
Accommodation and Space Committee	PG Council & Ex-Officio Member, Syndicate-members, Registrar, All Heads of Regular Departments, Director SFC	Management of hostel
Tender Committee	Chairman, PG Council, Syndicate member, Registrar, Comptroller of Finance, Development Officer as Convener	Inviting tender (including for construction works) and transparent selection of contractor
Purchase Committee	PG Council & Ex-Officio Member, Syndicate-members, Registrar, Comptroller of Finance, Office-in-change Store member	Procurement of goods (including for equipment)
Canteen Committee	Chairperson PG Council & Ex-officio Member, Syndicate Member, Comptroller of Finance	Management and maintenance of canteen
Security Committee	VC, PG councilman, Director SFC, Registrar and All HoDs, Warden, Development Officer, Students Welfare Officer	Maintenance of security of students and staff

Every university has an Estate Manager or University Engineer (EM/UE) who advises the Vice Chancellor about the maintenance requirements of the infrastructure. The responsibilities of the EM/UE include planning for the maintenance work, liaison with construction agencies (WD/CPWD), supervision of the construction work, etc. The EM/UE is represented on the Building Committee of the university. Universities usually appoint a retired engineer (from WD) for this position.

College level: Colleges have established committees for looking after different aspects of administration. Some key committees that are relevant for Environmental Management have been mentioned in Table 4:

Table 4: Various committees in Colleges related to Building Infrastructure

Name of the committee	Members	Purpose
Building Committee	Chairman Governing Body, Principal, Vice Principal, Assistant Engineer from WD (in rural areas, AE/JE posted at Block Development Office),	Finalization of plans and estimations of the various building project proposals, ensuring the completion of the buildings in accordance

Name of the committee	Members	Purpose
	Prof-in-charge of UGC matters, Prof-in-charge of RUSA, two faculty members nominated by the Principal, Administrative Bursar, Accounts Bursar	with the approved plans and estimates and proper utilization of the funds received
UGC Committee	Principal, Administrative Bursar, Faculty members	Planning and implementation of infrastructure development works with UGC grants; Communication with UGC and related documentation; ensuring implementation of UGC guidelines related to infrastructure
RUSA Committee	Principal, Administrative Bursar, Faculty members	Planning and implementation of infrastructure development works with support under RUSA; Communication and related documentation.
College Development Council / Planning and Evaluation Committee / College Development Lands & Building Committee	Principal, Vice Principal, All Bursars, All HODs, Librarian, Accountant	Planning for college development; evaluating proposals; implementing infrastructure development works.
Budget Committee	Administrative Bursar, Accounts Bursar, Faculty members nominated by the Principal, I/C UGC, I/C RUSA, Accountant, Head Clerk	Preparing college budget
Internal Quality Assurance (I.Q.A) Cell	Principal, Senior Administrative Officers, Faculty members, Management members, Nominee from the local society	Development and application of quality benchmark for various activities of the college
NAAC Committee	Principal, Vice Principal, All bursars	Communication with NAAC and undertaking all related documentation including the Self-Study Report

Name of the committee	Members	Purpose
Hostel Residence Committee	Principal, Four faculty members and one Accounts person	Management and maintenance of hostels
Purchase Committee	Principal, Vice Principal, All Bursars, All HODs, Librarian, Accountant, Senior Faculty Members, I/C Stores	Responsible for making all purchases including equipment
Campus cleaning, sanitation and plantation committee	Senior Faculty Members, OIC Youth Red Cross, OIC NSS, OIC Rovers & Rangers, OIC NCC	Responsible for cleanliness, sanitation and plantation in the campus

2.2.4 Inter-institutional Coordination on Environment Aspects

Inter-institutional coordination is very crucial to ensure efficient management of relevant environment aspects like building infrastructure, energy management, waste management, etc. The key parameters in this regard are Civil Works, Water & Sanitation, Waste Management and Disaster Management.

From the perspective of environment management in HEIs, inter-institutional coordination has the following dimensions:

a) Coordination between National level and State level institutions
b) Coordination between State level institutions
c) Coordination between HEIs and National institutions
d) Coordination between HEIs and State institutions

Coordination between National and State level institutions

- With regard to environment management (EM), the only linkage between national and state level institutions is for the RUSA (Rashtriya Uchchatar Shiksha Abhiyan) which is a Centrally Sponsored Scheme launched in 2013 with the aim to provide strategic funding to eligible state higher educational institutions (details are provided in section 3.1.2.2). The fund flows from the central ministry through the state government before reaching the identified institutions. At the time of undertaking ESA visits to HEIs, HED Odisha had a RUSA coordinator under Principal Secretary for facilitating the work and acting as a linkage between RUSA authority and the HEIs in the state.
- RUSA scheme document provides all the details for the implementation of the RUSA scheme. For having the proposed institutional structure, state cabinet has approved the formation of State Higher Education Council (SHEC) in November 2016 which is expected to be formed in next financial year after the bill gets passed in the state assembly. In March 2017, an IAS[13] officer has been appointed as Project Director of the proposed SHEC.

[13] Indian Administrative Service

- The State Higher Education Council (SHEC) will undertake planning, execution, evaluation, quality assurance as well as advisory and funding functions. At present the planning, evaluation and monitoring is being undertaken by the Performance Tracking Cell (PTC) under the supervision of RUSA Coordinator who is also responsible for collating all the information and preparing reports demanded by the RUSA authority like Number of NAAC accredited HEIs, Faculty position etc. These reports are scrutinized and then submitted to RUSA authority by the Principal Secretary of HED.
- Compliance to all the applicable Regulatory norms and initiative for improving the Quality of Higher Education are one of the prerequisites (Essential commitments from the State) for getting RUSA funding.

Coordination between State level institutions

- *Civil Works*: At the state level, HED coordinates with the Works Department for creation of building infrastructure in state HEIs. After approval of the HED's budget (which includes infrastructure development in HEIs) by the state cabinet, the HED entrusts infrastructure development works to the Works Department and transfers funds to their account. The WD then undertakes the planning, designing and construction of the infrastructure in HEIs as per the mandate and the HEI's requirements. HED does not suggest any changes in the design. Reporting is done by the Works Department by providing utilization certificate of the funds received and progress of work whenever requested for this.
- *Water & Sanitation*: Public Health Engineering Organisation (PHEO) under the H&UD Department of Odisha is responsible for providing safe drinking water and maintaining sewerage system in all Urban Local Bodies and Census towns of Odisha. In rural areas, Rural Water Supply and Sanitation department (RWSS) is responsible for providing these services. However the coordination between HED and these departments is only need based. Colleges may approach RWSS for digging bore well in their campus or getting the water connection from the overhead water tank of the village.
- *Waste Management*: Municipal Corporations and Municipalities in urban areas and Gram Panchayats in rural areas are responsible for collection, transportation and disposal of solid waste generated in their respective jurisdiction area. However during ESA it was found that colleges are either burning the waste in the campus or dumping it outside which indicates there is no coordination between colleges and Gram Panchayats for waste management.
- *Disaster Management*: HED has a nodal officer for Odisha State Disaster Management Authority (OSDMA) for coordination. OSDMA conducts master training program every year at state level. Besides this Authority conducts orientation workshops at state and regional levels. In all these training programs / workshops, officials from different departments (including HED) are invited to participate. Nodal officer do this coordination.

Coordination between HEIs and National institutions

The details of coordination between HEIs and National institutions are given below:

- ***Coordination with UGC***: UGC provides various guidelines to HEIs on different aspects including some relevant to environmental management (detailed in section 3.1.1.2). The

UGC also supports HEIs with funds for infrastructure development. HEIs have a UGC committee to identify the infrastructure needs of the institution based on which they conceive the project involving CPWD / WD for plan, design and estimate preparation. After approval by the governing body of the HEI, the proposal is sent to UGC for approval and sanction of funds. Once approved, UGC releases the first instalment of the fund to the HEI. The HEI mostly get the construction executed by the CPWD or WD. There is no field visit taken up by the UGC for monitoring. However HEIs need to submit utilization certificate and geo-tagged pictures of the infrastructure created from the fund to UGC for release of second instalment of the payment and for availing grants in future from UGC. The 'Swachh Bharat Swashth Bharat' guidelines of the UGC focus on environment related aspects including undertaking plantation drives to increase the green cover and conservation of old trees, energy production using solar panels, creating plastic free environment, rain water harvesting, recycling of waste, green building concept, etc.

- ***Coordination with RUSA***: Fund for the infrastructure development and renovation is provided by RUSA to HEIs having NAAC accreditation. For this every HEI constitutes a Project Management Unit (PMU) also known as RUSA committee. Based on the infrastructure needs identified by the committee, they conceive a project and involve the CPWD or WD for plan, design and estimation. After approval by the governing body of the HEI the proposal is sent to the RUSA Coordinator at the HED for approval and sanction of funds. Once approved, the first instalment of the fund is released to the HEI. The HEI mostly get the construction executed by the CPWD or WD. There is no field visit taken up by the RUSA for monitoring and inspection. However HEIs need to submit utilization certificate and geo-tagged pictures of the infrastructure created from the fund to RUSA for release of second instalment of the payment.
- ***Coordination with National Assessment and Accreditation Council (NAAC):*** HEIs prepare the Self-Study Report (SSR) as per guidelines and submit it to NAAC along with other required documentation. NAAC constitutes the peer teams to visit the HEIs for the assessment. One of the assessment criteria is 'Innovations and Best Practices' (Criteria VII) which includes 'Environment Consciousness' as one of the parameters. This covers the practices adopted and action taken for energy conservation, rain-water harvesting, waste recycling, carbon neutrality, etc.

Coordination between HEIs and State level institutions

3.4.4.1 Related to Civil works

- ***Coordination with WD***: The coordination in different phases is as explained below:
    - Pre-construction phase: HEIs, after identifying the funding source, approach the Works Department with their plan for infrastructural development. WD then undertakes the site survey, prepares the structural & architectural plan and provides the estimate to the HEI. The HEI's Building Committee takes the approval from their governing body and sends the proposal to HED for sanction of funds. The HED approves the proposal and releases the funds to WD in case of Government HEIs. In case of Government-Aided and Block Grant HEIs, the fund is deposited directly to their account.

- Construction phase: In all Government HEIs, construction is done by WD. Government-Aided and Block Grant HEIs also prefer to get the construction done by the WD, but may also opt for hiring a private contractor. For executing the construction, WD selects the contractor through e-tendering. During the construction, assistant / junior engineers of WD regularly (at least once in 15 days) visit the construction site for monitoring and inspection. The members of the HEI's Building Committee also occasionally visit the site to check progress of the construction work – but there is no systematic inspection, monitoring or reporting.
- Post-construction phase: On completion of the construction work, a technical inspection is undertaken by the WD's Executive Engineer or his/her appointee. On clearance based on this technical inspection, the building is handed over to the HEI. Any repair and maintenance of the building, if required, till one year after the handing over the building is undertaken by the WD on written communication from the HEI.

- ***Coordination with CPWD***: The coordination in different phases is as explained below:
  - Pre-construction phase: UGC / RUSA committee of the HEI identifies the available fund for infrastructure development under UGC and RUSA and undertake the need assessment of the HEI. Once the project is conceived, the HEI approaches the CPWD which undertakes the site survey, prepares the plan and provides the cost estimate, which is then sent to UGC / HED by the HEI. Once the proposal is accepted the fund is released to the HEI.
  - Construction phase: HEIs prefer to get the construction work done by the CPWD. However, Government-Aided and Block Grant colleges may also opt for a private contractor. In case CPWD is selected for construction, the HEI communicates the same to the CPWD and deposits the money into their account. For the construction, the CPWD selects the contractor through e-tendering process. During the construction, assistant / junior engineers of the CPWD regularly (at least once in 15 days) visit the construction site for monitoring and inspection. Members of the Building Committee of the HEI also occasionally visit the location to check the progress of the construction work.
  - Regarding the choice between WD and CPWD - although there is no guideline for preferring one over another, as a thumb rule, HEIs involve WD in case funding is by state government and CPWD in case it is by central agency (UGC, RUSA).
  - Post-construction phase: On the completion of the construction work, a technical inspection is done by the Executive Engineer or his/her appointee. Once he/she certifies its quality, the building is handed over to the HEI. The defect liability period of CPWD is one year after the handing over the building to the client. So, if required, post construction maintenance is undertaken by the CPWD.
- ***Coordination with OSPHWC:*** The HED/HEI approach the OSPHWC for design, plan and estimation of the new building. OSPHWC prepares the plan and details of the building after undertaking the field visits to HEI. It is then sent to HEI for approval. After approval, OSPHWC prepares the estimate and submits to HEI for obtaining administrative approval of HED. On receiving it, HEI deposits the fund with the OSPHWC. Corporation then floats the tender and executes the construction work of the building through the

contractor/agency. The works are done under the direct supervision of JE/AE who visit the site once in a week / fortnight. Reporting to HEI is done by providing utilization certificate of the funds received and progress of work whenever asked for it.

- ***Coordination with OSDMA and Fire Department***: The OSDMA has five 'Orissa Disaster Rapid Action Force (ODRAF)' in Cuttack, Chatrapur, Balasore, Jharsuguda and Koraput districts. HEIs in these approach the ODRAF and Fire Department for the training & orientation of the staff as well as students on disaster management. During the ESA field study, Khallikote College, Semiliguda College, Laxmipur College reported having organized training sessions by ODRAF and NDMA for students. Similarly Semiliguda College, Tentulia Sasan College, Khallikote College, Jeypore College reported that mock drills were conducted by the Fire Department for the students.
- ***Coordination with other state agencies involved in infrastructure development (IDCO, Rural Development Department)***: Coordination between with HEIs and IDCO is as per the need. The agency is approached by HEI for seeking their technical consultation and getting the construction work done. Regarding RDD, there is no direct coordination between HEI and Rural Development Department. MP/MLA approves the infrastructural development proposal of the college and informs about this to the block level Panchayat Samiti office and Gram Panchayat Extension Officer (GPEO) posted at the Block Development Office. The GPEO then puts up the file to Block Development Officer (BDO) for the approval of the work who in due consultation with GPEO, AE & JE approves it (AE/JE usually are part of the college building committee). Planning, designing and estimation of work is then done by the JE and technically approved by AE. The construction work is then assigned to the private contractor through tender process. Assistant Engineer and Junior Engineers are responsible for the supervision of the work.

3.4.4.2 Related to Water & Sanitation and Waste Management

- ***Coordination with local bodies*****:** HEIs depend on Public Health Engineer Organisation (PHEO) for water supply and on local bodies (corporations/municipalities) for their solid waste management. Workers of local bodies routinely visit the HEIs for collection of solid waste. Visit schedule varies location wise.

  In rural areas The HED/HEI approach the RWSS (Rural water supply and sanitation) for execution of the water supply and sanitation works. Department on receiving the request, undertakes the location visits, prepares the Layout Plan and takes approval of HEI. After approval, RWSS prepares the estimate and submits to HEI for obtaining administrative approval of HED. On receiving it HEI deposits the fund with the RWSS and department then floats the tender and executes the work through the contractor/agency. On completion of work utilization certificate is provided to HEI. RWSS officials do not visit HEIs routinely and come only on request.

  Regarding waste management in rural area, it is the responsibility of the HEI to dispose waste. GP staffs do not collecting waste from HEIs at present, but there is a proposal for collection by GP staff in near future.

- ***Coordination with State Pollution Control Board (SPCB)*****:** As per EIA notification, educational institutions are exempted from taking environment clearance for construction. However, they are to ensure sustainability of the environment. There is no monitoring or coordination between the SPCB and the HEIs.

2.2.5 Key conclusions of the Institutional Assessment

The assessment of national and state level institutions and programs indicates that adequate institutional arrangements exists both at the national and state levels with clear mandate for ensuring environmental management in areas applicable to OHEPEE. New infrastructure in HEIs is being developed by involving government agencies which are technically equipped to undertake such assignments while complying with existing good practice on environmental management and occupational health & safety. However, the following emerge as issues of significance:

1. There is no designated staff position at the HED to focus on environmental management aspects of the HEIs. There is also no designated committee at HEIs to focus on environmental management aspects.
2. Overburdened staff in WD may not be in a position to ensure integration of environmental aspects in design and undertake regular field inspection and monitoring during construction.
3. Selection of the construction agency from the available multiple agencies depends upon the discretion of the HEIs who sometimes prefer to involve private agencies that may or may not have the required technical expertise. Although private contractors are usually hired for small renovation works (costing less than Rs 0.2 million) a few colleges prefer to take the services of private contractors for even new constructions (for example, B.B. College, Baiganbadia is constructing a hostel by hiring a private contractor).
4. The Building Committee of the HEIs includes a WD representative as per the prescribed guidelines. The other members who are mostly are faculty and non-teaching staff do not take an active role due to lack of technical knowledge / orientation. Moreover, with outsourcing the construction work to WD / private agency, the HEIs completely rely on the agency involved.

Thus, the challenge for the program lies in:

1. Providing basic technical training/ orientation to HEI's Building Committees for effective monitoring of the environment related aspects in design and construction.
2. Evolving mechanisms for actively involving relevant state departments and utilizing their domain expertise to strengthen the environment management systems in HEI. For example, the State Pollution Control Board can help by providing technical guidance on environmental management (e.g., management of solid and liquid wastes), the WD can assist HEIs in preparing the medium and long term plans for systematic infrastructure development, OSDMA can train HEIs in preparing Disaster Management Plans, etc.

2.3 Legal and Regulatory Framework applicable to the Program

This section provides details on the environmental policies, laws, regulations of the Governments of India and Odisha, as well as guidelines that are relevant to the activities supported under the OHEPEE program. It also provides an assessment of the adequacy of the coverage on environmental aspects in the legislative and regulatory framework.

2.3.1 National Level Legal and Regulatory Framework on Environmental Aspects

The various national policies and regulations applicable to OHEPEE have been tabulated in Table 5:

Table 5: Various National level acts, policies and GOs relevant to OHEPEE

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
National Policy on Safety, Health and Environment at Work Place, 2009	The policy provides an action programme that includes enforcement, national standards, compliance, awareness, occupational safety and health development. Clause 4.4.7 under the Awareness Section states that it should be done by suitably incorporating teaching inputs on safety, health and environment at work place in schools, technical, medical, professional and vocational courses, and distance education programs.	Infrastructure strengthening of HEIs will be one of the activities supported under OHEPEE, and needs to be in alignment with this Policy.
Environment (Protection) Act, 1986, EIA Notification, 2006 and Amendment 2014	The objective of the Act is to provide for the protection and improvement of the environment. *Environmental Impact Assessment Notification, 2006 and Amendment, 2014*[14]: Building and Construction projects that are ≥ 20,000 sq.m. and <150,000 sq.m. of built-up area require prior environmental clearance from the State Environment Impact Assessment Authority (SEIAA) before any construction work, or preparation of land except for securing the land is started. In case the project is located within 10 km from the boundary of a notified protected area, notified critically polluted area, notified eco-sensitive area or inter-state/international boundaries, prior environmental clearance is required	It is unlikely that any of the construction activity in the HEIs to be undertaken with Program support will be larger than 20,000 sq.m. However, educational institutions (school, college, hostel) are not included under the purview of this notification – but such buildings are required to ensure sustainable environmental management, solid and liquid waste management, rain-water harvesting and

[14] MoEFCC Notification Dated 22 December 2014.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
	from the MoEFCC of the Central Government.	use recycled materials such as fly ash bricks.
Hazardous Waste Management and Handling Rules 1989 **Amended in 2000 and 2003**	This has been notified by Ministry of Environment and Forests. As per these rules all hazardous wastes are required to be treated and disposed off in the manner prescribed.	Applicable to HEIs undertaking research activities using radioactive materials/hazardous materials or using such materials in labs
Coastal Regulation Zone (CRZ) Notifications 2011	Construction activities are prohibited in the 'CRZ-I' and in the 'No Development Zone' of 'CRZ-III'. Construction activities are regulated in the 'CRZ-II' – construction involving more than 20,000 sq.m. needs to be in accordance with the EIA notification 2006; construction involving less than 20,000 sq.m. needs to be approved by the State/UT planning authorities based on prior recommendation of the Coastal Zone Management Authority.	This notification is relevant for construction activity in HEIs located in coastal areas.
Water (Prevention and Control of Pollution) Act, 1972 amended in 1988.	The objective of this act is to provide prevention, control and abatement of water pollution and the maintenance or restoration of the wholesomeness of water.	Applicable to construction of HEI infrastructure, maintenance of any water bodies in the premises, and to the discharge of the sullage, sewerage and drainage of water from the HEI campus.
Air (Prevention and Control of Pollution) Act, 1981, amended in 1987	This Act has provisions for the prevention, control and abatement of air pollution.	Applicable to HEIs during construction and renovation of infrastructure.
The Noise Pollution (Regulation And Control) Rules 2000.	The objective of this Act is to regulate and control noise producing and generating sources with the objective	Applicable for construction, demolition and renovation of the HEI infrastructure, and,

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
	of maintaining the ambient air quality standards in respect of noise. It requires that sound emitting construction equipment shall not be used or operated during night times in residential areas and silence zones (hospitals and educational institutions).	to equipment such as diesel generators.
Construction and Demolition Waste Management Rules, 2016	The Rules aim at recovering, recycling and reusing the waste generated through construction and demolition. The Rules specify that the generator of construction and demolition waste is responsible for collection, segregation, storage of construction and demolition waste generated as directed or notified by the local authority. The generator shall ensure that: there is no littering or deposition of construction and demolition waste so as to prevent obstruction to the traffic or public or drains; and that the waste is stored and disposed separately.	Applicable for waste generation during construction, demolition and renovation of the HEI infrastructure.
E-Waste Management Rules, 2016	These rules are applicable to the consumers of electrical and electronic equipment. Bulk consumers (including HEIs) of electrical and electronic equipment are required to ensure that e-waste generated by them is channelized through authorized collection centres or service providers to authorized dismantler or recycler. They are required to maintain records of e-waste generated and make such records available for scrutiny by the State Pollution Control Board. End-of-life electrical and electronic equipment are not to be admixed with e-waste containing radioactive material. Bulk consumers are required	HEIs are a bulk consumer and generate significant quantities of e-waste. Applicable for equipment purchase/replacement with support under OHEPEE.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
	to file annual returns to the State Pollution Control Board.	
The Batteries (Management and Handling) Rules, 2001	These Rules require consumers to ensure safe disposal of used batteries through depositing with dealers, registered recyclers, designated collection centers, etc. Bulk consumers (those purchasing more than 100 batteries per annum) are also required to file half-yearly returns with the State Pollution Control Board and auction used batteries to registered recyclers only.	Applicable to disposal of batteries used in HEIs.
Solid Waste Management Rules, 2016	Every waste generator is responsible for segregation and storage of biodegradable, degradable and hazardous wastes and handing them over to authorized waste collectors as per the directions of the local authorities.	Various types of solid wastes are generated in HEIs during their day-to-day administrative and academic operations. So it is relevant to OHEPEE.
Forest Act 1927, Forest (Conservation) Act, 1980, amended in 1988	Prior approval of the Central Government is required for use of any forest land for non-forest purposes including construction of buildings. In case of use of forest land in protected areas, apart from prior approval of Central Government, prior recommendation of Standing Committee of National Board for Wildlife (NBWL) and the prior leave of the Supreme Court is also required[15].	This Act is relevant in case construction/ expansion of HEIs is on land that is designated as 'forest land' and/or is in 'protected areas'.
Wild Life (Protection) Act 1972.	This Act prohibits destruction, exploitation or removal of any wild life, and, provides for protection to listed species of flora and fauna.	This Act is relevant in case construction/ expansion of HEIs is on land that is designated as 'protected areas' for wildlife conservation.

[15] Viewed at http://forestsclearance.nic.in/writereaddata/public_display/schemes/1840901920$Guidelines.pdf on 11 May 2016.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
		However, this has been excluded from the Program. Also applicable to any research/laboratory activity in HEIs involving wild species of plants and animals.
The Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010	Construction is prohibited in a radius of 100 meters from a protected monument and is regulated in a radius of >100-300 meters from a protected monument. Permission of the National Monuments Authority needs to be taken in case of repair/renovation in the prohibited area or construction/ reconstruction/ repair/ renovation in the regulated area.	Applicable in case of infrastructure development works in HEIs located in proximity to ancient monuments and archaeological sites and remains. However, this has been excluded from the Program.
Food Safety and Standards Act, 2006	Under this act all Food Business Operators are required to be registered/licensed and follow basic hygiene and safety requirements.	This is relevant to canteens and hostel dining in HEIs.
National Building Code, 2005	Published by Bureau of Indian Standards (BIS), it aims to provide an unified building regulations for controlling and regulating building construction throughout the country for use by Govt. Departments, municipal bodies and other construction agencies.	Applicable for planning, designing and construction of HEI buildings.
UGC Guidelines		
Guidelines for Universities, Research Institutions and Colleges for	Includes guidelines for procurement and storage of radioisotopes and chemicals along with defining roles and responsibilities of different	Applicable to the laboratories and equipment in the HEIs

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
Procurement, Storage, Usage and Disposal of Radioactive and Other Hazardous Materials / Chemicals	stakeholders. The key provisions include: Depending upon the usages of radio isotopes, hazardous chemicals/materials, laboratories are required to prepare and display standard operating procedures (SOPs); It is mandatory to get calibrated all the radiation monitors at a regular interval from an authorized agency; Guidelines provide detailed information for the disposal of different types of radioisotopes used in educational institutions; Guidelines provide measures to be taken in storing, usage and disposal of chemicals and responding to emergency; Measures to respond to a chemical emergency like educating students on the location and use of all safety and emergency equipment prior to laboratory activity, conduct appropriate safety and evacuation drills on a regular basis, etc.	
Guidelines for discontinuation of dissection and animal experimentation in Zoology/Life Science in a phased manner by UGC	Guidelines include the following provisions: HEIs are required to strictly adhere to the Wild Life Protection Act 1972 and the Prevention of Cruelty to Animals Act 1960. All HEIs are required to constitute Dissection Monitoring Committees (DMC) to monitor the use of animals for dissections and experimentation in laboratories. There shall be reduction in the number of animals for dissection and experimentation as well as in the number of species with all ethical considerations. Preference shall be given to laboratory bred animal models and for use of computer simulation learning devices.	Applicable to dissection activity in Zoology departments of HEIs

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
UGC Guidelines on safety of students on and off campuses of Higher Educational Institutions	Key points are: 1. Any physical infrastructure housing students, whether HEI or hostels, should be secured by a boundary wall of such height that it cannot be scaled over easily. In order to further fortify it, a fence of spiraling barbed wires can be surmounted on the wall so that unauthorized access to the infrastructure is prevented effectively. 2. HEIs should flash at frequently visited junctions like canteen and notice boards, emergency helpline numbers so that students can record and use them as and when required. 3. HEIs can install the emergency notification system through which emergency message can be sent via email, telephone, cell phone and text messaging within minutes of the occurrence of an incident. 4. HEIs should install a fire safety system under which mechanisms for the detection of a fire, the warning resulting from a fire and standard operating procedures for the control of fire are evolved. This may include sprinkler systems or other fire extinguishing systems, fire detection devices, stand-alone smoke alarms, devices that alert one to the presence of a fire, smoke control and reduction mechanisms and fire doors & walls that reduce the spread of a fire. Students and staff should be trained in the effective operation of firefighting devices. Mock drills for fire situation should be	Applicable to all the HEIs for ensuring effective implementation of safety measures for their students

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
	undertaken at least once in a semester. 5. As recommended by UGC, HEIs should introduce a compulsory course on Disaster Management for all students. For providing students the first hand experience of tackling situations of disaster, HEIs should organize mock drills, workshops and awareness programs frequently. 6. In case of food outlets, canteens and messes, HEIs should ensure that standards of quality and hygiene are strictly observed and the food on offer is certified through hygiene test report by expert doctor for foods, water and cleanings.	
Guidelines for Swachh Bharat-Swasth Bharat Scheme of the UGC	Proper waste segregation and disposal system should be in place in HEIs; Public toilets must not only be constructed but also well maintained.	Relevant for infrastructure development and facility management of HEIs.

2.3.2 State Level Legal and Regulatory Framework on Environmental Aspects

The various state laws and regulations applicable to OHEPEE have been tabulated in Table 6:

Table 6: Various State level acts, policies and GOs relevant to OHEPEE

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
Bhubaneswar / Cuttack / Sambalpur / Rourkela / Berhampur Development Authority (Planning & Building	All these specify details that are relevant to environmental management such as site selection that does not interfere with natural drainage, plantation, rain water harvesting, solar water heating, water and sanitation, fire safety, etc.	These standards are applicable to HEIs in urban areas for building construction and expansion activities.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
Standards) Regulations, 2008		
The Orissa Forest Act, 1972 **The Orissa Forest (Amendment) Act, 1982**	This Act aims to consolidate the law relating to forest conservation in the state of Odisha.	This Act is relevant in case construction/expansion of HEIs is on land that is designated as 'forest land' and/or is in 'protected areas'.
The Wild Birds & Animals Protection Act, 1912; Amendment Rules 2006	This Act was notified to make provisions for the protection and preservation of certain wild birds and animals.	This Act is relevant in case construction/expansion of HEIs is on land that is designated as 'forest land' and/or is in 'protected areas'.
Wild life Protection Rules (Orissa) 1974	The main aim is to protect wild life species in general, critically endangered and threaten species in particular. Provisions under this ensure declaring areas to be protected for wild life conservation.	This Act is relevant in case construction/expansion of HEIs is on land that is designated as 'forest land' and/or is in 'protected areas'.
Orissa Fire Crackers and Loud Speakers Act 1958 and the Noise **Pollution (Regulation and Control) Rules 2000**	The aim of this is the prevention of environmental sound pollution and creating general awareness on the hazardous effects of noise pollution. This stipulates restriction of use of fire crackers and loud speakers in sensitive areas like hospital, schools, colleges, religious places, etc. It also regulates night (beyond 10 PM) time use of loud speakers, crackers, etc.	Applicable to OHEPEE since it covers colleges also
Common Minimum Standard (CMS) Guidelines, 2016-17 of the HED	Key relevant points are the following: • The laboratories for practical subjects should be well equipped with required furniture, equipment and chemicals • Adequate infrastructure for classes, student and staff common rooms, office, lavatory,	Relevant for institutional building infrastructure and its safety in HEIs

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
	drinking water facility etc., are to be made available • The college campus should have a boundary wall • The status of the buildings should be supervised and certified by an engineer not below the rank of Asst. Engineer in the beginning of every session. Necessary action should be taken for demolition/repairing of unsafe buildings/structures • Data should be updated regularly and should include information on the infrastructure position of the college • Steps should be taken by the govt. and non govt. degree colleges for NAAC accreditation and subsequent reaccreditation.	
OPWD Code	It has integrated various environmental aspects in design and construction, including the following: horticulture/landscaping works on completion of construction work; sanitary, water supply and electrical installations in public buildings; safety management including building and structural safety, electrical safety, public and worker safety, safety features for water supply and sanitation works, fire safety; proper disposal of solid waste which includes construction or demolition waste management and Environmental Safeguards including conducting Environmental Impact Assessment (EIA) and Preparing Environmental Management Plan (EMP). However EIA and EMP are required only for few project categories, one of	Relevant for institutional building infrastructure design, construction, safety and environment management

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
	which is Building & Construction Projects for ≥ 20,000 sqm. Additionally it has been stated that as per the requirements of MoEF or funding agency - such as the World Bank or Asian Development Bank, EIAs shall be conducted and EMPs shall be prepared.	

2.3.3 Adequacy of legislative framework on environmental aspects

Assessment of the adequacy of the existing legislative framework in its coverage of the environmental aspects pertaining to the relevant OHEPEE activities is presented under the following heads:

Adequacy of the regulatory framework to address the environmental issues

Construction of building: As described earlier, the legislative framework provides for the following:

1. There are laws and regulations concerning management of environmental impacts related to construction of infrastructure; construction in ecologically sensitive areas such as forests, coastal areas, etc.; construction in proximity of cultural heritage sites such as protected monuments.
2. There are guidelines for construction that integrate environmental management, occupational health and worker/public safety. These laws, regulations and guidelines have been integrated into the Works Manual and the General Conditions of Contract of the CPWD and the WD.
3. There are also rules that prescribe procedures for managing construction and demolition waste.

Maintenance of the building: The Works Manuals of the CPWD and the WD specify procedures for periodic post-construction inspection of buildings for safety. Also the Common Minimum Guidelines issued by HED covers this aspect.

Maintenance of the environment: There are laws and regulations for the protection of environment from water, air and noise pollution. There are also rules concerned with waste management. There also exist UGC guidelines on environmental management in HEIs (use of animals, dealing with radioactive materials, hygiene). Additionally, the accreditation process of the NAAC also incorporates environmental management aspects.

Gaps in implementation of laws and guidelines

For building construction: Being the head of the division, the responsibility of ensuring the implementation of the applicable laws, regulations and guidelines during the construction work is on the Executive Engineer. This is done by including relevant clauses in the bid document and later in the agreement which is signed by both, the contractor and the

Executive Engineer. However, this inclusion is not consistent or comprehensive across the different construction agencies:

The bid document/agreement of the Works Department[16] mentions the following provisions: the contractor is responsible for procurement of material from authorized sources and quarries; is responsible for payment of compensation under workmen compensation act; is responsible for abiding by the CPWD safety code. There is no clause related to the environment management in the bid document of the Works Department.

The CPWD has more comprehensive coverage of environment and safety aspects in its bid documents/agreements. It also includes adherence to Green Building norms and requires work execution in a manner consistent with the GRIHA Green Building rating[17].

The bid documents/agreement of IDCO also includes relevant clauses on workers' safety and refers to the CPWD safety code. The contractor is required to obtain all statutory approvals and any required environment clearance, fire clearance, etc[18]. It also mentions that the structural design of the buildings should as per IS/BIS standards and should be as per the requirements of the Green Building certification.

The Operations and Accounts Manual of Odisha State Police Housing & Welfare Corporation Limited does not mention monitoring and managing environmental aspects during the building design and construction.

For environment management: The responsibility of ensuring adherence with applicable laws, regulations and guidelines is primarily with the head functionary of HEIs supported by the various committees (described in section 3.3.2). However, there is limited awareness and no monitoring of adherence to the legal and regulatory provisions and guidelines on environment management aspects.

The Self-Study Report format of the NAAC incorporates Environment Consciousness under 'Criterion VII - Innovations and Best Practices'. However, the weightage given to this criterion is just 30 out of 1000 – leading to several HEIs either skipping this section or not stating anything substantial.

2.4 Assessment of Environment Management System

2.4.1 Environment Management Systems in the OHEPEE Program

The OHEPEE will involve support to Institutional Development Plans (IDPs) developed by the HEIs. The IDPs may involve upgradation of the existing infrastructure – including construction/renovation of buildings and procurement of equipment – as per the identified requirements. This section presents an assessment of the existing environment management system relevant to this activity in the OHEPEE.

[16] Bid Identification No.: CE-(B)- 28 / 2015-16, Dt. 05.01.2016 - Technical Bid Documents / Detailed Tender Call Notice For The Work, "Construction of 300 Seated Women's Hostel Building for Government Women's College at Bhawanipatna in the district of Kalahandi".
[17] Agreement number 39/CE(EZ-V)/EE/BCDIII/2014-15 – 300 seated boys hostel for Utkal University
[18] No. HO/P & C/EST/E-1141/01/2015/ 18351, dt 13.08.2015

Systems for ensuring environmental management in civil works in HEIs

Legal and regulatory provisions as explained in the previous section comprehensively cover the different aspects of the building construction and environment management. Various amendments in acts and regulations indicate that these are being regularly updated as per the increasing awareness about these issues and consequently rising requirements for their effective implementation.

The Government has various specialized Construction Agencies like Works Department, Centre Public Works Department, IDCO, OSPWHC and RDD etc., who are involved in building design and construction. CPWD and WD have developed codes, manuals, technical specifications, and other necessary technical publications. These exhaustively cover all the components of Green Building construction, safety norms, waste management, etc.. These codes are also mentioned in the tender documents to ensure the compliance by the contractor. IDCO also refers to CPWD codes in the tender documents. The Construction Agencies have their field presence up to district, sub-division and block levels through qualified engineers. Monitoring of the construction works is to be done by this technical work force.

Higher Education Department also has developed mechanisms to monitor the institutional infrastructure in HEIs. It has provided e-space on the website under module 'CIP' to capture the infrastructural information of HEIs. Common Minimum Standard (CMS) developed by the department has building safety and cleanliness aspects. The HED has also made NAAC accreditation mandatory – and the accreditation criteria include 'Environment Consciousness' as one of the parameters.

Though the overall system for environment management in HEIs is in place, the implementation has been found to be inconsistent. During field visits to HEIs where there was on-going construction activity, there was weak compliance with the norms mentioned in the codes (for example, no use of plastic screens at construction site to curb dust pollution, no use of Personal Protective Equipment, no emergency kit, etc.). However, the use of fly ash bricks was found at all the places where construction was happening.

Interaction with engineers of Works Department indicated that they are not fully aware of Green Building concepts, though there is some awareness on departmental codes. No design brief is provided by the HEIs for the planned construction – any specific requirements of the HEIs are communicated through the field engineers of the Works Department to its architects. The HEIs are however required to approve the design prepared by the architects of the Works Department.

There is only limited appreciation of the need for anticipating environmental impacts of building construction and for management of environmental impacts during the construction. It was also reported that there is no capacity building on environmental aspects (including green building concepts) of the ground technical staff by the Works Department. Monitoring is limited due to the shortage of staff and lack of awareness.

The contractors hired by the Construction Agencies also have limited awareness on the Green Building and environment management concepts.

Regarding compliance with HED's instruction to update infrastructure information on the CIP module, it was found that not all HEIs update the information due to poor internet connectivity, frequent electricity failure, lack of staff training and inadequate staff.

Overall, though there are specialized Construction Agencies, factors such as high work load, inadequate staff, and limited staff training opportunities limit their capacity to effectively integrate environmental management considerations in civil works. Similarly in HED, though the monitoring systems do exist, there are gaps as the systems rely on voluntary contribution of data.

Systems for ensuring environmental management of equipment in HEIs

Activities concerning hazardous materials/chemicals are regulated by 'Hazardous Waste Management and Handling Rules 1989' of Ministry of Environment and Forests. Based on this UGC has framed guidelines for universities and colleges for procurement, storage, usage and disposal of radioactive and other hazardous materials / chemicals.

Their management has been described as below:

Radioactive material & equipment: UGC guidelines states that all radiation related activities in laboratories have to be carried out by the designated radiation staff under the supervision of the Radiation Safety Officer (RSO) who can be a faculty with experience in radiation field and get designated as RSO by AERB19 on the recommendation of the institution. Other responsible persons may be designated as Supervisors who can be lab in-charge and actual users who use radioisotopes/hazardous materials/chemicals for research or routine experiments. Institutions need to submit an application to AERB to obtain consent for procurement of sealed sources. The sealed sources should meet the relevant standard prescribed by AERB. Besides this the design of the room designated for keeping radioisotope materials and irradiators shall be approved by AERB. Appropriate radiation monitors should be in place and shall be periodically calibrated. Users shall be provided with personal dosimeters and the personal doses shall be regulated as per AERB guidelines. Institution should have security measures for radioactive sources in accordance with AERB. Laboratories shall prepare SOP based upon UGC guidelines. Institution should have Radiation detection instruments which should be used to provide qualitative and quantitative information on radioactive materials. The area and workplace monitors should include hand held or lab based spectrometers. It is mandatory to get calibrated all the radiation monitors at a regular interval from an authorized agency. Disposal of radioisotopes should be as per the AERB guidelines.

During the ESA it was observed that HEIs are not using any isotope or radioactive material in labs.

Diesel generators: HEIs have diesel generators as one of the alternative source of energy. During periods of power supply failure, these are used for carrying out academic and administrative operations. The prolonged duration of their use pose greater threat to environment as its exhaust cause poor air quality, noise pollution while generating lots of heat. Besides this it contains many toxic air contaminants which are injurious to human health.

[19] Atomic Energy Regulatory Board

The Central Government has framed rules for generator manufacturers under Environment (Protection) Act, 1986. Under this all the norms for noise limits and emissions have been enforced at manufacturing stage through notified institutions/laboratories wherein Central Pollution Control Board (CPCB) functions as nodal agency. As per it, users having diesel generator set manufactured before 1st January, 2005 shall control the noise from DG sets by providing an acoustic enclosure or by treating the room acoustically. DG sets shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB(A). Additionally installation of a DG set must be strictly in compliance with the recommendations of the DG set manufacturer. A proper routine and preventive maintenance procedure for the DG set should be set and followed in consultation with the DG set manufacturer which would help prevent noise levels of the DG set from deteriorating with use.

In 2015, CPCB has given guidelines for installation of gensets, Do's and Don't for Operation & maintenance of common facility for power back-up. In this CPCB has given the active life of Gen sets and recommended phasing out of pre 2005 manufactured Gen sets. As per this, phasing out of old generators as per following schedule may be enforced by concerned SPCB/PCC, area SDM and Police.

During ESA, it was found that HEIs are not aware of these guidelines. However the installations of gensets in institutions have been done by the manufacturing company's technicians as per the applicable rules and guidelines. Maintenance of gensets up to one year after the installation is done by the manufacturing company. HEIs reported to have the practice of signing Annual Maintenance Contract (AMC) with the manufacturing company for preventive and breakdown maintenance after this period.

Inverters with lead acid batteries: HEIs also have invertors as an alternative source of energy. Mostly these are attached to lead acid batteries which have environmental and health implications.

The Batteries (Management and Handling) Rules, 2001 explicitly indicates the responsibilities of consumers of lead acid batteries. According to this it shall be the responsibility of the consumer to ensure that used batteries are not disposed of in any manner other than depositing with the dealer, manufacturer, importer, assembler, registered recycler, re-conditioner or at the designated collection centers. Bulk consumers (pruchasing more than 100 lead acid batteries per annum) are required to file half-yearly return in Form VIII to the State Pollution Control Board and they may auction used batteries to registered recyclers only.

During ESA, it was found that HEIs are not aware of these guidelines. However the installations of inverters with lead acid batteries is done by the authorized dealers of the manufacturing company. In case battery replacement is required, HEIs call the authorized dealer and get the old batteries exchanged with new ones. Further disposal of the used batteries becomes the responsibility of the authorized dealer.

Systems for ensuring adequate infrastructure

National Building Code specifies the infrastructural norms for educational buildings. During the building design and construction, these are to be implemented by the HEIs and the construction agencies. HEIs have building committees for planning and construction of

building infrastructure and its maintenance. However it has been found that these committees have limited awareness on the norms. The ground levels technical staffs of the construction agencies as well as private contractors also do not have adequate awareness and expertise to ensure the implementation of Green Building aspects and environment management norms.

The HEIs have limited funds for infrastructure expansion and maintenance. The funds come from various sources – UGC grants, RUSA grants and HED grants. These funds are received at different points in time and are not allowed to be clubbed with other funds to enable undertaking a single big project. This results in piecemeal construction happening in the HEIs depending upon the available resources instead of following a master plan for planned infrastructural development. Besides this construction work in colleges is also done using MPLAD[20] and MLACDS[21] fund. However this fund does not come to colleges and Block Development Office gets the work done after receiving the request from the respective MP and MLA.

Another aspect related to this is that no guidance is provided to HEIs on undertaking an assessment of the adequacy of the existing infrastructure and planning for its augmentation (for example, is the existing sanitation facility adequate? How many toilets should be there for the given number of student strength?). This leads to continuation of infrastructure gaps in some critical areas – sanitation, fire safety, waste management, poor maintenance of the building. There was no proportionate increase in the basic infrastructure to match the increasing number of seats in colleges. Especially, HEIs not having enough land for infrastructure expansion could not take any step to correct this mismatch even though funds were available under infrastructural assistance (e.g. Government Women's College, Baripada has not been able to use funds from RUSA due to lack of availability of land).

During the field visits to HEIs, most of the colleges mentioned about the inadequacy of their current building infrastructure compared to their student strength. As given in the Annexure 3, existing area per college is less than specified by the NBC 2005. Of the visited HEIs, only 5% colleges have WC for males as per the NBC specific ratio. Average ratio was 1 WC per 200 male students whereas the average ratio of urinal was 1:154. For females, no college was found to be having WCs as per the specifications. Average ratio was 1 WC per 190 female students. In college hostels, the average ratio of WC was 1:46 for male and 1:17 for female students. Average ratio for male urinals was 1:44. Moreover out of visited 18 colleges, 7 do not have hostel facilities for students.

[20] Members of Parliament Local Area Development Scheme (MPLADS), under which each MP has the choice to suggest to the District Collector for works to the tune of Rs.5 Crores per annum to be taken up in his/her constituency. (http://www.mplads.gov.in/mplads/Default.aspx)

[21] Member of Legislative Assembly Constituency Development Scheme (MLACDS) is fully funded by the State Government. Under this each MLA identifies and proposes the works to be executed in his Constituency. The Scheme is implemented both in rural and urban areas. The main objective of the Scheme is to identify and implement the essential works to bridge the critical infrastructure gaps in the Assembly Constituencies. (http://tnrd.gov.in/schemes/st_mlacds.html)

Systems for ensuring environmental management in operation of HEIs

The various components of environmental management in operations of HEIs have been described as below:

Water management: The source of water in visited HEIs was Bore well (depth of a bore well can vary from 150 feet to 1500 feet) in 94% institutions, Tube-well (depth of a shallow tube-wells can vary from 60 feet to 230 feet and of deep tube-wells from 231 feet to 500 feet) in 56% and both open-well and PHED supply in 33% to 39% institutions respectively. All HEIs visited provide safe drinking water by installing water filtration and purification systems (mostly RO based filter units). However, some of the RO systems were found to be non-functional during the visit. There were also no records on the date of change of their filters and water quality check. HEIs with open-well water source reportedly have the practice of chlorinating it once in a quarter. However there is no system in place to monitor the quality of water. The reason for this was that water from the wells is being used only for general purpose like watering the plants, washing clothes, utensils, in toilets etc. Also, as the drinking water facilities have RO systems to purify the water, the HEIs assume that further quality monitoring is not required.

Structures for Rain Water Harvesting were found in only 10% of visited HEIs while it is being constructed in another 10% of HEIs.

Sanitation: The ratios of WC/Students in all the visited HEIs were found to be higher than the recommend as per NBC code except in universities and in the Government Degree College, Koraput. In some of the HEIs, a few of the available toilets were found to be defunct. In almost all HEIs, the condition of toilets meant for students was found to be poor. With regard to toilets it was observed that private colleges focus only on creating new infrastructure rather than managing the existing one. The reasons found for the poor maintenance of toilets is their inadequate number, non-availability of housekeeping staff and poor monitoring by the institution management due to the shortage of administrative staff. This is coupled with the poor usage practices of the students (for example, many male students use the open spaces in campus for urination).

Energy management: About 55% of HEIs use alternate sources of energy to some extent on their campuses. All such HEIs use Solar Panels for generating alternate energy. This is mainly used for the illumination and that too mostly in the administrative block only (not in the teaching blocks or hostels).

Awareness on energy conservation and management is very limited in HEIs. Heads of the institutions do not consider high electricity bills as a concern requiring their attention. Rather they have the notion that with the construction of new buildings and enhancement of the transformer capacity, electricity bills are bound to increase. Regarding the use of lights and electrical appliances, there is awareness about LED lights and about the Star Rating systems for air conditioners, refrigerators, etc. However, switching over to LED lights is not considered a priority due to the higher cost (as one of the reason), and as a result, most of the HEIs use fluorescent lights and incandescent bulbs for illumination. LED lights were also found but are mostly limited to the administrative block and computer sections. Although around 35% of the HEIs reported undertaking Energy Audits at least once in a year, there was no supporting record or document.

Solid waste management: The HEIs are aware of the UGC guidelines on implementation of Swachh Bharat – Swasth Bharat. Regarding solid waste management, 60% HEIs reported to have the practice of waste segregation. However this claim is not supported by the field observations, as both biodegradable and non-biodegradable wastes were disposed into a single bin. HEIs in urban areas mentioned collection and disposal of solid waste by the municipalities. However the frequency of collection varied from 3-7 days. In HEIs outside the municipal areas, the waste is just dumped outside the campus on the waste land.

One common practice found in all the HEIs is the burning of solid waste in the campus. In urban areas, the municipality staff instructs the HEI to collect all waste at one common place from where it could be collected by them. However, in order to save effort and time, the HEI staff generally burns the waste at the departmental level rather than carry it to the common place. In rural areas, burning of waste is practiced to save the effort of carrying it outside the campus for disposal.

HEIs with science departments generate chemical waste. Only 2 HEIs visited during ESA has the practice of treating waste for elementary neutralization (Generally, 1N hydrochloric acid can be used to neutralize alkaline materials and 1N sodium hydroxide can be used to neutralize acid materials) before throwing it in the sewage system. All the HEIs reported generating very less e-waste. However whatever e-waste is generated (CDs, non functional computers, and key boards) is being dumped in one room rather than disposing due to the lack of official instructions on disposal. Garden waste in all the HEIs is being burnt except in 15% HEIs where it is being composted. Construction waste is being dumped outside the campus except in HEIs where huge land is available within the campus – in which case, the construction waste is used to fill the undulating areas inside the campus.

Liquid waste management: All the HEIs except Women's College (Baripada), Rayagada College and Vikramdev College (Jeypore), are not connected to the municipal/NAC[22] sewage system. All these HEIs have their own septic tanks which mostly drain into the open ground within the campus. The practice of getting the septic tanks cleaned periodically has not been reported in any of the HEIs located in remote and rural areas. Government colleges in urban areas (e.g. M.P.C College, Baripada) get septic tanks cleaned by the municipality staff. Sewerage Treatment Plants (STP) was not found in any of the HEIs. There is also no system for storm water drainage in HEIs. All the drains from the roof open onto the campus ground.

Hazardous materials: HEIs are aware of the UGC guidelines on use of radioactive and hazardous materials in the educational institutions. All the HEIs reported not purchasing, storing and using any radioactive materials. Administrative staff and faculty of HEIs do not consider chemicals used in the laboratories as hazardous because small quantities are used and because neutralize the waste before disposal. They also do not follow any specific protocol for storage of chemicals in order to avoid potential accidents. Most laboratories have very less space for storage and all types of chemicals are stored at one place.

Disaster management: During the ESA, Disaster management system was not observed in any of the visited institutions. HEIs have not undertaken Hazard, Risk, Vulnerability and Capacity (HRVC) analysis to identify potential structural/non-structural hazards, vulnerable population within the institution (Handicapped persons, students/teachers/staff with special medical

[22] Notified Area Council

concerns etc.) and to do the assessment of existing resources. An educational institution need to make an inventory of resources which includes Human resources (trained to conduct search and rescue operations like NCC, NSS etc.), equipment (like first aid kits, fire extinguishers, Ladder, rope, Stretchers, torches, hammers etc.) within HEI and nearby institutions. HEIs need to have contact details of the nearby resources (like hospitals, fire station, police station, ambulance services etc.) along with communication set up (like Alarm/ Mike/ Sound System/ Wireless sets etc.) and transportation facilities (like buses, four wheelers etc.).

HEIs need to have an institutional Disaster Management Committee (DMC) with clearly defined roles and responsibilities of different stakeholders of the institution. Institutional Disaster Management Plan (DMP) should have map showing safe evacuation routes

Ganjam and Khurda districts are flood prone areas whereas Khurda and Sambalpur are in the earthquake zone. Mayurbhanj, Khurda and Ganjam districts fall under the 'very high damage risk' zone[23]. However in these districts it has been observed that buildings are not designed to disaster zone specific safety. The HEI Building Committees do not have any specific knowledge about integration of disaster proofing elements into the design of the infrastructure.

Environmental Management: About 65% of the visited HEIs reported creating environment consciousness among their staff and students. All these HEIs mentioned conducting seminars / lectures for generating environment awareness. These seminars / lectures were mostly about the various types of pollution, their prevention and also on greening.

No HEI reported undertaking the Green Audit or Environment Audit. Universities have environmental science departments who undertake few projects related to environment management. Both the universities mentioned their involvement in research work on environmental management. However, there has been no action research on environmental improvement of the campus.

HEIs are aware of guidelines related to stopping the animal dissection and ensuring safety of students. All the HEIs reported to have stopped the practice of dissecting animals in their labs. Regarding the boundary wall, 83% of colleges and both the universities have it for the security of the students.

Food safety: Food Safety and Standards Act, 2006[24] explicitly provides the "Responsibilities the Food business operator". Some of the key points mentioned under this are;

- Every food business operator shall ensure that the articles of food satisfy the requirements of this act and the rules and regulations made there under at all stages of production, processing, import, distribution and sale within the businesses under his control.
- No food business operator shall himself or by any person on his behalf manufacture, store, sell or distribute any article of food –
  - Which is unsafe; or

[23] Earthquake, Flood and Wind & Cyclone zones of Odisha
http://orienvis.nic.in/index1.aspx?lid=25&mid=1&langid=1&linkid=23
[24] file:///C:/Users/pankaj.sharma/Downloads/FOOD-ACT.pdf

- Which is misbranded or sub-standard or contains extraneous matter; or
- For which a license is required, except in accordance with the conditions of the license; or
- Which is for the time being prohibited by the Food Authority or the Central Government or the State Government in the interest of public health;

- No food business operator shall employ any person who is suffering from infectious, contagious or loathsome disease.

Food Safety and Standards (Prohibition and Restrictions on Sales) Regulations, 2011[25] prohibits the sale of certain admixtures & products and puts restriction on use of certain ingredient.

During ESA it was observed that institutional administration is not aware of these rules.

Greenery Management: Greenery depends on the land availability. Only MPC College (Baripada), North Orissa University and Koraput College have significant greenery on the campus. HEIs having sufficient land reported being approached by the Forest Department for undertaking the plantation. On getting the approval from the HEI, the Forest Department plants trees and takes care of them for three years before handing them over to the HEI for maintenance. Besides this, the NCC[26] and NSS[27] units of the educational institutions carry out plantation within their campus and in nearby communities.

Educational institutions like Rayagada Autonomous College, Govt Women's College (Baripada) and Vikramdev Autonomous College (Jeypore) are located in the midst of towns and have not been able to create much greenery in their campuses due to lack of adequate space.

Systems for integration of environment management into curriculum

Environment Education is a compulsory subject in Higher Secondary Education in Arts, Science and Commerce streams. At the graduation level, Environment Studies has been incorporated as a compulsory subject in the 3rd year of Arts and Commerce streams and in the 2nd year in the Science stream. There is thus adequate exposure of HEI students to environmental studies. Students also take up small projects in environment studies as part of their academic courses. However, systems for actively engaging the student community in environmental management of the HEI campus are missing.

2.4.2 Environment impacts of Proposed OHEPEE Program Investments

The potential environmental impacts of the proposed OHEPEE program investments in HEIs are the following:

[25] http://www.old.fssai.gov.in/Portals/0/Pdf/Food%20safety%20and%20standards%20(Prohibition%20and%20Restrction%20on%20sales)%20regulation,%202011.pdf

[26] The National Cadet Corps (NCC)

[27] National Service Scheme (NSS)

Potential Environmental Benefits

The potential environmental benefits from the OHEPEE Program interventions are the following:

1. **Support for infrastructure development:** As noted in the field study, there are certain critical infrastructure gaps in HEIs. These include inadequate toilet facilities, inadequate classrooms, insufficient hostel facilities, poor maintenance of the infrastructure, cramped libraries and no system for waste management. The OHEPEE will enable HEIs to identify such infrastructure gaps through the IDPs and address them through the support for infrastructure development.
2. **Adherence to good construction practices**: The OHEPEE will require the involvement of construction agencies (CPWD, WD, OSPHWS, Rural Development Department, etc.) in the infrastructure development activity. The requirement of these Government agencies that the contractors need to comply with environmental management and safety rules, regulations, codes, etc., will facilitate adherence to good construction practices.

Potential Environmental Opportunities

The potential environmental opportunities from the OHEPEE Program interventions are the following:

- **Emphasis on NBC Codes and 'Green Buildings' concept:** The National Building Code includes the components necessary for safe and environment friendly building design and construction besides having necessary provisions for making the infrastructure PWD (persons with disabilities) friendly. The existing emphasis by CPWD on green buildings also provides an opportunity for adoption of 'green building certification' especially where construction of new buildings is undertaken.
- **Strong policy and legislative framework:** The existing policy and legislative framework is conducive to integration of environment aspects into relevant activities supported under the OHEPEE Program including renovation and up-gradation of the existing infrastructure, design & construction of new buildings.
- **Integration of EOHS aspects into bid documents/contract clauses:** The existing bid documents of the construction agencies have included certain provisions on environmental management and safety. There is opportunity to strengthen the coverage on these aspects in the bid documents. To ensure its implementation, there is need of creating awareness among the staff of the construction agencies as well as in HEIs. (A list of environmental laws & regulations that are relevant for construction and need to be included into the bid documents of the construction agencies has been given in Annexure 1 F.)
- **Integration of environment aspects into the monitoring format/s:** District level coordinators/Cluster Resource Persons visit HEIs on monthly basis for monitoring academic and administrative aspects. So there is an opportunity to integrate environment aspects in their monitoring format for comprehensive coverage on environmental aspects. (Checklist of environmental aspects to be monitored by the CRPs has been provided in Annexure 1 G)

- **Practical exposure to students through environment management related projects:** Environmental studies are part of the curriculum for Arts, Science and Commerce streams at graduation level. So there is scope for HEIs to facilitate environment related initiatives in their own campuses as well as in nearby communities. This will also provide students very valuable practical exposure to environment management.

Potential Environmental Impacts

The potential environmental impacts from the OHEPEE Program interventions are the following:

- **Impacts from improper siting of infrastructure:** Improper siting of new infrastructure could result in impacts on natural and cultural heritage sites. For example: proximity to forest areas could impact wildlife and exacerbate human-wildlife conflict; interference with natural drainage patterns could lead to poor drainage and water logging, proximity to cultural heritage sites could affect the aesthetic appeal.
- **Impacts from construction activities:** Construction of infrastructure is one of the activities that will be supported under OHEPEE. Construction activity by virtue of the nature of work may have negative impact on the local environment as well as on the safety of human beings. Though there are sufficient guidelines to mitigate the negative environmental impact, poor adherence and implementation on ground could lead to issues dust pollution, impacts from dumping of construction wastes, inadequate ventilation, high energy costs during operation, etc. Also if there is lack of compliance with safety regulations, the public and worker health and safety could be in danger.
- **Building services/facilities:** Services and facilities such as water supply, waste water drainage, rain water drainage, sanitation facilities, etc., if not maintained properly will pose environmental and health risks.
- **Waste management:** Various types of waste are generated in HEIs during the day-to-day operations. These need to be handled and disposed in a way which is environment friendly. Not doing so will compromise the health and safety of the students, staff and nearby community.

Gaps and Risks in the Environmental System

The gaps and risks identified in the environmental system of the OHEPEE Program are the following:

- **Inconsistent application of building codes in design and construction:** There is inconsistency in the implementation of the National Building Codes in the design of new infrastructure in HEIs. There are also gaps in implementation during construction activity. For example, it was observed during the field study that no precautions are taken to secure the construction site from unauthorized access, and no dust control measures are implemented.
- **Inadequate coordination between the HED, HEIs and Construction Agencies:** Infrastructure design and construction is handled by the construction agencies with little coordination with the HED and HEIs. While there are systems for coordination (such as the Building Committee in HEIs) these are not effective in implementation. The HEIs and

the construction agencies do not consult and coordinate actively in the design and construction stages of infrastructure creation.

- **Inadequate monitoring of construction by HEIs:** Members of the Building Committees of HEIs do not involve themselves in monitoring the progress of construction and ensuring compliance with legal and regulatory requirements due to a perceived lack of technical capacity and/or lack of administrative oversight over the officials of the executing agencies.
- **Inadequate monitoring by SPCB:** HEIs are required to ensure sustainable environmental management, solid and liquid waste management, rain-water harvesting and use recycled materials such as fly ash bricks for the construction. However there is no monitoring of these aspects by the SPCB.
- **Lack of capacity building of the technical staff:** The technical field staff of construction agencies consist of Assistant and Junior Engineers who are responsible for ensuring implementation of environmental and safety guidelines and norms during the construction phase. However, these agencies do not have regular systems to enhance the capacity of their technical staff. Also the contractors hired for the construction works have little awareness on these norms.

2.4.3 Assessment of Program Consistency with Core Principles in the Policy on Program for Results Financing

This chapter provides an analysis of the alignment of the OHEPEE Program's systems with the core principles of the Bank's Program for Results instrument.

Core Principle 1

Assessment of the degree to which the Program Systems promote environmental sustainability in the program design; avoid, minimize or mitigate against adverse impacts; and promote informed decision-making relating to a program's environmental effects.

- **Applicability:** One of the two result areas of OHEPEE is improving governance and management of higher education sector. One of the Key Performance Indicators (KPIs) under this is to improve quality of participating colleges measured by improved NAAC accreditation outcomes (grades B and above). Eligible activities under this program include construction of student hostels especially for women and ST/SC students and undertaking minor civil works.

  This core principle is applicable, as environmental management needs to be viewed as an important part of improving management and quality of higher education – especially with regard to the HEI infrastructure creation, operation and maintenance.

- **Strengths:** The program systems have existing provisions that contribute to environmental sustainability, manage adverse impacts and promote informed decision-making. There are existing laws, regulations, codes and guidelines that are adequate in their coverage of environmental aspects of educational infrastructure. The NAAC accreditation system for HEIs includes 'Environment Consciousness' as one of the criteria to grade the educational institution. The HED has stipulated 'Common Minimum Standards' for HEI infrastructure which includes environmental aspects such as sanitation

and hygiene maintenance. With regard to the construction activities under the Program, all the key construction agencies emphasize on regulatory compliance, environment-friendly design and construction practices.

- **Gaps/Risks:** Though the existing laws, regulations, codes and guidelines have adequate provisions to promote environmental sustainability, their implementation has not been uniform primarily due to a lack of awareness in the key stakeholders. There is hence scope for strengthening the implementation of these provisions through a multi-pronged strategy that includes capacity building and strengthening monitoring systems for ensuring environmental management in the construction, operation and maintenance of HEI buildings. The required measures have been identified and included in the Program Action Plan (as detailed in Chapter 8).

Core Principle 2

Assessment of the degree to which the Program Systems avoid, minimize, and mitigate against adverse impacts on natural habitats and physical cultural resources resulting from the program.

- **Applicability:** The OHEPEE program focuses on improving access, quality, governance and management in the higher education sector. Adverse impacts on natural habitats and physical cultural resources are unlikely – except in cases where any construction activity takes place in the proximity of natural habitats and physical cultural resource sites.
- **Strengths:** There are adequate legal and regulatory provisions to avoid, minimize and mitigate against impacts on natural habitats and physical cultural resources. These regulatory provisions have also been integrated into the Works Manuals of the construction agencies in the state.
- **Gaps/Risks:** Lack of awareness on existing regulations and weak monitoring of their compliance could result in adverse impacts on natural habitats and physical cultural resources. To strengthen the implementation of the existing provisions, capacity building of the construction agency staff and contractors has been recommended. For effective monitoring of these aspects, a checklist of pre-construction, construction and post construction phase has been prepared for the members of the building committee of HEIs. Also, undertaking new building construction or demolition in proximity of natural and cultural heritage sites has been excluded from the program (as detailed in Chapter 8).

Core Principle 3

Assessment of the degree to which the Program Systems protect public and worker safety against the potential risks associated with (a) construction and/or operations of facilities or other operational practices developed or promoted under the program; (b) exposure to toxic chemicals, hazardous wastes, and otherwise dangerous materials; and (c) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.

- **Applicability:** This is relevant to multiple activities envisaged in the program – new building construction; undertaking minor civil works; storage, usage and disposal of chemicals in laboratories.

- **Strengths:** There are adequate legal and regulatory provisions in place to protect public and worker safety during construction and undertaking minor civil works. These aspects are also included into the Works Manuals of the construction agencies.
- **Gaps/Risks:** There is a lack of awareness on existing laws and regulations, as well as weak monitoring of their compliance, which could result in adverse impacts on public and worker safety and health. Also, there is inconsistent integration of EHS aspects into the Bid/Contract Documents of the construction agencies. Measures to strengthen the implementation of existing provisions through a multi-pronged strategy that includes strengthening integration of EHS aspects in the bid documents, undertaking capacity building of key stakeholders, strengthening monitoring systems, etc., have been included in the Program Action Plan. Also, procurement of equipment/materials that pose high EHS risks (e.g., radioactive materials, asbestos containing materials, etc.) has been excluded from the Program (as detailed in Chapter 8).

2.5 Consultation and Disclosure

This section provides details on the consultation and disclosure processes relating to (a) conducting the ESA, and, (b) the Program activities.

2.5.1 Consultation during the ESA

During the ESA, multiple consultations were held at state, district and HEI levels. These were in the form of semi structured interviews and group discussions. The stakeholders included Higher Education Department (HED), Central Public Works Department (CPWD), Works Department (WD) Government of Odisha, State Pollution Control Board Odisha (SPCB), Odisha State Police Housing and Welfare Corporation Ltd. (OSPHWC), Rural Development Department (RDD), Odisha State Disaster Management Authority (OSDMA) and District offices of Works Department.

At the HEIs, consultations were held with the head of the institutions and with members of the building committee through semi structured interviews. Discussions with faculty members and students were held through Focus Group Discussions.

The assessment findings and recommendations presented in this document draw from these consultations.

2.5.2 Consultation on the Draft ESSA

A consultation workshop to share the preliminary findings of the ESA was organized on January 30, 2017 in the Khariar (Autonomous) College of Nuapada district. The participants at this workshop included the Principal Secretary, Higher Education Department, and representatives from Colleges, Universities and the World Bank. The list of participants is given in the Annexure 4.

A presentation on the initial findings of the ESA was first made and a discussion followed. The salient points from the discussion are presented below:

Comprehensive planning for environment management: The stakeholder agreed that environmental management is an important aspect of quality enhancement in educational institutions. They expressed their willingness to include it in their respective Institutional Development Plans. However, this being a new concept, guidance and capacity building will be required.

Environment consciousness is also part of the NAAC accreditation. Since most of the institutions participating in the workshop are either NAAC accredited or have applied for accreditation, they are already making efforts in this regard.

As the state has included Environment Studies in the curriculum of +2 and +3 study streams, colleges have a faculty or department for Environment Studies. This faculty or department can anchor the integration of environmental management into the IDP. A format/checklist to enable this, needs to be provided on the HED website for easy access by HEIs.

Monitoring of Environmental Aspects by HEI Building Committees: As per the UGC guidelines, colleges have building committees for planning and execution of infrastructural projects as per their requirements. The Assistant Engineer of Works Department is part of the BDC and provides technical inputs. However, the HEI staff and faculty who are part of the BDC also need to be familiar with basic technical aspects of the building design and construction, in order to effectively play their role in monitoring. It was recommended by HEIs that a concise guidance document based on the National Building Code (NBC) 2005 should be prepared and made available on the HED website for easy access to this information by all HEIs in the state.

Scope of Environmental Management by HEIs: Representatives from different educational institutions were aware of the 'Swach Bharat Mission' guidelines of the GoI and the necessity of their implementation within HEIs. However, they requested guidance on the scope of application – especially their extension to nearby communities. The scope for taking up action projects on environmental management in communities in the vicinity of the HEIs was discussed in this context.

2.5.3 Disclosure of the Draft and Final ESSA Reports

The draft ESSA report has been disclosed on the GoO/HED website and through Bank's website as part of the appraisal process. The final ESSA report (this document) will be disclosed after negotiations and prior to the Board approval.

3. Social Systems Assessment

3.1 Background

3.1.1 Introduction

As per the World Bank Policy on Program for Results Financing (July 2015), it is essential to undertake a comprehensive Social Systems Assessment (SSA), as a part of the preparation, to gauge the adequacy of social systems at national and state levels. The objective of SSA is to ensure consistency with the core principles outlined in the July 2015 policy and directive on Program-for-Results Financing in order to effectively manage program risks and promote sustainable development. These principles are:

- Promote environmental and social sustainability in the Program design - avoid, minimize, or mitigate adverse impacts, and promote informed decision making relating to the program's environmental and social impacts.
- Avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the program.
- Protect public and worker safety against the potential risks associated with construction and/or operations of facilities or other operational practices under the program; exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the program; and reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.
- Manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assists the affected people in improving, or at the minimum restoring, their livelihoods and living standards.
- Give due consideration to the cultural appropriateness of, and equitable access to, program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups.
- Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

3.1.2 SSA Objectives

The specific objectives with which the SSA was undertaken in the context of OHEPEE include the following is to:

- To undertake a Social Systems Assessment for the OHEPEE's first component that will be financed through the PforR instrument, as required by its policy and directive on Program for Results Financing (July 2015).
- Examine social management systems that are applicable to the Program in order to assess the extent to which the program systems promote social sustainability; consider issues related to indigenous peoples and vulnerable groups; and, avoid social conflict.

- Identify required actions for enhancing the program systems and mitigating social risks. Paragraph 8 of the Bank Policy (July 2015) on Program for Results Financing requires that the SSA considers to what degree the Program Systems: Promote social sustainability in the Program design; and/or, minimize, or mitigate adverse impacts, and promote informed decision-making relating to the Program's social impacts.
- Understand the cultural appropriateness of, and equitable access to program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups.
- Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

The SSA evaluates the compatibility of the Program's systems with the core principles on two basic levels: (i) the systems as defined by laws, regulations, procedures, etc. (the 'system as defined'); and (ii) the institutional capacity of implementation entities under the Program to effectively implement the system (the 'system as it is applied in practice'). It identifies and analyses the differences between the Program systems and the core principles that apply to the Program on the two levels indicated above.

3.1.3 Scope of Work

The proposed Project Development Objective (PDO) of the OHEPEE program is "Improving students' equitable access and quality in participating institutions with enhanced governance and management of higher education in Odisha". The focus on equitable access along with introduction of skill-enhancement courses proposed under the program will improve the participation of students from vulnerable and traditionally marginalized communities within the fold of tertiary education while enhancing employability of the cohort participating in 'general' higher education courses.

The SSA aligns itself with the priority areas of access and quality; access measured through increased enrollment of students (both girls and boys) from SC and ST communities and quality through a host of indicators including on-time graduation, enhanced employability, improved staff position especially in districts with high SC and ST population and a participative decision making process that involves various stakeholders. The SSA assesses institutions and systems through the lens of the principal beneficiary – the student. Adopting this approach enables identification of the decisive factors that promote or restrict 'Access', while also helping define what 'access' actually means for the primary beneficiaries under OHEPEE.

In terms of quality and governance related issues, the SSA acknowledges various positive initiatives undertaken by the Government of Odisha aimed towards attracting and retaining students to higher education, especially those from vulnerable backgrounds. The mechanisms HEIs have in place towards addressing concerns and grievances, functionality of such mechanisms, existing gaps if any and potential risks are also covered under the SSA.

In line with the Operational Manual prepared under OHEPEE for participating HEIs, the SSA evaluates the higher education sector in Odisha by demarcating between the fourteen districts of the states which have a high proportion of SC and ST population and are the

erstwhile KBK districts which receive special support from the centre and the state of Odisha as Category A- vis-à-vis other districts.

Rationale for the approach: Individuals and groups are excluded or included based on their identity. Among the most common group identities resulting in exclusion are gender, race, caste, ethnicity, religion, and disability status[28]. Social exclusion based on such group attributes can lead to lower social standing, often accompanied by lower outcomes in terms of income, human capital endowments, access to employment and services, and voice in both national and local decision making. Gaps between the attainment of males and females in a range of outcomes are well documented. People of African descent are still excluded in a variety of cultures. The caste system, peculiar to India and Nepal, stands out as an "ideal type" of exclusion, complete with an ideology and a hierarchy that has persisted through millennia. Religion continues to be a serious driver of exclusion.

Implementation: Categorizing districts in line with the Operations Manual brings out disparities with respect to enrolment (both in percentage terms and district-level GER) of students from vulnerable backgrounds. This also helps in establishing the differential circumstances faced by SC and ST students and advocates the need for targeted intervention towards SC, ST students, especially ST girls to promote equitable access under higher education.

The SSA focus on the following indicators to address the intersectionality of barriers faced by students belonging to vulnerable communities. These indicators were analysed using quantitative and qualitative methods to understand the demand and supply patterns related to higher education within the state of Odisha.

- Enrolment and retention of boys and girls belonging to disadvantaged communities
- Factors that prevent transition from secondary schools to higher education institutes, especially in districts with high SC and ST population.
- Aspirations of students belonging to disadvantaged groups vis-à-vis gaps in information availability, access to higher education and institution gaps at the college-level.
- Implicit and explicit barriers faced by both girls and boys from tribal and non-tribal districts
- Parental consent and attitude towards HEIs; gender disaggregated

3.1.4 Approach and Methodology

The SSA draws on both secondary and primary information. While the former is essentially desk based review of relevant data and documents, primary information was generated through visits to colleges, universities and relevant government institutions. The main focus during field visits was to;

- Review the adequacy of the social policies and procedures to understand whether an enabling policy and legal framework to promote decentralized administration, implementation and monitoring, active participation and safeguarding the interests of

[28] Inclusion Matters: The World Bank (2011)

vulnerable sections (women, scheduled caste and scheduled tribe communities) is present.

- Understand the comprehensive outline of systems for social management in Odisha that are applicable to the Odisha Higher Education Project at the program level. This includes the legal and regulatory frameworks, institutional roles and responsibilities, and gap analyses between these and the Bank's Policy and Directive on the Program for Results instrument (July 2015).
- Review the structure available at the state-level and corresponding units such as the Program Monitoring Unit for planning, monitoring, and implementation of OHEPEE across districts and identify staff gaps in social expertise if any.
- Understand Procedures and Processes for Capacity of the key functionaries responsible for implementing OHEPEE need to have an overall perspective on social aspects related to higher education in Odisha.
- This involved consultations with the following key stakeholders: Intense consultations with teachers and staff in relation to students from disadvantaged background

The list of institutions and stakeholders covered in the study has been tabulated in Table 7:

Table 7: List of institutions and stakeholders covered in the study

Level	Institution	Key Stakeholders Consulted	No of stakeholders met	Methodology
State level	Higher Education Department (HED)	Additional Director Higher Education	1	Semi-structured Interview
		Regional Director Higher Education	1	Semi-structured Interview
District level	Higher Education Department (HED)	District Higher education consultant (DLC)	6	Semi-structured Interview
HEI Level	University level	Vice Chancellor	2	Semi-structured Interviews
		Syndicate Members	3	Semi-structured Interviews
		Dean/Registrar	1	Semi-structured Interviews
		Faculty Members	22 (32% Female members)	Focus Group Discussion

Level	Institution	Key Stakeholders Consulted	No of stakeholders met	Methodology
		Students	57	Focus Group Discussion
	College level	Principal	18	Semi-structured Interviews
		Members of the institutional governing body	32	Semi-structured Interviews
		Faculty members	295 (23% Females)	Focus Group Discussion
		Students	476	Focus Group Discussion
		Parents	113	Focus Group Discussion

- Carry out field reviews, and consultations with all key stakeholders, community meetings, feedback in order to identify the barriers that prevent enrolment and completion of tribal students in HEIs.

The Action Plan was developed on the basis of data trends, intense discussions with faculty, students – girls and boys, admin staff, parents and other various stakeholders. The Analysis builds on the baseline data collected and presents n scrutiny of these systems vis-à-vis the core principles of the Bank's Policy and Directive on the Program for Results instrument (July 2015). It employs an approach of Strengths-Weaknesses-Opportunities-Threats in order to examine the policy and performance gaps and formulate actions. The Action Plan outlines measures agreed between the Government and Bank to strengthen social management systems and fill the gaps. These actions will then be embedded in the overall Program Action Plan found in the Program Appraisal Document (PAD.0

Desk Review

The desk review focused on understanding the existing policy, legal and regulatory provisions, operational procedures, institutional capacity, and implementation effectiveness relevant to the activities under the Program. The list of documents reviewed is provided in Annexure 2 A.

The desk review also includes a quantitative analysis with a view to capture existing inter-district disparities.

Field Study

The SSA draws information from extensive consultations with several stakeholders from Government Departments and HEIs. The Government Department covered in the field study was Higher Education Department.

The HEIs covered in the field study include 2 Universities and 18 Colleges. From the list of 126 colleges (eligible for the OHEPEE Project), a representative sample of 18 colleges (approximately 15%) and 2 Universities were selected. The key criteria used for the selecting the colleges and the weightage of each criterion are as follows:

- Type of colleges
    i. Colleges that received block grants - 40%
    ii. Aided colleges – 40%
    iii. Government colleges – 20%
- Tribal area
    i. College in tribal district – 56%
    ii. College in non-tribal district – 44%
- Forest area
    i. College in districts with significant forest cover – 56%
    ii. College in districts without significant forest cover – 44%
- Coastal area
    i. Colleges in coastal area – 44%
    ii. Colleges in non-coastal areas – 56%

The list of 18 colleges and 2 universities covered under the study is given as Annexure 3.

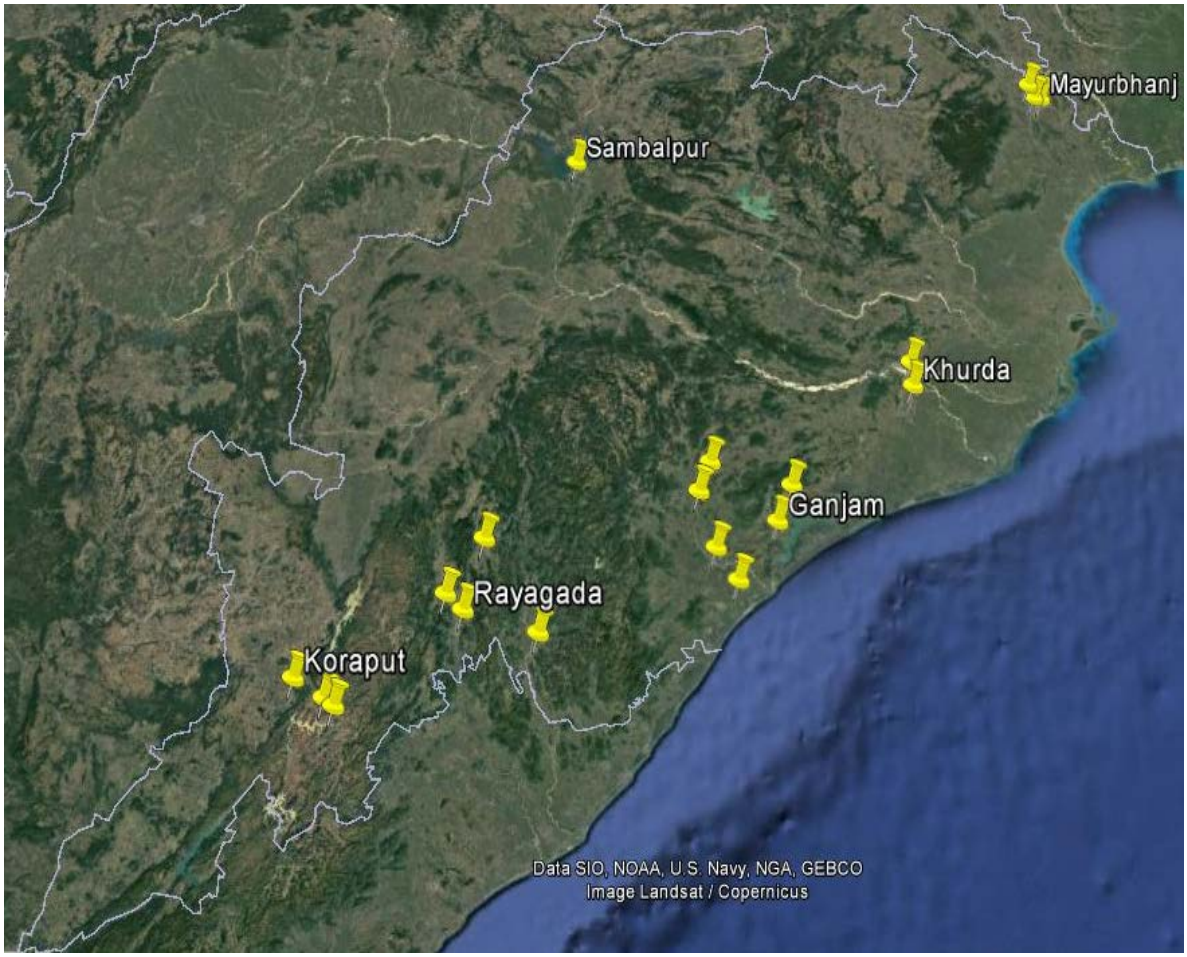


Figure 3: Location of HEIs visited for SSA

3.1.5 Consultations and Disclosure

In addition to the consultations during the course of the field study (covered under the section 2.4.2), formal consultation workshops were organized at two stages during the SSA.

Consultation Workshop on Preliminary Findings of SSA

A consultation workshop on the preliminary findings of the SSA was organized on Jan 30, 2017 in Khariar (Autonomous) College, Khariar in Nuapada district. The key stakeholder groups represented at the workshop were: participating colleges, participating universities, representatives of the HED, and, the Bank team. The workshop was chaired by the Principal Secretary, HED, Government of Odisha. The list of stakeholders who participated in the workshop is given in the Annexure 4. A presentation based on the initial findings of SSA in eight colleges and one university was made. The key observations on social management status and issues concerning HEIs were shared.

Consultation Workshop on Draft SSA

The draft report of this SSA was disclosed through a State level stakeholder workshop organized in April 2017. The draft report will be finalized after incorporating relevant suggestions from the stakeholder workshops.

Disclosure

The draft report of the SSA has been disclosed on the website of the Higher Education Department, Government of Odisha and on the World Bank's website prior to the conclusion of Appraisal. The final report will also be disclosed on the website of the Higher Education Department, Government of Odisha and on the World Bank's website after negotiations and prior to the Board approval.

3.2 Institutional Assessment

This section provides details of the existing institutional setup at the national and state levels as well as an assessment of the social management capacity of the present system.

3.2.1 National Level Institutions

Institutions at national level have been mapped keeping in view the key result areas and activities to be undertaken under the OHEPEE. The brief about these institutions is as given below;

Ministry of Human Resource Development (MHRD): The main objectives of the Ministry of Human Resource Development (MHRD), Government of India include formulation and implementation of the National Policy on Education, bringing planned development including expanding access and improving quality of the educational institutions throughout the country, paying special attention to disadvantaged groups like the poor, females and the minorities. The Higher Education Department under the MHRD is responsible for the overall development of the basic infrastructure of the Higher Education sector, both in terms of policy and planning. Under a planned development process, the Department looks after expansion of access and qualitative improvement in the Higher Education, through world class Universities, Colleges and other Institutions.

- **Access:** SWAYAM (a free MOOCS platform), implementation of RUSA, Scholarship Scheme for Students of North East Region
- **Equity: Excellence:** Committees to review regulators (UGC, AICTE), GIAN International Faculty Collaboration, Portals like Know Your College, Madan Mohan Malviya Teacher Training Program

The MHRD conducts an annual web-based All India Survey on Higher Education (AISHE). The survey covers all the HEIs in the country and data is being collected on several parameters such as teachers, student enrolment, programs, examination results etc. Indicators of educational development such as Institution Density, Gross Enrolment Ratio, Pupil-teacher ratio, Gender Parity Index etc. are calculated from the data. The survey is intended to help MHRD in making informed policy decisions for development of the higher education sector.

MHRD in 2012 constituted a Standing Committee for preparing a report on 'Recommendations on the Guidelines for Implementation of Programs and Schemes under Scheduled Castes Sub Plan and Tribal Sub Plan in the Ministry of Human Resource

Development[29]'. This committee had beneficiary focus and recommended that only those schemes/components or programs (and outlays) would qualify to be included under SCSP and TSP which have the potential to bridge the gaps in educational development of SC and ST categories and to promote equity among them.

For school education, it recommended that a specific training module should be developed regarding the RTE Act equity and inclusion provisions which will then be translated into all the official state languages. Using this module, orientation trainings should be given to all Scheduled Castes and Scheduled Tribes members of School Management Committee (SMC) on their roles in the SMCs and the RTE Act equity and inclusion provisions applicable to Scheduled Caste and Scheduled Tribe children. More elementary schools should be opened giving preference to areas with high population of Scheduled Castes and Scheduled Tribes or low literacy levels for Scheduled Caste and Scheduled Tribe girls.

Rashtriya Madhyamik Shiksha Abhiyan for secondary education too has number of equity elements, namely: (i) special focus in micro-planning, addressing the needs of every child, especially for interventions for Scheduled Caste and Scheduled Tribe students; (ii) preference to Ashram schools in upgradation; (iii) preference to areas with concentration of Scheduled Caste/Scheduled Tribe/Minorities for opening of new schools; (iv) special enrolment drive for the weaker sections (including Scheduled Castes and Scheduled Tribes); (v) more female teachers in schools; and (vi) separate toilet blocks for girls. The RMSA guidelines go as far as to suggest some equity strategies such as: free lodging/boarding facilities for students belonging to Scheduled Castes, Scheduled Tribes, Other Backward Classes and minority communities; hostels/residential schools; cash incentives, uniforms and books; providing scholarships to meritorious/needy students at the secondary level.

For Higher education, committee found that though The University Grants Commission had 13 Schemes/Programs under three major categories—Enhancing Aggregate access, Equity and Quality Excellence but it did not spell out the actual procedure used to identify the beneficiaries. So the committee drafted general guidelines for implementation of SCSP and TSP in Higher Education Sector. Some of the key points are as following;

- In case of scholarships, many students from Scheduled Castes and Scheduled Tribes may be excluded due to limited number of scholarships, and therefore additional provisions over and above 16 per cent for Scheduled Castes and eight per cent or Scheduled Tribes could be made.
- In case of interest subsidy schemes, additional relaxation could be given to Scheduled Castes and Scheduled Tribes students, which could be financed from SCSP and TSP.
- The Ministry of Human Resource Development may develop schemes for promoting positive non-discriminatory best practices and other measures for implementation through Equal Opportunity Office.
- Following additional schemes were proposed which are to be directly managed by MHRD
    - **Overseas Scholarships:** The overseas scholarship scheme for Scheduled Castes and Scheduled Tribes candidates for getting education abroad. There shall be no condition of annual family income ceiling for Scheduled Castes and Scheduled Tribes students proceeding on overseas studies under this scheme. The amount

[29] Source: http://mhrd.gov.in/sites/upload_files/mhrd/files/document-reports/SCSP-TSPReport_1.pdf

provided under the overseas scholarship scheme should be revised to cover the entire cost including all fees and other mandatory payments, all maintenance expense and travel costs.

- **Women's Hostels, Libraries—Increase in Number and Facilities:** The number of hostels for women's colleges and universities should be increased. Each district should have independent women's hostels for Scheduled Castes and Scheduled Tribes.
- **Hostels in Metros:** Special hostel complexes need to be built using SCSP and TSP funds in all metro and major cities for Scheduled Castes, Scheduled Tribes and students from other marginalized groups who want to benefit from the educational services located in cities. Fifty per cent of such hostel capacities must be reserved for Scheduled Castes and Scheduled Tribes women.

Besides this, to overcome the general problems faced by the Scheduled Castes and Scheduled Tribes students following schemes were suggested;

- Strong personalized support for improving fluency in English, knowledge related to the subject, and improvement in basic subjects.
- The proctorial system can contemplate provision of interactive classes in English language, in some subjects where the students need support in personalized manner, and support in developing social skills and confidence building will improve their academic performance, reduce failure rate, dropout rate and improve success rate.
- Hostel facilities with tuition and other fee waiver, supply of books, equipment, and computers through funds from SCSP and TSP should help them to improve their performance.
- The teachers belonging to Scheduled Castes and Scheduled Tribes community need to be empowered by providing them grants to do research, attend conferences, get additional capacity development and training in pedagogy and subject matter.
- Similar facilities for capacity enhancement should be developed for non-teaching staff belonging to Scheduled Castes and Scheduled Tribes.
- The funds for all these schemes should come from the SCSP and TSP.
- Laptop shall be provided to all Scheduled Castes and Scheduled Tribes students subject to a limit of Rs. 40,000 on the basis of their need with the expenditure ratio of 90 per cent from the SCSP grant and 10 per cent by the candidate (to ensure genuine requirement). In addition, Internet access facility using data cards can be extended to all such students subject to a limit of Rs. 300 per student per month during the course of studies[30].
- The allowance of undergraduate students can be increased to Rs 1,500 per month if their parental income is less than Rs 7.5 lakhs per annum.
- Hundred per cent fee waiver for all courses including self-financed courses in all centrally funded educational institutions.
- Adequate provision should be considered for extra training programs for imparting proficiency in communication skills, general awareness, leadership and also preparing for GATE, CAT and on-campus placements.

[30] The Government of Odisha already has a program of laptop distribution for meritorious students where 100% cost is borne by the govt. Increase in allowance to students will be considered based on long term financial viability. Fee waiver exists for differently abled students and students without parents

- Special focus needs to be given to women who belong to Scheduled Castes and Scheduled Tribes communities in higher education and the implementation strategy must focus on covering all women.

University Grants Commission (UGC): The UGC is a statutory organization responsible for the coordination, determination and maintenance of standards of university education. It functions from New Delhi as well as its six Regional Offices located in Bangalore, Bhopal, Guwahati, Hyderabad, Kolkata and Pune. The UGC's mandate includes:

7. Promoting and coordinating university education.
8. Determining and maintaining standards of teaching, examination and research in universities.
9. Framing regulations on minimum standards of education.
10. Monitoring developments in the field of collegiate and university education; disbursing grants to the universities and colleges.
11. Serving as a vital link between the Union and state governments and institutions of higher learning.
12. Advising the Central and State governments on the measures necessary for improvement of university education.

The University Grants Commission (UGC) provides financial assistance to eligible colleges which are included under Section 2(f) and declared fit to receive central assistance (UGC Grant) under Section 12 (B) of UGC Act, 1956 as per approved pattern of assistance under various schemes.

National Assessment and Accreditation Council (NAAC): NAAC, an autonomous body, has been established by the UGC in 1994. The main objective of NAAC is to make quality the defining element of higher education in India through a combination of self and external quality evaluation, promotion and sustenance initiatives. With the mission to encourage self-evaluation, accountability, autonomy and innovations in higher education, NAAC primarily assesses the quality of HEIs that volunteer for the process, through an internationally accepted methodology. Details on the NAAC Assessment and Accreditation Program are provided in section 3.1.1.

Ministry of Social Justice & Empowerment (SJ&E): The erstwhile Ministry of Welfare was bifurcated in 1985-86 to form a separate Department of Women and Child Development. Subsequently, the name of the Ministry was changed to the Ministry of Social Justice & Empowerment in May, 1998. In October, 1999, the Tribal Development Division moved out from it to form a separate Ministry of Tribal Affairs. In January, 2007, the Minorities Division also shifted away from it and was formed as a separate Ministry. One of the objectives of the ministry is the educational and economic development along with the social empowerment of Scheduled Castes, Other Backward Classes (OBCs), Denotified and Nomadic Tribes (DNTs).

Ministry of Tribal Affairs: The Ministry was set up in 1999 after the bifurcation of Ministry of Social Justice and Empowerment with the objective of providing more focused approach on the integrated socio-economic development of the Scheduled Tribes (STs), the most underprivileged of the Indian Society, in a coordinated and planned manner. Tribal Development is an important segment of inclusive Policy of Government of India. Socio-Economic development of Tribals of the country seeks to achieve increased equity and better

standard of living for the Tribals of the country i.e. to facilitate the reduction and removal of the gap in the socio-economic condition.

The Ministry of Tribal Affairs (MoTA) is the nodal ministry for the overall policy, planning and coordination of programs for development of Scheduled Tribes, though constitutional mandates, well defined strategy and sectoral programs and schemes pertaining to development of these communities, as also through coordinating the development efforts of the line Ministries. The Government has been implementing Tribal Sub Plan (TSP) as a part of its obligation to implement the directive principles of State policy enshrined in the Constitution of India. The Tribal Sub Plan is mainly an area development plan. Scheduled areas of heavy tribal concentration were formed into special development blocks (ITDAs). Tribal Sub Plan was formulated for these areas every year with a view to have full control and separate accounting of the investments made by all departments mainly on the infrastructure development programs. Later on the plan objectives were shifted to the family welfare programs under which the expenditure incurred on the individual beneficiary schemes implemented for tribals outside the Scheduled Areas was also included in the Tribal Sub Plan. Thus, the expenditure incurred on the development schemes implemented for the tribals in the Scheduled Areas as also outside the Scheduled Areas formed part of Tribal Sub Plan.

Government (vide G.O.Ms.No.261, Finance and Planning (F.W.B.G.) Department, dated 26-09-1986) issued orders laying down a three-step approach for implementation of Tribal Sub Plan. Government have also issued instructions to all Head of Departments (vide D.O.Lr.No.2311/D1/82-1, Social Welfare (TW) Department, dated 14-10-1982) to earmark certain percentage of their Plan allocation towards Tribal Sub Plan. The Special Central Assistance (SCA) is provided by the Ministry of tribal Affairs to the State Government as an additive to the State TSP. SCA is primarily meant for family-oriented income-generation schemes in sectors of agriculture, horticulture sericulture and animal husbandry cooperation. A part of SCA (not more than 30%) is also permitted to be used for development of infrastructure incidental to such income generating schemes.

The Education Division of the Ministry of Tribal Affairs makes all efforts to supplement the efforts of the Ministry of Human Resources Development, which is the line Ministry, and the State Governments/UT Administrations by administering various schemes with the objective of enhancing access to education.

National Commission on Schedule Tribes: As per the Constitution (Eighty-ninth Amendment) Act, 2003, the National Commission for Scheduled Tribes has been set up under Article 338A of the constitution on bifurcation of erstwhile National Commission for Scheduled Castes and Scheduled Tribes to oversee the implementation of various safeguards provided to Scheduled Tribes under the Constitution. The Commission comprises a Chairperson, a Vice-Chairperson and three full-time Members (including one lady Member). The term of all the Members of the Commission is three years from the date of assumption of charge. Following are the duties of the Commission

a) To investigate and monitor all matters relating to the safeguards provided for the Scheduled Tribes under this Constitution or under any order of the Government and to evaluate the working of such safeguards;
b) To inquire into specific complaints with respect to the deprivation of rights and safeguards of the Scheduled tribes;

c) To participate and advise on the planning process of socio-economic development of the Scheduled Tribes and to evaluate the progress of their development under the Union and any State;
d) To present to the President, annually and at such other times as the Commission may deem fit, reports upon the working of those safeguards;
e) To make in such reports recommendations as to the measures that should be taken by the Union or any State for the effective implementation of those safeguards and other measures for the protection, welfare and socio-economic development of the Scheduled tribes; and
f) To discharge such other functions insulation to the protection, welfare and development and advancement of the Scheduled tribes as the President may, subject to the provisions of any law made by Parliament by rule specify.

The Commission shall, while investigating any matter or inquiring into any complaint have all the powers of a civil court trying a suit and in particular in respect of the following manners namely:- (a) summoning and enforcing the attendance of any person from any part of India and examining him on oath; (b) requiring the discovery and production of any document; (c) receiving evidence on affidavits; (d) requisitioning any public record or copy thereof from any court or office; (e) issuing commissions for the examination of witnesses and documents; (f) any other matter which the President may, by rule, determine. (9) The Union and every State Government shall consult the Commission on all major policy matters affecting Scheduled Tribes.

Department of Empowerment of Persons with Disabilities (PwDs) (Divyangjan): The erstwhile Department of Disability Affairs (Nishaktata Karya Vibhag) under the Ministry of Social Justice and Empowerment, Government of India was renamed as Department of Empowerment of Persons with Disabilities (Viklangjan Sashaktikaran Vibhag) in December 2014. Government of India runs seven National Institutes (NIs) dealing with various types on disabilities and seven Composite Regional Centres (CRCs), which provide rehabilitation services to PwDs and run courses for rehabilitation professional but also funds a large number of NGOs for similar services and also a National Handicapped Finance & Development Corporation (NHFDC) which provides loans at concessional rates of interest to PwDs for self-employment.

Office of The Chief Commissioner for Persons with Disabilities (CCPD): This has been set up under Section 57 of the Persons with Disabilities (Equal Opportunities, Protection of Rights & Full Participation) Act, 1995 in the Ministry of Social Justice and Empowerment, Government of India. The office has been mandated to take steps to safeguard the rights of persons with disabilities.

Indian Council of Social Science Research (ICSSR): The Indian Council of Social Science Research (ICSSR) was established in 1969 for promoting social science research, strengthening different disciplines, improving quality and quantum of research and its utilization in national policy formulation. ICSSR envisage development of institutional infrastructure, identifying research talents, formulate research programs, support professional organizations and establish linkages with social scientists in other countries.

Relevant National Programs

Rashtriya Uchchatar Shiksha Abhiyan (RUSA) is a centrally sponsored scheme, launched in 2013 aiming at providing strategic funding to eligible state HEIs. The central funding is norm based and outcome dependent. The funding flows from the central ministry through the state governments/union territories to the State Higher Education Councils before reaching the identified HEIs. The funding to states is made on the basis of critical appraisal of State Higher Education Plans, which describe each state's strategy to address issues of equity, access and excellence in higher education. The key action and funding areas under RUSA are: Up gradation of existing autonomous colleges to Universities; Conversion of colleges to Cluster Universities; Infrastructure grants to Universities; New Model Colleges (General); Up gradation of existing degree colleges to model colleges; New Colleges (Professional); Infrastructure grants to colleges; Research, innovation and quality improvement; Equity initiatives; Faculty Recruitment Support; Faculty improvements; Vocationalisation of Higher Education; Leadership Development of Educational Administrators; Institutional restructuring & reforms; Capacity building & preparation, data collection & planning.

Exhibit: Components in RUSA for equity based development

Equity Based Development under RUSA

The XI as well as the XII Plan has laid emphasis on improving access, equity and Excellence. Equity promotes inclusive development envisaged in the XII plan and it includes improving women's access to higher education. Under RUSA, central funding is provided from MHRD to institutions through the state budget. This funding to states is made on the basis of critical appraisal of State Higher Education Plans (SHEPs). The plans would describe each state's strategy to address issues of equity, access and excellence in higher education.

One of the goals of RUSA is to improve equity in higher education by providing adequate opportunities of higher education to SC/STs and socially and educationally backward classes; promote inclusion of women, minorities, and differently-abled persons. The following components have been included into RUSA to address the equity issues in a more holistic and integrated manner;

- Girls hostels and girls toilets
- New hostels wherein 50% of capacity would be used for SC/ST and socially and educationally backward classes
- Converting existing buildings into fully disabled friendly environments (e.g. providing ramps, tactile pathways)
- Special facilities / equipment's for the disabled (e.g computers, lab equipments)
- Model Colleges in each district
- Special innovative programmes for focus groups and ODL (Open and Distance Learning) strategies

Besides creating equal opportunities for women, disadvantaged classes and the differently-abled, development must have a greater focus on serving the rural and tribal areas. The cornerstone around which RUSA is designed is that the states and state institutions will be funded on the basis of their performance against mutually agreed targets to between the states and the center. The funds given to a state will be linked with the outcomes it can achieve in the higher education sector. These results and parameters of performance will be defined through norms that will focus on key areas of equity, access and excellence.

Equity has been included as 'Prerequisite' for states and institutions for getting the funds. Equity index is one of the indicators for performance assessment of states and institutions. For state, Equity Index has 22.5% weightage, further distributed under following sub-indicators;

Sub-indicator under Equity Index	Weightage
SC GER	3%
ST GER	3%
OBC GER	3%
GER for Females	4.50%
% of districts below GER National average	3%
% of students from rural backgrounds (defi ne rural) in the higher education system	3%
% of institutions "diff erentlyabled friendly	1.50%
Existence of Equal Opportunities Commission	1.50%

For institutions, Equity Initiative Index has 12.5% weightage, further distributed under following sub-indicators;

Sub-indicator under Equity Index	Weightage
SC GER	3.0%
ST GER	3.0%
Gender Parity	3.0%
Urban to Rural Student population	2.0%
Existence of CASH	0.5%
Existence of Social Protection Cell	0.5%
Language assistance programs for weak students	0.5%

Source: http://mhrd.gov.in/rusa

In September 2015, MHRD released the first and second instalment of Rs. 610 million as infrastructural grants to in-total 8 Universities and 93 Colleges under RUSA[31]. Thus the average grant to each HEI covered under RUSA is 6.039 million

Schemes by University Grants Commission's

- **General Development Assistance to Colleges:** UGC provides this grant to the colleges for strengthening basic infrastructure and for meeting basic needs like campus development, books & journals, scientific equipment, teaching aids and sports facilities. Extension/ renovation of existing buildings and construction of new buildings can also be taken up with this grant. The XII Plan General Development Assistance (GDA) is provided in the form of Plan Block Grant (PBG) to colleges meeting specified criteria. The college is to identify its needs, decide on its priorities and finalize the budget. A Building Committee constituted by the college will be responsible for the execution of the project in accordance with the Guidelines for the Construction of Buildings (XII Plan) and in adherence to the rules of the State Government.
- **Scheme of construction of Women's Hostels:** During the XII Plan period (2012-2017) the UGC approved/ sanctioned a total of 335 women hostels in Minority Concentrated Districts (MCDs). Only the Gajapati district in Odisha is listed as a Minority Concentration Districts (MCDs).
- **Schemes for Educational Development of Persons with Disability:** UGC has issued instructions to all the universities and colleges for providing 3% reservation in admissions for PwD students. The HED, MHRD had issued instructions (vide letter, dated 10.7.2014), to all the centrally funded HEIs for implementation of the provisions of the PwD Act like providing barrier free environment in the buildings, which would include provision of ramps, rails, lifts, adaptation of toilets for wheelchair users, Braile signage and auditory signals, tactile flooring, etc.
- **Assistance for the establishment of Equal Opportunity Cells**: To make colleges and universities more responsive to the needs and constraints of the disadvantaged social groups, the UGC has initiated a scheme viz. Establishment of Equal Opportunity Cell in Colleges and Universities to oversee the effective implementation of policies and programs for disadvantaged groups and to provide guidance and counselling in academic, financial, social and other matters. The cell also takes up programs of sensitizing university/college community on problems faced by SC&ST category in higher education. Under the scheme, coaching for SC/ST/OBC (Non creamy layer), women/minorities and persons with disabilities is undertaken to enhance their employability.
- **Schemes for Educational Development of Persons with Disability:** UGC runs three schemes - Higher Education for Persons with Special Needs (HEPSN), Teacher Preparation in Special Education (TEPSE) and Financial Assistance to Visually-handicapped Teachers – for PwDs. UGC has issued instructions to all the universities and colleges for providing 3% reservation (horizontally) in admissions for PwD students and also ensuring supportive infrastructure like providing barrier free environment in the buildings which includes provision of ramps, rails, lifts, adaptation of toilets for wheelchair users, brail signages and auditory signals, tactile flooring etc .

[31] http://mhrd.gov.in/sites/upload_files/mhrd/files/grant-in-Aid/HE/FY-2015-16/Sept_2015/Sanction208.pdf

- **Schemes for establishing Regional Centre for Capacity Building (RCCB) & Human Resource Development Centre (HRDC):** UGC has developed the guidelines for establishing RCCB and HRDC in universities. It provides 100 per cent financial assistance to the universities for this.
- **Schemes for establishing University-Industry Inter-Linkage Centres in Universities:** UGC has developed the guidelines for establishing UIL Centres in recognized universities having atleast NAAC 'B' Grade. The UGC's contribution shall be within an overall ceiling of Rs. 20 million.
- **Schemes for establishing Centre for fostering social responsibility and community engagement in universities:** This scheme promotes community engagement in higher education institutions. The main objectives of the scheme include promoting community-university partnerships to develop knowledge for improving the lives of the people and to encourage participatory research, and to in alliance with community based organizations in planning and execution of projects. It seeks to propagate integration of service, service-learning and experiential learning into curricular/co-curricular programs. It also aims at creating neighbourhood networks of educational institutions including schools and providing policy suggestions and technical assistance to help foster community engagement and social responsibility in higher education. UGC provides financial assistance within overall ceiling of Rs. 25 million for a period of 3 years.

Schemes of Ministry of Tribal Affairs, GOI

- **Post Matric Scholarship for Scheduled Castes:** The objective of the scheme is to provide financial assistance to Scheduled Caste and Scheduled Tribes students studying at post matriculation or post-secondary stage to enable them to complete their education. It exists for all students with parental income up to 2.5 lakh p.a.
- **Babu Jagjivan Ram Chhatrawas Yojana**: The objective of the Scheme is to provide hostel facilities to SC Boys and Girls studying in middle schools, higher secondary schools, colleges and Universities
- **Rajiv Gandhi National Fellowships for Higher Education for the Scheduled Castes:** The scheme provides financial assistance to Scheduled Caste students for pursuing research studies leading to M.Phil, Ph.D and equivalent research degree in universities, research institutions and scientific institutions.
- **National Overseas Scholarship:** National Overseas Scholarship is meant to provide assistance to selected Scheduled Caste, Denotified and nomadic tribes, landless agricultural labourers and traditional artisan students for pursuing higher studies of Master level courses and Ph.D programs abroad in specified field of study.

National Handicapped Finance and Development Corporation (NHFDC), Faridabad: The National Handicapped Finance and Development Corporation (NHFDC) is a wholly owned company by Government of India. NHFDC functions as an Apex institution for extending financial support for education, employment and entrepreneurship of the persons with disabilities through the State Channelizing Agencies (SCAs) nominated by the State Government(s). Prominent schemes being implemented by NHFDC are given below in brief:

- Financial Assistance in the form of Education Loan Education loan is given for pursuing higher education in India and abroad. All courses having employment prospects i.e.

Graduation courses/ Post graduation courses/Professional courses and other courses approved by UGC/Government/AICTE etc. are eligible. Maximum amount of loan is Rs. 1.0 million for courses within India and Rs.2.0 million for courses abroad. The rate of interest is 4% per annum, a rebate of 0.5% on interest is allowed to women beneficiaries. The repayment would commence one year after completion of course or 6 months after securing a job, whichever is earlier. The maximum repayment period is 7 years after commencement of repayment.

- Scholarship Scheme from Trust Fund Under this scheme financial assistance is given to students with disabilities to pursue degree and/or post graduate level technical and professional courses from a recognized institution. Maintenance allowance, book/stationary allowance and grant for purchase of assistive devices are credited to the student's account. Non-refundable fees are reimbursed to the student on production of proof of deposit of fees or are paid directly to the Institute under intimation to the student. There is provision of 2500 scholarships every year.
- Scholarship Scheme from National Fund Under this scheme financial assistance is given to students with disabilities to pursue technical and professional courses from a recognized institution. There is provision of 500 scholarships every year. The rate of scholarship is Rs.1000/-p.m. for hostellers and Rs.700/- p.m. for day scholars studying in professional courses at graduation and above level, and Rs.700/- p.m. for hostellers and Rs.400/- p.m. for day scholars pursuing Diploma /certificate level professional. Course fee is reimbursed up to ceiling of Rs.10,000/- per year. In addition, financial assistance can be given for computer with editing software for blind/deaf graduate and post graduate students pursuing professional courses and for support access software for cerebral palsy students.

National e-Scholarships Portal: Government of India started one-stop solution through which various services starting from student application, application receipt, processing, sanction and disbursal of various scholarships to Students are enabled.

3.2.2 State level Institutions

Higher Education Department (HED): The HED looks after education at university, post-graduate, graduate and higher secondary levels including vocational and professional education.

The State has 11 public and 4 private universities, 94 Government Colleges, 787 aided colleges, 50 aided Sanskrit colleges, 643 Block Grant, 571 Non-Government, 287 Self Financing and 14 Other Department Colleges. The Government Colleges include 34 Junior Colleges, 10 Degree Colleges, 16 Autonomous Colleges, 3 Sanskrit Colleges and one Composite College.

State Government has taken many initiatives to promote Higher Education in the state. Few of the key initiatives of the department most relevant to the social systems under the OHEPEE include:

- **Quality assurance**: A State Quality Assurance Cell (SQAC) has been set up in the HED to sensitize the HEIs to seek NAAC accreditation and monitor their activities in the post-accreditation period. Mandatory accreditation has been enforced by the

department. As per the 'Activities Report 2015-16' by the Higher Education Department, 6 Universities and 210 Colleges have undergone accreditation in the state.

- **Choice Based Credit System (CBCS)**: CBCS have been introduced in all the 32 Autonomous Colleges and all Universities of the State. Government has integrated ten vocational subjects in degree curriculum of Arts, Science and Commerce with a vision to enhance the existing employability skills of students as per NSQF guidelines.
- **Equity related:** Government in 2015 increased the percentage of reservation for SC and ST category in education sector from 8% to 16.25% and 12% to 22.50% respectively and this was implemented from 2015-16 academic session. For Higher Education, Government has started implementation of interest subvention of 4% and 6% for boys and girls for educational loans which have been approved by Govt.
- **e-Governance:** *e-Admission* has been introduced by means of Student Academic Management System to bring better transparency, error free admission to the students in an economical mode. *e-Despatch* has been introduced for channelizing the letters for communication with an intention of economical mode, less time consuming ,immediate response as well as lead to eco-friendly environment. *e-Scholarships* for awarding different types of scholarships to students pursuing higher studies. This initiative makes the process easy due to the provision of on-line submission of application /selection/renewal and disbursement.
- **Guidelines for improvement of quality of education:** HED also prescribes the 'Common Minimum Standard Guidelines' which includes different aspects for enhancing the quality of higher education like ensuring common academic calendar, conducting departmental seminars, ensuring constitution of internal Quality Assurance Cell, equal opportunity cell etc and updation of data through on-line SIP, CIP and CMS formats.
- **Setting up Model Degree Colleges under RUSA:** The Higher Education Department has established 8 model degree colleges in Educationally Backward Districts which are Boudh, Deogarh, Malkangiri, Nawarangpur, Nayagda, Nuapada, Rayagada and Sonepur. These have been established under RUSA project of MHRD and are under construction. Additionally three colleges, one each in Puri, Balasore and Sundargarh, have been up-graded to Model Degree Colleges under RUSA.
- **Community Colleges:** UGC assisted Community Colleges have been opened in 7 autonomous colleges with trade related courses viz Tourism and Hospitality Management and Retail Management.
- **Infrastructure grant to universities / colleges:** Government has enhanced the infrastructure grant to HEIs to provide stable infrastructure. This has been increased to Rs. 2380 million including Government Colleges (Rs. 700 million). Under this Government has also planned to create 20,000 hostel seats in colleges and universities. Additionally infrastructure grants have been provided to Non-Government aided colleges' @Rs 1.0-1.2 million per college in coastal / backward areas. Similarly in all government and vocationally colleges, the laboratories have been strengthened with the financial assistance of Rs. 130 million from the state budget.
- **District Monitoring Cells:** Government has established 25 monitoring cells headed by District Level Consultants (DLCs) in different districts across the state for ensuring

quality in Higher Education. Recently government has sanctioned 5 more monitoring cells to fully cover all the districts of the state.

- **Language Laboratories:** In order to enhance the proficiency in communication in English, 93 language laboratories (35 in 2015-16) have been set up both in Government as well as non-Govt. colleges and short term course in Communication skill in English language is imparted in 25 colleges on pilot basis through these language laboratories.
- **National Mission on Education through Information and Communication Technology (NME-ICT) Project:** Government of Odisha in Higher Education Department in collaboration with BSNL-MTNL combine has taken up the NMEICT Project in the State. (As per the guideline of Higher Education Department, Ministry of H.R.D., Government of India,) To accelerate the activities of providing Broadband connectivity to the Degree Colleges and Universities in the State under NMEICT Project, Higher Education Department has constituted a Sub-Committee under the Chairmanship of the Commissioner-cum-Secretary, Higher Education Department to periodically monitor the Broadband connectivity being provided to all Universities/ Institutions/Colleges in the State.
- **Career Advancement:** Career Advancement Scheme has been given effect in favour of 1137 faculty members in Government Colleges and 200 faculty members in Non-Government Aided Colleges by giving them promotion to Lecturer (SS) and Reader grade.
- **Appointment of Junior Lecturers:** Higher Education Department, Government of Odisha has made necessary requisition with Odisha Public Service Commission to take appropriate steps for recruitment of Junior Lecturers to fill up 272 posts lying vacant in different Government Colleges in the State which is in progress. Similarly for filling up of 352 numbers of vacant posts of lecturers (CB) in Government Degree Colleges, OPSC has been requested. In the meantime, on the recommendation of OPSC State Government have already appointed 01 number of Lecturer and 102 numbers of Junior Lecturers in different Government Colleges. State Government have given Adhoc appointment of 623 numbers of lecturers in both the category junior Colleges and Degree Colleges.
- **Personnel Information Management System (PIMS):** With the objective of reducing the drudgery of the Establishment/ Billing Section of the Government and Non-Government Aided Colleges and making them efficient and with an aim to generate updated database of all personnel deployed in Government and Non-Government Aided Colleges, a Personnel Information Management System (PIMS) has been implemented in 114 Junior and Degree Colleges in first phase in 2009-10. It will be extended to other colleges gradually.
- **Promotional facility to the teachers of Non-Government Aided Colleges:** Government has framed "Odisha Non-Government Aided College lecturer's placement Rules 2014" creating new facility for the promotion/ up-gradation of lecturers of Non-Government Aided Colleges getting State Scale of Pay.
- **Leadership development programs:** Leadership development programs have been organized under RUSA for the Vice¬Chancellors/Registrars/other officials of Universities and also for Principals of Colleges by the Higher Education Dept.
- **0n-line Registration & Application procedure:** Higher Education Department has introduced the on-line Registration and Form Fill up for Junior Colleges from the

Academic Session 2011-12. Under this process around 5,00,000 students will be benefited having access to Higher Education Department website www.dheorissa.in for collection of their Registration cards and admit cards.

- **Anti-Ragging Cell:** As per the directions of Hon'ble Apex Court instruction has been issued to at Universities and Colleges to open Anti-ragging Cells and to deal strictly with such offenders.
- **Self-defense Training for College girls:** Self-defense training Programme for College girls is a flagship programme of Higher Education Department under Odisha State Youth Policy 2013. The programme was started on 1st August, 2013 with the aim of imparting self-defense training to 3,00,000 College girls during the academic session 2013-14. More than 600 numbers of Master Trainers had already been trained to impart training to girls at the College level.
- **National Cadet Crops (NCC):** N.C.C. has been promoted in the State jointly by Government of India and State Government. In the year 2015-16, 55,679 students of 184 colleges and 614 High Schools have been enrolled under N.C.C. Three numbers of NCC units have been opened in the KBK area of Nawarangpur, Rayagada, Bhawanipatna and one at Keonjhar. Apart from this, Government have agreed in principle for opening of one Naval Unit at Paradeep. NCC Cadets are taking part in the National level camps, Annual Training Camp, Nausainik Day Camps and also involved in Social Welfare activities like Plantation, Sanitation, Blood Donation Immunization and Awareness Generation Programme on HIV ft AIDS etc.
- **National Service Scheme (NSS):** National Service Scheme, a Centrally Sponsored Scheme The scheme, personality development of Volunteers through community service and the units have taken up various social welfare activities which include plantation, sanitation, water conservation, disaster management etc. It is operating in 11 Universities, one Deemed University and C.H.S.E., Odisha.
- **Youth Red Cross:** Youth Red Cross is organized in the State jointly by the State Government in the Higher Education Department and Indian Red Cross Society (State Branch) in different colleges and +2 institutions. The Youth Red Cross generate awareness on HIV/AIDS, communicable diseases, health promotion, training emergencies and safe blood.
- **Rovers Et Rangers:** Rovers and Rangers is implemented in different colleges jointly by State Government and Bharat Scouts a Guides (Odisha State Branch).

Social Security and Empowerment of Persons with Disabilities Department (SSEPD): It was created as a separate Department during 2015-16 after being bifurcated from W & CD Department. It has an elaborate field formation with the District Social Security Officer (DSSO) to assist the Collector in each District and a Sub-divisional Social Security Officer (SSSO) in every sub-division. Besides this, there are Block Social Security Officer (BSSO) at the Block level who assist the Block Administration in implementing the social security programs. The Department has a statutory body known as State Commissioner for Persons Disability (SCPD). State institute for Disability Rehabilitation (SIDR) a state level nodal agency is currently functioning at Bhubaneswar. 8 District Disability Rehabilitation Center (DDRC) are functioning in 8 district head quarter to undertake disability rehabilitation activities.

Office of the State Commissioner for Persons with Disabilities (SCPD): The office of the State Commissioner for Persons with Disabilities (SCPD) at the State level has been created as per

Section 60 of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995. As per this act, the Commissioner within the state shall:

- Co-ordinate with the departments of the State Government for the programs and schemes for the benefit to persons with disabilities;
- Monitor the utilization of funds disbursed by the State Government;
- Take steps to safeguard the rights and facilities made available to persons with disabilities;
- Submit reports to the State Government on the implementation of the Act at such intervals as that Government may prescribe and forward a copy thereof to the Chief Commissioner.
- Without prejudice to the provisions of section 61, the Commissioner may of his own motion or on the application of any aggrieved person or otherwise look into complaints with respect to matters relating to –
    1. Deprivation of rights of persons with disabilities;
    2. Non-implementation of laws, rules, bye-laws, regulations, executive guidelines or instructions made or issued by the appropriate Governments and the local authorities for the welfare and protection of rights of persons with disabilities and take up the matter with the appropriate authorities.

Relevant State Programs

Scholarships by HED: Various scholarships are being awarded by State Government to meritorious and poor students' pursuing higher studies including studies in technical and professional education. Following are the key initiative in this regard;

- State government has enhanced the rate of Senior Merit Scholarship and P.G. merit Scholarship. In addition to this government has relaxed the income limit of parents up to 0.6 million per annum so as to enable more meritorious students to avail the opportunity.
-
- HED has been awarding interest free loan stipend to deserving meritorious students pursuing studies in the field of science, medicine and technologies etc. of the state and outside the states in India.
- HED has introduced interest subvention scheme on education loan availed by students by giving subsidy @4% for boys and 6% for girls.
- Application procedure has also been simplified and now all categories of students can give on-line application through Common Application Form for Award of Scholarship (CAFAS) of its official website for various scholarships of the state government.

Beside this government distribute 15,000 laptops every year to students passing from Annual HS Examination and continuing their study in Higher Educational Institutions.

Scholarships by ST & SC Development, Minorities & Backward Classes Welfare Department: Department is providing Pre & Post Matric Scholarships as per Centre's provision through the PRERANA Portal, Skill Development Program (SDP) and undertaking construction of Hostels for OBC/SEBC students.

3.2.3 Institutional capacities for Social Management

At National level

Ministry of Human Resource Development (MHRD): Ministry has clearly identified their stakeholders, expectations from their clients, main services to be provided by the department and set standards for those. For effective and efficient working, Higher Education Department has made 'Responsibility Centre' and made it available on the ministry website. The Higher Education Department has Grievance Redressal Mechanism in place headed by an officer of the level of Joint Secretary along with timeliness for response.

University Grants Commission (UGC): It is a statutory body charged with coordination, determination and maintenance of standards of higher education. With headquarters in New Delhi, UGC has six regional centres in Pune, Bhopal, Kolkata, Hyderabad, Guwahati and Bangalore to take up the workload effectively and efficiently. UGC has the technical and financial capacities to act as a regulatory and grant-giving agency in the country.

National Assessment and Accreditation Council (NAAC): It is an autonomous body funded by University Grants Commission headquartered in Bangalore. It has the technical and financial capacities to assess and accredit institutions of higher education in India in transparent way.

Office of The Chief Commissioner for Persons with Disabilities (CCPD): The Chief Commissioner is vested with the power of a civil court under the Code of Civil Procedure. The proceedings before the Chief Commissioner shall be judicial proceedings within the meaning of Section 193 and 228 of the IPC and it shall be deemed to be a Civil Court for this purpose.

At State level

Higher Education Department (HED): This is the key department whose mandate as per The Orissa Education Act 1969 is to establish, maintain and regulate educational institutions imparting higher secondary, degree and post-graduation education in the state through grant of permission as well as recognition for their opening, continuance and to extend financial support.

- **Staff capacity:** The Principal Secretary is the administrative head of the department and is assisted by Director of Higher Education, Director of Vocational Education and three Regional Directors of Education stationed at Bhubaneswar, Berhampur and Sambalpur. The key responsibility at the state level for monitoring the Higher Education is with Directorate of Higher Education and includes Director Higher Education (1), Deputy Directors (5), Assistant Directors (3) and Establishment Officer (1). The key responsibility at the Regional and District levels for the implementation of state policies, monitoring their compliance and quality of education is with Regional Directorate of Higher Education and includes Regional Director Higher Education (1), Joint Director (1), Deputy Directors (2), Assistant Directors (4) and Section Officers (5). Staff of Directorate of Higher Education at state and region level is mostly busy in dealing with many court cases Performance Tracking Cell (PTC) plans and undertakes the initiatives for the capacity building of staff at the state and district level through Regional Directorates.
- **Monitoring capacity:** At the state level, Higher Education Department has a 'Performance Tracking Cell (PTC)' that monitors various aspects of the Higher

Education through software module available on department's website (SAMS, CIP etc.) and also through the reports received from District Level Consultants. At the district level, the HED has District Level Consultants who are responsible for visiting 10 colleges every month based on which they submit reports to the Performance Tracking Cell in the prescribed format called 'DLC Format'. This format captures various aspects related to the infrastructure, academic practices and performance of colleges, enrollment status and takes stakeholder's feedback.

There exists potential for better coordination between the HED, universities and DLCs for addressing issues related to lack of participation and social exclusion. A combination of interactive capacity building exercises and monitoring arrangements with universities acting as the nodal points could be explored

At HEI level

University level: Universities have committees on various administration and management aspects. Some key committees which exist in universities and are relevant for Social Management have been tabulated in Table 8:

Table 8: Various committees in Universities related to building infrastructure

Name of the committee	Members	Purpose
Building Committee	VC, Executive Engineer from WD, PG Council, Registrar, Prof-in-charge of UGC matters, Prof-in-charge of RUSA, Comptroller of Finance, Development Officer, Estate Officer, Head of departments	Finalization of plans and estimations of the various building projects proposals, ensuring the completion of the buildings in accordance with the approved plans and estimates and proper utilization of the funds received
UGC Committee	VC, PG Council, All Heads of Regular Departments, Registrar, Prof-in-charge of UGC matters, Comptroller of Finance, Development Officer, Assistant Engineer from the WD	Planning and implementation of infrastructure development works with UGC grants; Communication with UGC and related documentation; ensuring implementation of UGC guidelines related to infrastructure
RUSA Committee	VC, PG Council, All Heads of Regular Departments, Registrar, Prof-in-charge of RUSA matters, Comptroller of Finance, Development Officer, Assistant Engineer from the WD	Planning and implementation of infrastructure development works with support under RUSA; Communication and related documentation.

Name of the committee	Members	Purpose
Accommodation and Space Committee	PG Council & Ex-Officio Member, Syndicate-members, Registrar, All Heads of Regular Departments, Director SFC	Management of hostel
Canteen Committee	Chairperson PG Council & Ex-officio Member, Syndicate Member, Comptroller of Finance	Management and maintenance of canteen
Women Harassment Redressal Cell	VC, Registrar, PG Council, Female faculty nominated by VC	To ensure timely and satisfactory redressal of women's complaint
Grievance Cell	Registrar, PG Council, Development Officer, Heads of regular departments	To ensure timely and satisfactory redressal of students', staffs' or Faculty's complaints
Anti-Ragging Cell	Registrar, PG Council, Development Officer, Heads of regular departments	To eliminate ragging in all its forms from the institution by preventing its occurrence and punishing those who indulge in ragging

College level: Colleges have established committees for looking after different aspects of administration. Some key committees that are relevant for Social Management have been tabulated in Table 9:

Table 9: Various committees in Colleges related to building infrastructure

Name of the committee	Members	Purpose
Building Committee	Chairman Governing Body, Prinicpal, Vice Principal, Assistant Engineer from WD, Prof-in-charge of UGC matters, Prof-in-charge of RUSA, two faculty members nominated by the Principal, Administrative Bursar, Accounts Bursar	Finalization of plans and estimations of the various building projects proposals, ensuring the completion of the buildings in accordance with the approved plans and estimates and proper utilization of the funds received

Name of the committee	Members	Purpose
UGC Committee	Principal, Administrative Bursar, Faculty members	Planning and implementation of infrastructure development works with UGC grants; Communication with UGC and related documentation; ensuring implementation of UGC guidelines related to infrastructure
RUSA Committee	Principal, Administrative Bursar, Faculty members	Planning and implementation of infrastructure development works with support under RUSA; Communication and related documentation.
I.Q.A Cell	Principal, Senior Administrative Officers, Faculty members, Management members, Nominee from the local society	Development and application of quality benchmark for various activities of the college
NAAC Committee	Principal, Vice Principal, All bursars	Communication with NAAC and undertaking all related documentation including the Self-Study Report
Women Harassment Redressal Cell	Principal, Vice Principal, Administrative bursar, Female faculty	To ensure timely and satisfactory redressal of women's complaint
Grievance Cell	Principal, Vice Principal, Administrative bursar, Department Heads	To ensure timely and satisfactory redressal of students', staffs' or Faculty's complaints
Anti-Ragging Cell	Vice Principal, Administrative bursar, Faculty members	To eliminate ragging in all its forms from the institution by preventing its occurrence and punishing

Name of the committee	Members	Purpose
		those who indulge in ragging
Discipline Committee	Administrative bursar, Faculty members, NCC Officer, NSS Officer, Red Cross Coordinator, Rover Leader	To maintain discipline in the institution
Committee (s) for Remedial Coaching, Career Oriented Programme, Scholarships, Vocational Education	Administrative bursar, Department Heads, Faculty members nominated by the Principal	For undertaking specific works assigned by the Principal to promote student's welfare
Parent Teacher Association	Administrative bursar, Faculty members nominated by the Principal	For interaction with students' parents
Alumni Committee	Administrative bursar, Academic bursar, Faculty members nominated by the Principal, NCC Officer, NSS Officer, Red Cross Coordinator, Rover Leader	To track and keep in touch with alumni

3.2.4 Inter-institutional Coordination on Social Aspects

- Inter-institutional coordination is very crucial to ensure efficient management of relevant social aspects like inclusiveness and equitable access of Higher Education to poor and vulnerable groups. MHRD provides a link to Student Financial Aid Authority which has been set up to administer and monitor Scholarship as well Educational Loan Schemes, through the Pradhan Mantri Vidya Lakshmi Karyakram. Similarly National Scholarships Portal has been setup as one-stop solution through which various services starting from student application, application receipt, processing, sanction and disbursal of various scholarships to students are enabled.
- At state level, HED provides e-space for SAMS login through which students apply for admission in Higher Education Institutions.
- HED provides information about various scholarships available for students through the e-Medhabruti which is an online platform for getting information about scholarships and applying for them. ST & SC Development, Minorities & Backward Classes Welfare Department of Odisha also provide stipends / scholarships to SC/ST students. Though the money is transferred directly to beneficiary's account, information about these is given by

HED through newspaper advertisement and website. HEIs also act as facilitator for students to avail these schemes.

- HEIs approach UGC for seeking funds under various categories. For this, all HEIs have created separate committee to identify funds available with the agency, accordingly conceiving a project, preparing and submitting the proposal after due approval of the governing body. On receiving the funds, committee monitor the fund use and do all the communication through official letters with the agency.
- HEIs prepare the Self-study Report (SSR) as per guidelines and upload on the institution website. This is followed by the on-line submission of Letter of Intent (LOI) to the council. LOI is then processed by NAAC and the decision in this regard communicated to HEI within 15 days. The institution then submits the registration fee (demand draft). Within a week of the acceptance of the LOI, HEI is to do the on-line submission of Institutional Eligibility for Quality Assessment (IEQA) followed by Submission of Hard Copies of SSR within two weeks of acceptance of LOI / IEQA. NAAC then constitutes the peer team to visit the institutions within three weeks of receipt of SSR.
- HED provides financial and administrative support to HEIs. Department communicates HEIs about applicable acts, guidelines and various initiatives of the state by letters sent through e-Dispatch. Besides this it put all the information on the website.
- HEIs approach industries in their vicinity to develop some collaborative interaction with them. This is done to provide their students exposure to industry through industrial visits, interne ships, summer trainings and later placement.

3.2.5 Key Conclusions

The assessment of national and state level institutions and programs indicates that adequate institutional arrangements exists both at the national and state levels with clear mandate for ensuring social inclusiveness in areas applicable to OHEPEE. The state government has undertaken various initiatives to ensure social inclusion in higher education. However, there is potential to improve monitoring and positive impact evaluation of on-ground activities at the HEIs in liaison with universities, as is proposed under OHEPEE *(for details refer Chapter 5).* This will further enable the HED to optimize resource allocation and enhance inclusionary impacts across the disadvantaged groups.

3.3 Legal and Regulatory Framework Applicable to the Program

This section provides details on the social policies, laws, regulations of the Governments of India and Odisha, as well as guidelines that are relevant to the activities supported under the OHEPEE program. It also provides an assessment of the adequacy of the coverage on environmental aspects in the legislative and regulatory framework.

3.3.1 National Level Legal and Regulatory framework on Social Aspects

The various national policies and regulations applicable to OHEPEE have been tabulated in Table 10:

Table 10: Legal and Regulatory framework at National level

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
Constitution of India - Part III (Articles 12 to 35)	One of the six fundamental rights recognized by the Indian constitution is Right to equality: Which prohibits any discrimination on grounds of religion, race, caste, gender or place of birth, and equality of opportunity in matters of employment	It is directly related to the equity goal targeted under of OHEPEE. Article 15 and 16; enable reservation for Backward Classes in admission to educational institutions, and in public employment.
Articles 38, 41 and 46 of the constitutions	State to secure a social order for the promotion of welfare of the people through Right to work, to education and to public assistance in certain cases, Promotion of educational and economic interests of Scheduled Castes and other weaker sections	These are very relevant because the focus is to minimize the inequalities in opportunities and promotion of educational and economic interests of the weaker sections of the people.
The Protection of Civil Rights Act, 1955	It provides protection to any rights accruing to a person	This law promotes equity so is directly relevant to the program
Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act 1989 **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Rules, 1995** **Amendments Act, 2015**	It was enacted and brought into force on 31.01.1990, with a view to preventing atrocities against members of SCs and STs. Please elaborate on the latest amendment.	This law promotes equity by safeguarding the rights of SC and STs, so is relevant to the program.
The National Policy on Education (NPE), 1986 (modified in 1992)	Emphasis on the removal of disparities and to equalize educational opportunity especially for Indian women,	National Policy lays down the guidelines for what should be done so as to reduce the disparity and increase equality.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
Draft National Policy on Education 2016	Scheduled Tribes (ST) and the Scheduled Caste (SC) communities	To increase the educational opportunities for the SCs and the STs and other weaker sections of the society, the NPE has also suggested student support measures such as scholarships, remedial classes, hostel facilities and other forms of formal and non formal programs of technical education. All these are very relevant to OHEPEE.
The Central Educational Institutions (Reservation In Admission) Act, 2006	Out of the annual permitted strength in each branch of study or faculty, fifteen per cent seats shall be reserved for the Scheduled Castes; seven and one-half per cent. for the Scheduled Tribes and twenty-seven per cent for the Other Backward Classes.	Reservation in admissions for SCs and STs encourages students from these social groups to continue higher education and make it mandatory on the part of the institutions to enroll a certain percentage of SC and ST students in their intake.
Educational and Public Employment related Safeguards in the constitution	The Seventh, Eleventh & Twelfth Schedules of the Constitution are connected, directly or indirectly, with the Social Security	Its linkage with the technical training, vocational education, Social welfare of the weaker sections, and in particular, of the Scheduled Castes makes it very relevant to the program.
Central Universities Act, 2009	It is related to the various aspects of the university.	This is very relevant as university manages the academic aspects of higher education.
Right to Information Act 2005 <u>Responsible department / ministry:</u> Ministry of Personnel, Public	The Act has provisions under which any citizen of India may request information from a "public authority" which is required to reply expeditiously or within thirty days. It also requires every public authority to computerize their records for wide dissemination and to	This is very relevant to the governance benchmarking part of the program.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
Grievances and Pensions	proactively certain categories of information so that the citizens need minimum recourse to request for information formally.	
Citizens' Charter Bill 2011 <u>Responsible department / ministry:</u> Department of Administrative Reforms, Ministry of Personnel	Departments to formulate and inform users about their Time Bound Delivery of Goods & Services	This is very relevant to the governance benchmarking part of the program.
Time Bound Delivery of Goods & Services & Redressal of Their Grievances Bill 2011. <u>Responsible department / ministry:</u> Department of Administrative Reforms, Ministry of Personnel	Every citizen is given right to get time bound delivery of goods and services. If it is not delivered, then there should be an effective redressal mechanism.	This is very relevant to the governance benchmarking part of the program.
The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013	Regulates land acquisition and lays down the procedure and rules for granting compensation, rehabilitation and resettlement to the affected persons in India.	The Act has provisions to provide fair compensation to those whose land is taken away, brings transparency to the process of acquisition of land to set up factories or buildings, infrastructural projects and assures rehabilitation of those affected.
The Minimum Wages Act 1948	Any other establishment employing twenty or more persons or class of such	This is very relevant to the governance benchmarking part of the program.
Employees Provident Fund and		

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
Miscellaneous Provisions Act, 1952	establishments which the Central Government may,	
Payment of Gratuity Act, 1972	by notification in the Official Gazette, specify, in this behalf:	
UGC Guidelines		
UGC (Credit Framework for Online Learning Courses through SWAYAM) Regulation, 2016	These shall apply to all universities established or incorporated by or under a Central Act, a Provincial Act, or a State/Union Territory Act and all institutions recognized by or affiliated to such Universities and all institutions deemed to be universities under Section 3 of the UGC Act, 1956. These shall further apply to the transfer of credits of such students who are enrolled as regular/part-time students in any educational institution in India. he online learning courses shall be made available on the SWAYAM Platform by the PI identified by the National MOOCs Coordinator, through the Host Institution, as per the schedule finalized by him/her.	This is applicable to OHEPEE as Universities will be covered under the program.
University Grants Commission (Minimum Qualifications for Appointment of Teachers and other Academic Staff in Universities and Colleges and Measures for the Maintenance of Standards in Higher	A relaxation of 5% may be provided at the graduate and Masters level for the Scheduled Castes/Scheduled Tribes/Differently-abled (physically and visually differently-abled) /Other Backward Classes (OBC) (Non-creamy layer) categories for the purpose of eligibility and for assessing good academic records during direct	This is applicable to OHEPEE as this is related to the quality of Higher Education.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
Education) (4th Amendment), Regulations, 2016.	recruitment to teaching positions. The term of appointment of the College Principal shall be five years with eligibility for reappointment for one more term only after a similar Selection Committee process which shall take into account an external peer review, its recommendations and its outcomes.	
University Grants Commission (Promotion and Maintenance of Standards of Academic Collaboration between Indian and Foreign Educational Institutions) Regulations, 2016	These regulations shall apply to- (a) All Foreign Educational Institutions operating in India through collaboration with Indian Educational Institutions, other than Technical Institutions, prior to the coming into force of these regulations, or intending to operate through collaboration, for offering their programs leading to award of degrees; and Indian Educational Institutions, other than Technical Institutions, already collaborating prior to the coming into force of these regulations, or intending to collaborate with Foreign Educational Institutions for offering programme(s) of study leading to award of degrees.	This is applicable to OHEPEE as to improve the quality of Higher Education, collaboration with foreign educational institutions will be encouraged.
UGC [Institutions Deemed To Be Universities] Regulations, 2016	These Regulations shall apply to every institution seeking declaration as an institution deemed to be university under the Act as also, albeit prospectively, to an institution which has been declared as an institution deemed to be	This is applicable to OHEPEE as Higher Education institutions will be encouraged to be autonomous and later try to achieve the university status.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
	university under Section 3 of the UGC Act, 1956 Eligibility criteria Conditions	
Prevention, prohibition and redressal of sexual harassment of women employees and students in higher educational institutions Regulations, 2015	Whenever required appropriately subsume the spirit of this in the policy and regulations on the prevention and prohibition of sexual harassment against the employees and students and modify its ordinance and rules in consonance with the requirements of the regulations	This is applicable to OHEPEE as it addresses the women issue and promotes safe work culture and environment for them.
Sexual Harassment of Women at Workplace (Prevention, prohibition and Redressal) Act, 2013	HEI should make policy and regulations on the prevention and prohibition of sexual harassment against the employees and students.	This is applicable to OHEPEE as it addresses the women issue and promotes safe work culture and environment for them.
Revised Guidelines for Grant of Study Leave	This scheme provides an opportunity to avail of scholarships / fellowships awarded to the faculty who wish to acquire new knowledge and to improve analytical skills	This is applicable to OHEPEE as it promotes Faculty Development Programs.
Curbing the menace of Ragging in Higher Educational Institutions (Amendment) Regulations 2012	HEI should create Anti ragging committee and ensure the prevention and prohibition of ragging in their institutions.	This is applicable to OHEPEE as it addresses students issue and promotes safe environment for them.
University Grants Commission (Grievance Redressal) Regulations 2012	This is applicable to all the Universities and every institution recognized by the UGC.	This is applicable to OHEPEE as it provides a platform to students of all communities to register their complaints and get it redressed in the set

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
	Grievance Redressal Committee is to be constituted under these regulations.	timeline. This way it promotes their rights.
University Grants Commission (Promotion of Equity in Higher Educational Institutions) Regulations 2012	Every higher educational institution shall take appropriate measures to safeguard the interests of the candidates without any prejudice to their caste, creed, religion, language, ethnicity, gender and disability	This is applicable to OHEPEE as it promotes the rights of students.

3.3.2 State Level Legal and Regulatory Framework on Social Aspects

Various state policies and regulations applicable to OHEPEE have been tabulated in Table 11:

Table 11: Legal and Regulatory Framework at State Level

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
The Orissa Education Act, 1969	Applicable on all educational institutions of the state which includes colleges and institutions imparting technical and professional education. It describes all the aspects related to educational institutions	By default it is relevant to the program
Orissa Education Amendment Act 1994 **The Odisha Education (Amendment) Act, 2015**	No private educational institution which require recognition shall be established except in accordance with the provisions of this Act or the rules made there under Sub-sections were inserted in Section 7-C of the Odisha Education Act, 1969. It states that the private Educational Institutions covered under the clauses (a) and (b) of sub-section (5) recognized after 31st March, 2008 shall not be entitled for any grant-in-aid from the State Government	By default it is relevant to the program

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
Orissa Higher Secondary Education Act 1982	Constitution of Council of Higher Secondary Education and powers and functions assigned to it. One of the main functions is to co-ordinate Higher Secondary Education with University Education on the one side and Secondary Education on the other. Others are to conduct exams, admit candidates to examinations, publish results, grant diplomas and certificates to successful candidates etc.	Secondary education has the key linkage with the higher education, so very relevant.
Odisha Secondary Education Act 1952 **Amendment in 1979** **Second Amendment in 1996**	Applicable only for secondary education	
Odisha Local Fund Audit Act 1948 **The Orissa Local Fund Audit Rules, 1951** **The Odisha Local Fund Audit Manual 2014**	The accounts of any Local authority whose accounts are declared by the Provincial Government by notification to be subject to audit under this Act	This is very relevant to the governance benchmarking part of the program.
Odisha Aided Educational Institutions Act, 1969 **Orissa Aided Educational Institutions (Appointment of Lecturers Validation) Act, 1998**	This Act is about the service of the Lecturers of Aided collage and Aided junior college , who have been appointed on temporary basis against approved or admissible posts by the concerned Governing Body during the period between 01.01.1985 and 31.12.1992 and are continuing as such and are in pay roll of the concerned collage against the said approved on admissible post, are validated and regularized	This is very relevant to the excellence part of the program.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
Odisha education service(Professor Grade) Recruitment rules, 1990	These rules prescribe procedure and eligibility criteria for recruitment of Professors in different disciplines in the collage of the state	This is very relevant to the equity and excellence part of the program.
The Prevention of Corruption Act 1988	Any person, employee or staff of college / university, by whatever designation called, whose services have been availed of are not allowed to take gratification other than legal remuneration in respect of an official act	This is very relevant to the governance benchmarking part of the program.
The Odisha Conduct Of Examination (Amendment) Bill, 2013	It has the provision of penal action for adoption of unfair means at certain examinations in the State of Odisha by students, teachers and even by the public.	This is very relevant to the excellence part of the program.
Orissa State UGC Pay Rules 2009	Revision of pay scale of teachers and equivalent cadres in receipt of UGC scales of pay in Universities and colleges following the revision of pay scales of Central Pay Commission	This is very relevant to the governance benchmarking part of the program.
Orissa (Non Government colleges, Junior colleges and Higher Secondary Schools) Grant-in-Aid order 2008	Eligibility criteria for consideration for Block Grant, conditions for consideration for block grant, eligibility of posts for Block Grant, Disbursement of Block Grant and appointments in the aided educational institutions	This is very relevant to the governance benchmarking part of the program.
The Odisha university Act 1989 **The Odisha university First Statues, 1990**	Act has provisions for the various aspects of the university	This is very relevant as university manages the academic aspects of the Higher Education
Odisha Education Service in State's Scale of Pay (Method of recruitment and	These rules prescribe the method and eligibility criteria for recruitment of Jr. Lectures in State's Scale of Pay, their	This is very relevant to the governance benchmarking part of the program.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
conditions of Service) Rules, 2009	promotion and condition of Service etc.	
Orissa Education (Establishment, Recognition and management of Private Junior colleges/Higher Secondary Schools) Rules 1991	The provisions laid down under these rules are related to preparation of master plan for the establishment of new educational institutions by the end of September and governing body for these institutions.	This is very relevant to the governance benchmarking part of the program.
Orissa (Aided colleges, Aided Junior colleges and Aided Higher Secondary Schools) Grant-in-Aid order 2009 **Orissa (Aided colleges, Aided Junior colleges and Aided Higher Secondary Schools) Grant-in-Aid Amendment Order 2013**	This Order is made to regulate the payment of Grant-in-Aid in the shape of Block Grant to Aided Educational Institution or for any post or to any person employed in such institutions being an Aided College, Aided Jr. Colleges and Aided Higher Secondary Schools.	This is very relevant to the governance benchmarking part of the program.
The Odisha Loan Stipend Fund Rules	Government has credited a separate fund known as "Odisha Loan Stipend Fund'' which is administered by the government in the higher education Department. the purpose of creation of this fund is to extended loan to the deserving and need young men of Odisha to enable them to prosecute higher studies in foreign countries as well as in India subject criteria and procedure for grant of loans and mode of their recovery have been laid down under	This is very relevant to the equity and excellence part of the program.

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
The Odisha Education (Establishment, Recognition and Management of private Jr College, Higher Secondary schools) Rules, 1991	These rules have been farmed under sub-section (1) of section 27 read with sub-section (1) of section-7 of the Odisha Education Act, 1969. The procedure for establishment of private Jr.colleges/higher secondary schools, grant of permission and recognition, opening of new stream or subject increase of seats, management of these institution, constitution of Governing bodies etc have been laid down under these rules.	This is very relevant to the equity and excellence part of the program.
Odisha Higher Secondary Education (Amendment) Regulation 1983	Provisions talk about governing body, staff council, Parent Teacher Association, Hostel provision, game facilities, registers and records to be maintained	This is very relevant to the equity and excellence part of the program.
Draft Orissa Higher Education Policy 2016	It has all the components of equity and excellence like Access, Quality etc.	This is very relevant to the equity and excellence part of the program.
Odisha State Policy for Girls and Women 2014	Focus areas include Equity & Equality, Participation and Inclusion.	This is very relevant to the equity and excellence part of the program.
The Equal Remuneration Act, 1976 The Maternity Benefit Act, 1961	Article 39 of Constitution envisages that the State shall direct its policy, among other things, towards securing that there is equal pay for equal work for both men and women. This is in accordance with, the Equal Remuneration Ordinance, 1975	This is very relevant to the equity part of the program.
Reservations for persons with disabilities– Dated Dec 2013	It is in consonance with the provisions of the Persons with Disabilities (Equal Opportunity, Protection of Rights and Full Participation) Act, 1995	This is very relevant to the equity part of the program.
The Sexual Harassment of	The Act in its Section 2n, defines sexual harassment. This Act is to	This is very relevant to the governance

Act, Policy or Government Order	Brief Overview	Applicability to OHEPEE
women at workplace (Prevention, Prohibition, and Redressal) Act 2013	provide Protection against sexual harassment of women at workplace Prevention Redressal of complaints of sexual harassment	benchmarking part of the program.
The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 Responsible department / ministry: Office of the State Commissioner for Persons with Disabilities	The removal of architectural barriers from schools. colleges or other institution, imparting vocational and professional training;	This is very relevant to the equity part of the program.
The Odisha Reservation Policy in Education for Scheduled castes and Scheduled tribes)	In 2015, Odisha Government raised the reservation of seats for students belonging to schedule tribe and scheduled caste in educational institutions to 38.75 per cent from 20 per cent. This is applicable for all government and non-government educational institutions of all types in the state. This will increase the opportunities for backward communities who are economically and socially backward due to several reasons.	This is very relevant to the equity part of the program.
Orissa reservation vacancy act 1975 **The Odisha reservation of vacancies in posts and services (for scheduled castes and Scheduled tribes) amendment bill, 2013**	The reservation policy in Odisha State is applicable for Special Economic Backward Classes (11.25%), Schedule Castes (16.25%), Schedule Tribes (22.5%) and PwD (3%).	This is very relevant to the equity part of the program.

3.3.3 Adequacy of legislative framework on social aspects

Assessment of the adequacy of the existing legislative framework in its coverage of the social aspects pertaining to the relevant OHEPEE activities is presented under the following sections:

Adequacy of the regulatory framework to address the social issues

The Constitution of India provides all the basic elements which are essential to promote equity in higher education. Right to equality, promotion of educational and economic interests of the weaker sections of the people, making governments responsible for securing a social order for the promotion of welfare of the people through equality of opportunity, reservations and other appropriate measures are some of the key provision made in the Indian constitution in this regard. It also provides adequate measures for the demand side through Right to Information Act, Citizens' Charter Bill, Time Bound Delivery of Goods & Services & Redressal of Their Grievances Bill, The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act etc.

Assessment of the legal and regulatory framework for the social aspects pertaining to Higher Education points out that both national and state government had clear focus on inclusiveness. Over the period of last two decades these governments have placed significant emphasis on excellence along with expansion and equity in Higher Education. Various guidelines of the UGC reflect the efforts taken for ensuring the continued implementation of all these acts and regulations in HEIs. The frequent amendments of these regulations again indicate that governments are acting promptly to keep the regulations relevant to the emerging situations. Besides this governments have launched several programs/schemes to enhance the enrolment of students belonging to SCs / STs and PwDs in Higher Education. Some of these include various students support initiatives such as Scholarships, Remedial coaching classes, opening of Equal Opportunity Cells in the Universities etc.

3.4 Assessment of Social Management Systems

3.4.1 Overview

The state of Odisha is in the Eastern coast with a population of 43.7 million. In terms of proportion, the rural population constitutes 83.3% of the state population and the urban population is 16.7%32. Income from agriculture, forestry and fishery, on which most of the poor depends, remains volatile and excessively dependent on rainfall. With a per capita income of US$1150 in 2014-2015, the state economy exhibited an increasing growth trend, though erratic at times. During the last three plan periods growth rate remained at a level of around 6 percent or above. But this has not been enough to reduce the existing development gap between the State economy and the national economy significantly.[33]

The state has performed relatively well in terms of poverty reduction, 8.2 million poor people moved out of poverty between 2005 and 2012, moving Odisha from a rank of 30 in 2004 to 25 in 2012 amongst Indian states.

[32] Odisha Economic Survey: 2014-15

[33] Odisha Annual Plan, Planning and Coordination Department: 2015-16

Scheduled Castes (SCs) and Scheduled Tribes (STs) are among the most disadvantaged socio-economic groups in India. With its focus on 'faster, sustainable and more inclusive growth' the 12th Five Year Plan highlights that concerns of the poor, the Scheduled Castes, the Scheduled Tribes, Other Backward Classes, minorities, differently abled and other marginalised groups must be addressed for growth to be inclusive.

SCs comprise 17.1% of the population of the state. The highest proportion of SCs was recorded in Subarnapur district (25.6%) and the lowest in Gajapati district (6.8%). STs comprise 22.8 percent of the state's population, against an average of 8.6 percent nationally. The proportion of STs is highest In Mayurbhanj (58.7%) and lowest in Puri (0.4%)[34]. The poverty rate of STs in Odisha is the highest nationally, at 63 percent, and educational attainment for STs is particularly poor with only 2.1 percent of STs in Odisha having completed higher education (HE), against 13.7 percent of the general category population[35].

The literacy rate in the state has increased significantly from 63.08 percent in 2001 to 72.87 percent in 2011. The female literacy rate has also been increased by 13.5 percentage points in the last decade, while the male literacy rate increased by 6.3 percent. It is significant to note that the gender gap in literacy rate has reduced from 24.8 percent in 2001 to 17.6 percent in 2011. But the disparities on literacy front among social category, regional dimensions remain an area of concern for the State. The SC and ST communities had relatively lower literacy rate of 69.02 and 52.24 percent in 2011. The gender gap among SC and ST remain high with 20.45 and 22.50 percent in 2011. Nabarangpur district has very low literacy rate of 46.43 percent while Khorda was highly literate with 86.88 percent in 2011. The coastal district of Jagatsinghpur had the highest male literacy rate of 92.38 percent while Khorda had the highest female literacy rate of 81.61 percent by 2011. While the state has shown significant improvement in enrolment in primary education, dropout rates at the higher secondary education level have been declining at a slower pace. Dropout rates for STs and SCs in secondary education are still high at 19.02 and 16.34 percent respectively as compared to drop outs at primary education.[36]

Due to several economic, social and institutional obstacles, all regions in Odisha have not shared the gains of development in an equitable manner. Some regions continue to remain backward. **The undivided districts of Koraput, Bolangir and Kalahandi (popularly known as KBK districts) form one such region where the incidence of poverty is very high. Several other pockets of southern and western Odisha are also socially and economically depressed[37]**. These regions are also frequently visited by natural calamities including severe droughts and floods.

The list of districts in descending order on the basis of the total share of SC and ST population has been given in Table 12.

[34] Census 2011
[35] AISHE: 2014-15
[36] Odisha Economic Survey: 2014-15
[37] Odisha Economic Survey: 2014-15

Table 12: District-wise share of SC and ST population[38]

Name	Percentage of SC population	Percentage of ST population	Total SC and ST population
Malkangiri	22.6%	57.8%	80.4%
Rayagada	14.4%	56.0%	70.4%
Nabarangapur	14.5%	55.8%	70.3%
Kandhamal	15.8%	53.6%	69.3%
Mayurbhanj	7.3%	58.7%	66.0%
Koraput	14.2%	50.6%	64.8%
Gajapati	6.8%	54.3%	61.1%
Sundargarh	9.2%	50.7%	59.9%
Kendujhar	11.6%	45.4%	57.1%
Sambalpur	18.4%	34.1%	52.5%
Debagarh	16.7%	35.3%	52.0%
Jharsuguda	18.1%	30.5%	48.6%
Nuapada	13.5%	33.8%	47.3%
Kalahandi	18.2%	28.5%	46.7%
ODISHA	**17.1%**	**22.8%**	**40.0%**
Bargarh	20.2%	19.0%	39.2%
Balangir	17.9%	21.1%	38.9%
Baudh	23.8%	12.5%	36.3%
Subarnapur	25.6%	9.4%	35.0%
Dhenkanal	19.6%	13.6%	33.2%
Anugul	18.8%	14.1%	32.9%
Baleshwar	20.6%	11.9%	32.5%
Jajapur	23.7%	8.3%	32.0%
Bhadrak	22.2%	2.0%	24.3%
Ganjam	19.5%	3.4%	22.9%
Cuttack	19.0%	3.6%	22.6%
Jagatsinghapur	21.8%	0.7%	22.5%
Kendrapara	21.5%	0.7%	22.2%
Nayagarh	14.2%	6.1%	20.3%
Puri	19.1%	0.4%	19.5%
Khordha	13.2%	5.1%	18.3%

The state average share of SC and ST population stands at 40%.

[38] Census 2011

3.4.2 Enrolment in Higher Education

There are different types of institutions that offer higher education. The majority of students (639,000) are in the 1,054 degree colleges and the remaining 90,000 students are in 18 universities including 12 state/public universities, 1 central university, 2 deemed universities, and 3 private universities.

The average enrolment per college in Odisha though has increased from 600 in 2010-11 to 661 in 2015-16, but it also continues to be below national average (700 to 721) throughout this period.

The Gross Enrolment Ratio (GER) for Odisha in the year 2015-16 is **at 19.6 percent. Though consistent increase is observed in GER** of the state from 2011-12 to 2015-16, it is still lagging behind the national ratio (24.5). The GER for SCs, STs are far below the average GER for the state and those of other social groups. *Refer Table 13*. There is also a wide gender disparity; GER for males is 21.5 percent while that for females is only 17.8 percent.

GER for SC students is 14.7 and for ST students is 9.4 percent compared to national ratios of 19.9 percent and 14.2 percent respectively. The GER for ST girls and boys continues to be below the national average at 8.2 percent and 10.7 percent respectively.

Table 13: Comparative Gross Enrolment Ratio: Odisha and India

State	All			SC			ST		
	Both	Male	Female	Both	Male	Female	Both	Male	Female
India									
2015-16	24.5	25.4	23.5	19.9	20.8	19.0	14.2	15.6	12.9
2014-15	24.3	25.3	23.2	19.1	20.0	18.2	13.7	15.2	12.3
2013-14	23.0	23.9	22.0	17.1	17.7	16.4	11.3	12.5	10.2
2012-13	21.5	22.7	20.1	16.0	16.9	15.0	11.1	12.4	9.8
2011-12	20.8	22.1	19.4	14.9	15.8	13.9	11.0	12.4	9.7
Odisha									
2015-16	19.6	21.5	17.8	14.7	16.5	12.9	9.4	10.7	8.2
2014-15	17.7	19.6	15.9	12.2	13.6	10.7	7.9	8.9	6.9
2013-14	16.4	18.0	14.8	10.5	11.4	9.6	6.7	7.4	6.0
2012-13	16.3	18.6	14.1	9.9	11.1	8.6	6.2	7.1	5.5
2011-12	16.6	18.3	15.0	9.2	10.0	8.4	6.6	7.2	6.0

Source: AISHE 2015-16 survey data

Inter District variation in GER

While the percentage of population completing matric or secondary education (class 10) in the districts with high SC and ST population ranges from 25% to 30%, the share of graduates

(completed higher education)among literates[39] in the population is below 10 percent (Census 2001 estimates). For instance, in the districts of Kandhamal, Kalahandi and Mayurbhanj the percentage of graduates amongst literates stand at 3.42%, 3.48% and 5.56% respectively[40].

Table 14 shows that the districts belonging the low GER range are also districts with high percentage of SC and SR population. For instance, the combined percentage of SCs and STs in Malkangiri, Nuapada, Deogarh, Kalahandi, Kandhamal is 80.4%, 47.3%, 52%, 46.7% and 69.3% respectively. The GER for these districts stands at 5.8%, 5.2%, 11.7%, 9.3% and 12.5% respectively. This provides us with a strong rationale for special focus on districts with high share of SC and ST population.

[39] Census defines literates as the total percentage of the population of an area at a particular time aged seven years or above who can read and write with understanding
[40] Census 2001 estimates

Table 14: Inter district variation in Odisha: GER for under graduates: 2011-12 & 2015-16[41]

	2015-16							Share of SC and ST population
		ALL		SC		ST		
District	**All**	Male	Female	Male	Female	Male	Female	
Range 1: High GER								
Khordha	75.3	88.6	60.9	62.5	44.2	118.9	90.8	18.3%
Range 2: Mid-level GER								
Cuttack	28.1	27.7	28.5	14.7	16.7	16.7	15.5	22.6%
Dhenkanal	23.3	23.6	23.0	12.0	11.0	9.8	10.0	33.2%
Baleshwar	22.7	21.6	23.8	13.9	14.9	10.1	8.4	32.5%
Bhadrak	19.6	15.9	23.2	8.6	12.1	5.9	5.6	24.3%
Kendrapara	19.3	15.8	22.9	10.1	16.1	11.0	11.5	22.2%
Jajapur	18.8	16.3	21.4	11.1	13.0	4.6	4.1	32.0%
Ganjam	18.1	18.9	17.3	13.0	10.2	28.9	15.9	22.9%
Puri	18.1	15.1	21.3	11.3	15.0	83.1	42.7	19.5%
Mayurbhanj	18.0	17.4	18.7	23.6	23.7	9.1	10.6	6.6%
Nayagarh	18.0	17.7	18.3	13.3	9.6	9.2	7.6	20.3%
Sambalpur	16.3	16.2	16.5	11.5	11.8	8.8	11.0	52.5%
Sundargarh	16.2	13.9	18.6	16.4	17.4	7.2	10.2	59.9%
Range 3: Low-level GER								
Subarnapur	15.6	16.1	15.0	14.5	11.9	13.2	16.4	35%
Rayagada	15.4	22.1	9.0	22.8	10.6	6.9	3.5	70.4%
Anugul	15.2	15.1	15.2	9.4	9.0	8.1	8.1	32.9%
Bargarh	14.8	14.2	15.4	12.3	11.0	11.3	10.9	39.2%
Gajapati	14.0	17.9	10.2	34.7	16.1	10.0	5.0	61.1%
Kendujhar	13.0	12.1	14.0	13.8	14.8	6.9	7.0	57.1%
Koraput	12.7	15.0	10.4	21.3	12.4	7.5	4.0	64.8%
Bolangir	12.6	14.4	10.7	15.6	11.7	10.6	7.0	38.9%
Kandhamal	12.5	13.9	11.1	13.7	11.3	10.0	9.2	69.3%
Jharsuguda	12.5	10.9	14.2	9.4	12.2	7.8	10.0	48.6%
Jagatsinghapur	12.4	9.5	15.3	6.9	12.0	12.7	12.2	22.5%
Deogarh	11.7	11.8	11.5	11.1	9.2	7.2	7.1	52%
Kalahandi	9.3	11.1	7.6	12.4	10.5	5.6	3.8	46.7%
Baudh	8.3	10.6	6.0	7.3	4.4	10.2	4.3	36.3%
Malkangiri	5.8	6.6	5.0	10.3	7.6	3.5	2.4	80.4%
Nuapada	5.2	7.0	3.5	10.4	5.4	4.5	2.1	47.3%
Nabarangapur	3.6	4.2	2.9	5.7	4.1	2.8	1.2	70.3%
Total	19.7	20.3	19.1	15.0	13.8	9.4	8.3	

[41] GER the total enrolment in higher education in the district expressed as a percentage of the population in the official age group corresponding to this level of education.
District-level GER is calculated by no. of students enrolled/ share in population in the age group of 15-20 years.
Data source: AISHE 2011-12, 2015-16 and Census 2011

The variations across districts from 2011-12 to 2015-16 provide some interesting insights. Given the various planned interventions executed by the HED over the last five years, districts with high share of SC and ST population registered substantial progress in terms of enrolment over the last five years. However, as depicted in table, they still continue to fall behind compared to districts with lower percentage of SC and ST population. Within districts, the progress of SC and ST sub-groups especially ST girls' lags behind the progress in enrolment achieved by the entire cohort.

Thus, it becomes quite clear that for Odisha to make significant strides in higher education, it is important for the state to focus on districts with high share of SC/ST population and low GER.

The categorization of districts based on GER and share of ST and SC population has been tabulated in Table 15:

Table 15: OHEPEE categorization of districts based on GER and share of ST and SC population (to be discussed and confirmed)

Category A districts under OHEPEE				Category B districts under OHEPEE			
Sr. no	District Name	Total % of	GER (2015-16)	Sr. no	District Name	Total % of SC and ST population	GER (2015-16)
1	Malkangiri	80.4	5.8	1	Sambalpur	52.5	16.3
2	Rayagada	70.4	15.4	2	Deogarh	52	11.7
3	Nabarangpur	70.3	3.6	3	Jharsuguda	48.6	12.5
4	Kandhamal	69.4	12.5	4	Bargarh	39.2	14.8
5	Mayurbhanj	66	18	5	Dhenkanal	33.2	23.3
6	Koraput	64.8	12.7	6	Angul	32.9	15.2
7	Gajapati	61.1	14	7	Balasore	32.5	22.7
8	Sundergarh	59.9	16.2	8	Jajpur	32	18.8
9	Keonjhar	57	13.0	9	Bhadrakh	24.2	19.6
10	Nuapada	47.3	5.2	10	Ganjam	22.9	18.1
11	Kalahandi	46.7	9.3	11	Cuttack	22.6	28.1
12	Bolangir	39	12.6	12	Jagatsinghpu	22.5	12.4
13	Boudh	36.3	8.3	13	Kendrapara	22.2	19.3
14	Sonepur	35	15.6	14	Nayagarh	20.3	18
				15	Puri	19.5	18.1
				16	Khurdha	18.3	75.3

Under OHEPEE, increase in enrolment as well as on-time graduation of SC, ST and women are identified as a development objective. To ensure that these groups have enhance equitable access to higher education in the state, OHPEE categorizes districts into two for the purpose of selecting HEIs. Category A districts under OHEPEE are districts with high SC and ST population and historical instances of poverty and exclusion. These districts are recognized as 'KBK' plus by the government of Odisha and receive special attention in terms of

developmental resources to promote inclusion. Given that development indicators for these two district sets differ considerably, this categorization is a safeguard measure to ensure that access to higher education is equitable.

Inter district Variation in enrolment against reservation of SC and ST

Government increased the reservation of seats for SC and ST students to 16.5 and 22 percent respectively in the year 2015. Districts with enrolment above the mandated reservation are highlighted in orange while the districts with less than one-third enrolment i.e. 7.5% of ST and SC students are highlighted in yellow. Puri, Cuttack, Khorda are in the group of yellow highlighted districts. It can be observed that the yellow cells are clustered in category B districts vis-à-vis the orange cells clustered in category A districts.

District wise variation in enrolment of undergraduates has been tabulated in Table 16:

Table 16: District-wise variation in enrolment[42] of under graduates in 2015-16 [43]

Category A					Category B				
Sl No	District Name	% SC enrollment	% ST enrollment	No of NAAC Acredited colleges in the district	Sl No	District Name	% SC enrolment	% ST enrolment	No of NAAC Acredited colleges
1	Bolangir	19.6	15	5	1	Angul	11.4	7.5	3
2	Boudh	16.9	11	1	2	Balasore	13.2	4.9	9
3	Gajapati	12.9	37.6	3	3	Bargarh	15.9	14.3	5
4	Kalahandi	24.1	15.4	2	4	Cuttack	10.1	1.6	18
5	Kandhamal	15.8	41.1	3	5	Deogarh	14.5	21.7	1
6	Koraput	19	24.7	4	6	Dhenkanal	9.7	5.8	3
7	Malkangiri	34.6	28.8	1	7	Ganjam	12.7	4	7
8	Nabarangpur	20.1	31.6	1	8	Jagatsinghpur	16.6	0.7	2
9	Nuapada	20.2	20.9	1	9	Jajpur	15.2	1.9	5
10	Rayagada	15.5	18.8	4	10	Jharsuguda	15.6	21.8	1
11	Sonepur	21.7	8.9	4	11	Kendrapara	14.5	0.4	3
12	Keonjhar	12.9	25	8	12	Khurdha	10.1	5.5	9
13	Mayurbhanj	9.6	32.1	9	13	Nayagarh	9.1	2.8	2
14	Sundergarh	9.3	28.7	6	14	Puri	13.9	1.3	1
					15	Sambalpur	14.6	23.2	2
					16	Bhadrakh	11.7	0.6	3

[42] While table 18 explains **Gross Enrolment Ratio** (No. of students enrolled/ population in the age group 15-20) variation across districts, table 19 explains **enrolment in percentage terms** (Number of SC/ST students enrolled/ Total number of students enrolled)

[43] Data source – AISHE 2015-16

Table 17: Status of enrolment in 18 colleges visited during ESSA[44]

SL. No.	Name of the Institution	District	Category A/B	Total Seats	Percentage Enrolment	Vacant Seats
1	Tentulia Sasan Debasthan College, Baragam,	Ganjam	Category B	422	64.9	148
2	Science (A) College, Hinjilicut	Ganjam	Category B	855	98.6	12
3	Kshetra Mohan Science College, Berahampur	Ganjam	Category B	339	77.9	75
4	Nimina Brundaban Chandra College, Kendupadar,	Ganjam	Category B	423	78.3	92
5	R.C.M Science (D) College, Khallikote,	Ganjam	Category B	746	85.5	108
6	Kunja Bihari College, Barang,	Khurdha	Category B	475	76.6	111
7	Maharishi College of Natural Law, Bhubaneswar,	Khurdha	Category B	494	94.5	27
8	Godabaris Mahavidyalaya, Banpur	Khurdha	Category B	488	96.3	18
9	Semiliguda College, Semiliguda,	Koraput	Category A	423	69.7	128
10	Vikram Dev (Auto) College, Jeypore	Koraput	Category A	982	98.1	19
11	Laxmipur Degree College, Laxmipur,	Koraput	Category A	282	48.9	144
12	Government College,Koraput	Koraput	Category A	669	87.9	81
13	Government Women's College, Baripada,	Mayurbhanj	Category A	510	88.8	57
14	B.B. College, Baiganbadia,	Mayurbhanj	Category A	527	95.1	26
15	Maharaja Purna Chandra (A) College ,Baripada	Mayurbhanj	Category A	1284	94.1	76
16	Rayagada Autonomous College, Rayagada,	Rayagada	Category A	1056	91.9	86
17	Gunupur College, Gunupur,	Rayagada	Category A	669	69.5	204
18	Maa Markama Plus Three College,Bissamcuttack	Rayagada	Category A	282	33.7	187

[44] Colleges below 75% enrolment are highlighted

Factors influencing enrolment

1. Enrolment increased after increase in reservation of seats in 2015

As stated above, the reservation policy was revised in 2015 and the state government has increased the reserved seats to 22.5% for ST students and 16.5% SC students. This has been one of the enabling factors in the rise in enrolment rates of students especially from disadvantaged communities.

During Focus Group Discussions (FGDs) with faculty it was observed that the percentage of ST and SC students enrolled was higher than the reserved seats in few of colleges in Category A districts such as Rayagada and Koraput.[45] Higher representation of STs and SC population in these districts was cited as the reason for 'accommodating' students from disadvantaged communities under general category seats. However, students who could take admission under the general category seats had to secure higher cut-off percentage than set for ST, SC students. On the contrary, in Khurda, admission of SC & ST categories of students was much less than the sanctioned posts[46]. Faculty member also mentioned that the application process is same for all students across the state. Colleges do not have a role in this process so there is no segmentation of either applicants or colleges as Tribal/Non tribal and Urban/rural. This, in several instances, leads to students getting admitted to colleges in other districts. In such cases, they prefer to drop out because they also work as farm hands and such immediate sources of income, however marginal/temporary take precedence. This also point towards the unwillingness amongst students from districts with high share of SC and ST population to migrate. Interactions with staff also brought out the fact that a large proportion of the population in such districts are land-based poor who are attached to land as an economic resource for their livelihood.

2. **Factors influencing enrolment vary by gender:**

All colleges, especially in tribal areas, across districts reported lower gross enrolment of girls than boys over the period of last 2-3 years. However GER for both continues to be below the national average. In FGDs conducted across 18 colleges and 2 universities, the reasons for drop-outs after +2 or not enrolling in higher education differ vastly for both girls and boys.

Reasons reported by Boys FGDs	**Reasons reported by Girls in FGDs**
• Course lacks relevance or does not provide them with employment opportunities	• Parental attitude, • lack of information • mobility/security concerns • Security concerns related to staying in hostels,

[45] As per the data provided by the colleges, in 2013, 340 SC & ST students got admission in Rayagada Autonomous College against sanctioned 137 seats. Same year in Laxmipur College Koraput 83 SC & ST students got admission against sanctioned 34 seats. Similar trend was observed in Semiliguda College and Government College Koraput in 2013.

[46] In Godabarish college, only 41 SC & ST students got admission against sanctioned 96 seats whereas 42 got admitted against 81 seats in Kunja Bihari College Baranga. Similar trend was observed in Maharishi College of Natural Law, Bhubaneswar in 2013.

• immediate availability of seasonal or temporary jobs, discomfort with the chosen subject • Fear of English	• daily commute which proved to be a financial burden • unwillingness of parents and relatives, • community-specific belief systems restrict girls to step out of the house at certain time of the year, • Marriage and other community pressures. • Fear of English

3. Hostel facilities

ST & SC Development, Minorities & Backward Classes Welfare Department creates hostel facilities for ST, SC and OBC students in HEIs having sufficient land for infrastructural expansion.

Among the colleges visited, 7 out of 18 colleges do not have hostels. Out of remaining 11 colleges, one college each has hostel facility only for boys while another college has only for girls. 7 colleges provide hostel facilities to both boys and girls. Girls' hostels in Semiliguda College and Laxmipur Degree College were found non- functional due to poor infrastructure and security. In general, almost 82% students participating in FGDs in colleges from districts with high SC and ST population have reported inadequate space in hostel rooms, poor hygienic condition, kitchen facilities and low quality of food in most of the colleges.

AISHE survey 2015-16 also captures information related of hostels availability and their utilization pattern. Comparative status of hostels availability and their utilization in six middle region states have been tabulated in Table 18:

Table 18: Comparative status of hostels availability and their utilization in six middle region states

State/ District		Bihar	Chhatisgarh	Jharkhand	Madhya Pradesh	Odisha	West Bengal
Boys Hostel	Intake	32962	25224	37362	76713	119821	101130
	Residing	21675	16465	29629	51054	92845	74494
	Percentage Utilization	66%	65%	79%	67%	77%	74%
Girls Hostel	Intake	25142	38277	18087	76250	102367	70984
	Residing	15569	25632	13721	48808	79056	46173
	Percentage Utilization	62%	67%	76%	64%	77%	65%
Total Hostel	Intake	59526	63744	56695	156126	224106	175211
	Residing	37960	42284	44254	101661	173237	123535
	Percentage Utilization	64%	66%	78%	65%	77%	71%

***Source**: All India Survey on Higher Education (2015-16)*

At national level utilization of hostels is 66%, 62% and 62% for Boys, Girls and Others hostels respectively. In Odisha it is 77% for Boys, Girls and total hostels. So as per the survey the utilization of hostels in Odisha is better than the national levels. Among middle region states, Odisha is slightly behind in the utilization of hostels for boys and total hostels but better in girls' category.

4. Initiatives taken to improve students employability

Language labs were present in 67% of the colleges to provide training to their students on spoken English. However, during interactions with students (65%) most of the labs have been reported non-functional because of lack of funds and trained staff. Basic Computer Education is also provided to students in some colleges to enhance their employability.

Few colleges provide vocational courses but those are under self-financing scheme in which students enrolled in graduation / post-graduation courses can't participate.

It was found during the course of FGDs, that most colleges as per UGC guidelines have Career Counselling and Placement cells but in most of institutions, these are non-functional because of the shortage of human resource and funds. However colleges conduct group career counselling session for their students by inviting bank officials and official of government departments.

Overall it has been observed that HEIs do not have any linkages with District Employment Officer or participate in any job fairs. However, few colleges do have an active placement cell due to strong involvement of a particular faculty member, thus restricting it to individual efforts. Universities are found to fare better on this parameter.

Universities are found to fare better on this parameter because of their interaction with industry. Universities reported sending their students to industries for summer trainings and internships. This helps them in getting placement for their students. However both the universities during SSA acknowledged the need to improve their campus placement record.

5. Institutional interaction with society

HEIs interact with society through following ways;

- HEI for their NSS programs adopt nearby village /community to undertake various activities like creating awareness about sanitation, health and other social issues like domestic violence etc.
- Students organize plantation drive, Blood donation camps and other small development related project under NSS
- Provide information to the public about the institution, streams and courses available, their admission criteria, various government schemes for SC, ST and Girls through institutional web site / leaflet / college prospects etc.
- 22%, 67%, 89% and 78% colleges mentioned Publications, Public lectures, undertaking study visits and research projects / activities as means of social interaction, respectively.
- Both colleges and universities undertake activities for social interaction but in a piece meal manner and non-coherent manner.

6. Institutional interaction with industry

Though some HEIs do demonstrate existing linkages with industries, it was observed that such initiatives were usually restricted to personal efforts of a particular individual as opposed to a well-established system. Universities send their students to industries for summer trainings, interne ships. However there is a lot of scope to improve interaction with industry.

7. Availability of teachers

Permanent teaching staff has been reported inadequate in colleges especially in colleges belonging to districts in category A. To fill faculty gaps, colleges locally hire guest faculties to complete the syllabus. However during interactions with administrative staff and students, it has been found through interactions with students that teaching quality of guest faculties is not satisfactory. Interactions with administrative staff highlighted that they pose challenges in administration because of lack of ownership and irregularity. Situation is reported better in colleges belonging to Category B, though gaps in availability of permanent teaching staff exist there also.

With regard to Pupil Teacher Ratio during last 5 years, Odisha compares favourably national ratio. The comparative status of this has been tabulated in Table 19:

Table 19: Comparative status of Pupil Teacher Ratio Odisha against India during last 5 years

State	All Institutions		University & Colleges		University & its Constituent Units	
	Regular & Distance Mode	Regular Mode	Regular & Distance Mode	Regular Mode	Regular & Distance Mode	Regular Mode
India						
2015-16	23	20	24	21	37	16
2014-15	23	21	24	22	37	15
2013-14	24	21	25	21	41	16
2012-13	23	20	24	21	41	16
2011-12	23	21	24	21	42	16
Odisha						
2015-16	21	20	23	22	24	16
2014-15	20	19	21	20	21	14
2013-14	19	18	20	19	22	14
2012-13	19	18	20	19	20	13
2011-12	21	21	22	21	24	16

Source: All India Survey on Higher Education (2015-16)

It is important to highlight that the state government is aware and sensitive to the issue and has recently hired 1625 teachers in aided colleges and had initiated the process of hiring 352 for degree colleges. Additionally request has been sent to Odisha Public Service Commission to recruit 168 teachers for model degree colleges.

Further, HEIs supported under OHEPEE will sign a MoU with the HED guaranteeing to reduce the vacancy of staff from the present 26% (on an average) to 5% through utilizing funds received under the IDGs. This proposed intervention will bridge the existing gap to a huge extent.

3.4.3 Governance and Management

NAAC accreditation

HED encourages HEIs for acquiring NAAC accreditation which is based on seven criteria to assess academic and administrative aspects of Higher Education. It has organized State level masters training workshop in which selected staff of colleges and universities received training for NAAC accreditation. Those trainers then conducted training in their respective districts with the support of Regional Directorate. Internal Quality Assurance Committee (IQAC) was found in each HEI. This committee is entrusted with responsibilities of preparing all the documents related to NAAC, corresponding and communicating with the council for facility visit of the team, providing training to staff on quality aspects, collecting students feedback, undertaking internal audits and taking corrective actions.

Out of the 18 sample colleges, 15 (83%) are NAAC accredited while the remaining three are in the process of getting it. Grade wise breakup of 15 accredited colleges has been depicted in the following pie chart;

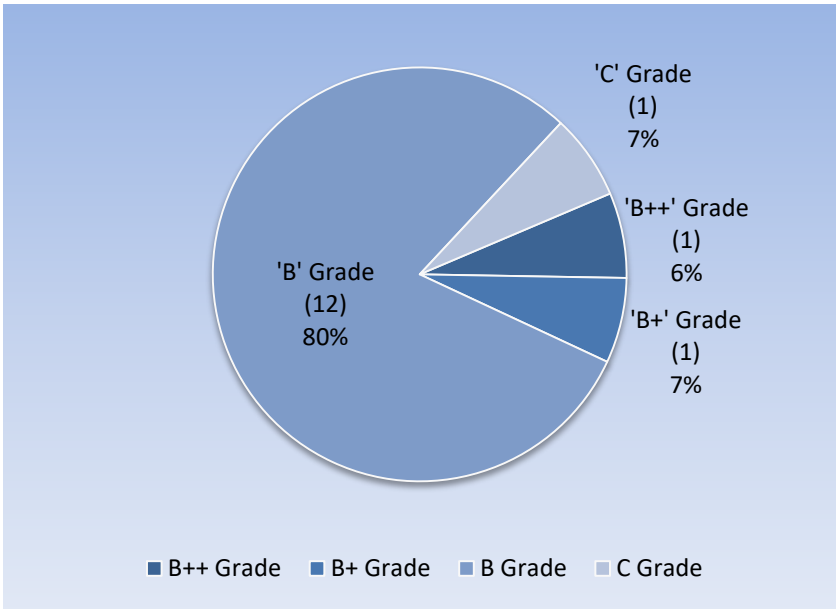


Figure 4: Distribution of NAAC accredited Colleges of the sample as per their grades

So 80% (12) of NAAC accredited Colleges of the study sample are with 'B' grades followed by 7% (1) each of 'B+' and 'C' grades. Only one college in the study sample is with 'B++' grade.

Governing and Executive Body

Governing body has been reported in 94% colleges having on an average 11 members per institution. All the Governing Bodies reportedly have current / Ex. MLAs, MP nominees, Vice Chancellor nominee, HED nominee, representatives of ST; SC and minority communities and

educational expert. In two colleges it was found that the tenure of the governing body has expired but the new one has not been constituted yet.

The presence of an executive body has been reported by 39% colleges visited during the ESSA. However except one college all other mentioned that either their governing body is the Executive body or it has been constituted from the members of existing Governing Body. One college of tribal area reportedly has only the Executive Body consisting of District Magistrate (DM), Principal, Senior Faculty, UGC nominee, Industry nominee and educationalist.

Universities have Senate, Academic Council and Syndicate to govern the institution. Both the universities have these core groups.

The frequency of general body meetings in colleges has been quarterly, half yearly and annually in 22%, 39% and 28% colleges respectively. About 22% of colleges also mentioned meeting frequency 'as and when required'. Senate members in Universities reportedly meet once in a year and as per the requirements.

With regard to having an institutional roadmap, 83% colleges reported having Vision and Mission Statements and Strategic goals while 44% also have Operational Goals. Both the universities have these.

Implementation and monitoring at institutional level

HEIs delegate their power to different committees and Bursars for implementation and monitoring. As evident from the below table, views of colleges varied to an extent that no clear trend emerged. Universities however mentioned their complete authority over these aspects except for the financial audit which is partially controlled by them.

Table 20: Status of implementation and monitoring in colleges

	Complete	Partial	None
Developing Institutional Development Plan (IDP)	39%	33%	28%
Forming disciplinary committee for the			
Oversight of the conduct of local officials	28%	28%	44%
Service delivery oversight	33%	17%	50%
Monitoring committee for day-to-day business	56%	17%	28%
Audit committees for undertaking			
Academic Audit	56%	17%	28%
Financial Audit	44%	11%	44%
Administrative Audit	50%	22%	28%

Safeguarding the interests of vulnerable sections

Universities mentioned their complete authority in undertaking initiatives such as to make study material in local language and providing hostel facilities to students of minority population. They have partial control over making specific provision for the advancement of

any socially and educationally backward classes or providing them stipends. Colleges seem to have no clear decision

Table 21: Status of safeguarding the interests of Vulnerable Sections in Colleges

	Complete	Partial	None
Make special provision for the advancement of any socially and educationally backward classes	22%	33%	44%
Making study material in local language	17%	33%	50%
Provide stipends to women / tribal population / minority population	6%	17%	78%
Provide hostel facilities to women / tribal population / minority population	44%	11%	39%

Grievance Redressal Mechanism

The Program lays considerable emphasis on proactive multi-stakeholder engagement through a free, prior, informed consultative process involving relevant stakeholders (students - girls & boys, faculty, DLCs and admin staff. Institutions are required to execute multi-stakeholder consultations as a part of the IDP preparation process. The purpose of the consultative approach is to capture diverse experiences, assess lessons learned through implementation of existing government policies at the state level, and outline methods and entry points to provide a more systematic and results-focused approach towards beneficiary engagement.

The ESSA preparation, included a workshop to share the findings of ESSA (January 30, 2017 at Khariar). Another workshop will be organized before Appraisal to secure buy-in from the Borrower/HED/GoO on the recommendations and agreed actions.

The Grievance Redressal Mechanism (GRM) at the HED has a fairly robust online portal (http://cmgcodisha.gov.in/) and Grievance Redressal Cells and Sexual Harassment Committees exist in universities and most colleges. However anonymous complaint boxes were missing in some institutions. Most colleges follow the practice of verbal registering the complaint to authorities. Since the record of complaints received was absent in most of the colleges so it is difficult to comment on the functionality of Grievance Redressal Cell and Sexual Harassment Committee. Most colleges follow the practice of verbal registering the complaint to authorities. Since the record of complaints received was absent in most of the colleges, it is difficult to comment on the functionality of Grievance Redressal Cell and Sexual Harassment Committee.

All the four autonomous colleges have the Grievance Redressal system and the practice of maintaining the records of complaints received. Timeline mentioned for redressal of complaint was 24 hours.

HEIs have mentioned the name of the members of these committees in their institution information booklet. However interaction with students revealed that they are less aware of Grievance Redressal cell and mechanism to get their complaints redressed.

Awareness about legal and regulatory framework: *Including laws related to social issues*

HEI administration was assessed for their awareness about the applicable legal and regulatory framework. Cumulatively colleges were aware of the following acts/rules;

- Odisha University First Statute,1990
- Odisha Education Act,1969
- Odisha Education (establishment, recognition, management of pyt college) rules, 1991
- Odisha Education Service recruitment rules, 1990 & 1974
- Odisha aided education institution accounting procedure rule, 1985
- Odisha aided education institution employees GPF rule, 1983
- Odisha aided education institution retirement rule, 1981
- Odisha Education (leave of teachers and other employees) rules, 1977
- Sexual harassment prevention cell
- Anti-raging cell
- Grievance redressal cell
- RTI cell
- IT rules
- UGC notifications

Universities mentioned Odisha Universities Administrative Manual & Odisha Universities Finance Manual.

Overall it has been found that the awareness level and knowledge about the applicable acts, rules and regulations is adequate among the administration of all the HEIs.

Mechanism for liaising with State and University level

Colleges have administrative linkage with Higher Education Department who provides resources, financial aid, guidelines for various aspects of administration and governance to HEIs besides setting up the policy. HED communicates with HEIs through letters sent on e-Dispatch web application.

UGC provides various guidelines to HEIs for inclusion, accessibility and improvement in quality education besides providing financial assistance for improving quality of education and undertaking infrastructural expansion and maintenance.

Colleges have academic linkages with University who provides curriculum, syllabi and other instruction related to academics. Universities start new courses; undertake visits to colleges to inspect learning environment in colleges and giving affiliation to them. Universities may recommend HED to cancel the recognition of any college. Examinations are taken by the universities. Although autonomous colleges have the authority to revise curriculum & syllabi, undertake exams and declare results but still they need approval from the academic council of the university. Liaising between the two happens through official letters and meetings.

Colleges invite each other for participating in seminars and workshops. Inter college liaising happens through official letters and meetings.

Faculty Development Initiatives taken by HEIs

At state level, Performance Tracing Cell (PTC) plans the capacity building initiatives for institutional staff. Although the training calendar and topics are finalized in discussion with the Regional Directorate Offices, but the training programs are mainly finalized keeping in view the HED's initiatives for improvement of Higher Education quality and governance of HEIs.

Broadly PTC with the support of Regional Directorates undertakes training related to the following;

- Improving quality of Higher Education
- Planning and process for NAAC Accreditation
- Leadership Development Training
- Orientation to Credit Based Choice System (CBCS)
- Training of accounts staff on e-modules, CAPA etc.
- Training for implementation of CBCS

Besides this based on the information collected routinely by the HED, monthly reports of District Level Consultant (DLC) and recommendations of Directorate of Higher Education, various types of training sessions are planned. PTC conducts training at state as well as regional level. Regional Directorate provides assistance in the organization of training sessions at regional level as well as in the selection of appropriate staff from HEIs as trainees.

Besides this HED provides 14 days of induction training to newly appointed teachers which includes pedagogy methods, classroom management and information about various administrative processes and procedures. This is followed by UGC sponsored refresher courses for teachers once in three years. However teachers have to apply themselves for these refresher courses. Promotion of teachers depends upon the number of refresher courses undertaken by them so there is an incentive attached to refresher courses. Universities and Colleges reported following initiatives for their Faculty Development:

Table 22: Faculty Development Activities undertaken by HEIs

	Efforts made by HEI	**Percentage of colleges**
Efforts for fostering climate for encouraging faculty development	Formal Committee to decide about seminars / workshops	50%
	Reducing teaching load on the faculty going for development program	17%
	Providing financial grant to the faculty going for development program	6%
	Logistic support/ pay to the faculty for living expenses	11%
	Giving Sabbatical to faculty	6%
	Recognition/Award /Benefits to the faculty	39%

	Efforts made by HEI	Percentage of colleges
Other activities undertaken for faculty capacity building	Workshops: organizing / sending faculty to attend workshops	83%
	Seminars/Discussions: organizing /sending faculty to attend	72%
	Mentoring: by the senior faculty	44%
	Online courses: Encouraging faculty to undertake online courses	11%

As evident from the table, Universities and Colleges organize seminars and workshops or HEIs send their staff to various state and national seminars and workshops for their capacity building.

3.4.4 Residual Gaps / Risk Analysis

Key concerns and gaps

- Government increased the reservation of seats for SC and ST students to 16.5 and 22 percent respectively in the year 2015. About 95% of the increase in seats have been filled pointing towards satisfactory utilization of capacity. However, as shown earlier while admissions against sanctioned/reserved seats in category A districts tend to spill over into unreserved seats, reserved in Category B districts such as Khurda continue to remain vacant. As highlighted in FGDs, colleges have to approach multiple heads/sources for availing different kinds of provisions. (HED, University, UGC, NAAC, SC&ST Dept etc) , In category A districts , HEIs do not have the capacity to monitor and implement measure linked to varied sources/heads. The provision under OHEPEE where each cluster of IDG will have a dedicated mentor/coordinator from the extended PIU and performance auditor will prove supportive.
- As highlighted above, the variations across districts in terms of GER throw up some relevant gaps. Districts, such as Malkangiri, which fall under Category A, registered substantial progress over the last five years, however they still continue to fall behind compared to districts with lower percentage of SC and ST population. Within districts, the progress of SC and ST sub-groups especially ST females, lags behind the progress in enrolment achieved by the entire cohort.
- As highlighted in FGDs, permanent teaching staff has been reported inadequate in colleges especially in colleges belonging category A. To fill faculty gaps, colleges locally hire guest faculties to complete the syllabus. However, during interactions with administrative staff and students, it has been found that teaching quality of guest faculties is not satisfactory. Also they pose challenges in administration because of lack of ownership and irregularity.
- However, as discussed earlier, under OHEPEE colleges will have the possibility to finance teacher vacancies (contractual appointments) with the IDGs. Furthermore, the results framework has an intermediate indicator on “percentage of faculty vacancies

filled with regular faculty in selected institutions (including through contractual appointments)".

- Regarding usage of hostel facilities, girls cited security concerns and poor sanitation facilities in some colleges belonging to Category A districts. Parents appear to be reluctant to fund travel allowance for girl students and hostels are viewed as "not secure and with need for a warden and gatekeeper". To bridge this gap, colleges could consider subsidizing travel allowance for girl students (ST girls) under their IDP.
- One of the major findings of the ESSA report is the lack of information amongst students at +2 level regarding the courses offered by colleges, costs of these courses, application procedure, cut-off percentage and career development opportunities. This information asymmetry is more prominent among girls as compared to boys. Since a considerable number of students from the Category A districts are first-generation college-goers, they need to be supported by 'nudges'[47] at various steps of the admission process through at least till the first semester.
- *Language labs and classes under the proctorial system:* The second component which is related to information asymmetry and which leads to low enrolment is the difficulty level of courses offered at the +2 level vis-à-vis degree courses. Students, especially from Category A districts feel that there is huge gap and are filled with doubts about their difficulty to cope with the technical aspects of the subject. Also, the fear of English is prevalent across streams (arts, science) and something which is experienced by both girls and boys. During FGDs, students demanded for a functional language lab in colleges. Students were also sensitive about the communication gap between teachers and themselves.

For the purpose of assessment of social risks, we define social inclusion[48] as;

- The process of improving the terms for individuals and groups to take part in society
- The process of improving the ability, opportunity, and dignity of people, disadvantaged on the basis of their identity, to take part in society

OHEPEE is expected to support around 70 HEIs (first round of selection) of the state including institution located in Category A districts. In order to "improve students' equitable access to and quality of higher education institutions", the Program will support Higher Education Institutions (HEIs) through Institutional Development Grants (IDGs. The majority of the activities under this results area will be implemented at the institutional level. These include enhancing equity through provision of faculty support for weak students through the proctorial system,, induction classes for ST and SC students; short-term faculty training; support to starting new degree programs, diploma and/or certificate programs; wifi/smart campus; language labs; design and offering of CBCS courses; curriculum development (for autonomous colleges); establishment of libraries/e-resource centers; community outreach activities; employment oriented skills development courses; entrepreneurship programs;

[47] Nudges: Nudge theory (or Nudge) is a concept in behavioural science, political theory and economics which argues that positive reinforcement and indirect suggestions to try to achieve non-forced compliance can influence the motives, incentives and decision making of groups and individuals, at least as effectively – if not more effectively – than direct instruction, legislation, or enforcement.

[48] Inclusion Matters: The World Bank

college-industry partnerships; career and counselling centers; academic exchange; enhancing capacity for R&D activities including laboratories; minor civil works; and furniture and equipment. Hence, it will directly work towards improving the enrolment of students from SC/ST communities in higher education in the state.

Enhanced participation is likely to result into positive spill-over effects such as improved percentage of graduates, improved employability and diversified employment opportunities. However, despite the planned interventions, there exist some social risks associated with the project principally due to external factors. Below table aggregates the risks anticipated from the program and propose measures to mitigate those risks.

Table 23: Residual Gap / Risks analysis and mitigation plan

Risk Description	Risk Management
High Drop-out rate at +2 level: The drop- out rate across category A districts continues to remains high due to a conflux of socio-cultural barriers. This effects the enrolment in higher education institutions across the state, but especially in districts with high SC and ST population.	Strong outreach programs need to be developed at the block level to sensitize parents and students about the relevance of higher education by the government. However, the strategy will be to focus primarily on the pull factor by improving the quality and accessibility of the HEIs. This is likely to have a positive impact on the GER in higher education institutes.
Lack of perceived relevance in HE: Students belonging to vulnerable groups in districts with high share of SC/ST population are first generation college-goers. Adding to this challenge is students' (especially ST boys) reluctance toward HE and perception of lack of relevance in degree courses.	Under OHEPEE, it is recommended that a proctorial system needs to be developed where a faculty acts as a mentor for a small group of weak students. The HEIs need to prioritize focus on improving their fluency in English, +2 mathematics, knowledge related to the subject and improvement in basic subjects. The expert committee to be constituted by the HED will examine the factors that cause drop out after +2 in districts with high SC and ST population and make recommendations towards introduction of market-linked skills, credit courses linked to projects with an aim to make higher education more relevant to students in districts with high SC and ST population. Establishing entrepreneurship incubation cells will also be considered under OHEPEE.

Risk Description	Risk Management
Students are sensitive toward **the communication gap** between teachers and themselves. Additionally, posting teachers from non-tribal areas to HEIs in districts with high SC and ST population may result in linguistic and cultural gaps.	Formal feedback mechanisms and informal student-faculty meetings will be established.
ST girls: Girls belonging to SC and ST communities face an intersectionality of barriers which mostly stretch beyond the scope of individual decision making. In the case of girl students, enrollment and completion of degree courses can be attributed to a host of external factors such as willingness of parents and relatives, marriage, lack of community consent and safety and mobility related issues.	The HED has taken several initiatives such as self-defense courses for girls, scholarships, counselling to increase the enrollment and retention of both girls and boys. The OHEP recognizes the existing gender differentials that emerge as a result of the wider social context and aims to improve equitable access to disadvantaged groups, particularly girls from SC/ST communities since they face an intersectionality of barriers. Consequently, the DLIs related to enrollment and faculty training will collect information disaggregated by gender.
Information asymmetry at +2 level: Students of Higher Secondary Education cohort in the districts with high population of SCs and STs are unaware of the structure of HE courses, associated costs, scholarships available and other related information. Misinformed choices could result in disenchantment with studies and subsequent dropouts.	OHEPEE will focus on outreach activities to reach out to students of Higher Secondary Education. Under this, students will be informed about the streams and courses available during the Higher Secondary Education and their future prospects. This will help students to pick the right stream and subjects resulting in timely completion of graduation.
Excessive focus on government jobs and competitive exams: In districts with high SC and ST population, students and their parents perceive HE as a means to securing a government job after graduation. Almost 80% of the students interviewed wished for a government job and were preparing for competitive exams.	The program will ensure that Skill Development and Entrepreneurship is promoted in HEIs. The streamlined focus by the state government on skills will help mitigate the associated risk to a considerable extent. Developing strong alumni networks, exposure visits to industries, guest talks by local entrepreneurs, personnel working in the IT and other tertiary sector industries will act as nudge factors in gradually evolving the existing thought process among students and parents.

Risk Description	Risk Management
Participatory Decision Making: non-involvement of the staff in quality and governance related aspects of the institution fail to generate a sense of ownership. As a result, planned micro-level initiatives remain partially implemented.	OHEPEE ensures that the participatory decision making in letter and spirit, will facilitate institutions to develop their IDP in consultation with all the stakeholders. It will promote ownership and effective implementation of the IDP.

3.4.5 Assessment of Program Consistency with Core Principles in the Policy on Program For Results Financing

This chapter provides an analysis of the alignment of the OHEPEE Program's systems with the core principles of the Bank's Program for Results instrument.

Core Principle 4

Assessment of to the degree to which the Program Systems manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assist the affected people in improving, or at least restoring, their livelihoods and living standard.

- **Applicability:** To increase access for ST/SC students to HE in underserved areas, the HED will launch a pilot to open five degree colleges in districts with high Sc and ST population to be owned and managed by not-for-profit organizations. The establishment of the colleges will be done on government-owned land. The HED has identified 5 block-heads that have significantly low provision of degree colleges and that do not have any degree colleges, where students either travel to colleges in other blocks or do not pursue HE. The distance between the closest degree colleges and the higher secondary schools in these unserved blocks ranges between 20 and 80 kilometers.
- **Strengths**: Exclusion of high risk activities have been made in the Environment and Social Assessment Report in which 'construction activity deemed illegal under Indian laws or regulations or international conventions and agreement' has been excluded under the project.
- **Gaps and Risks**: There will be no acquisition of land from title-holders or non-title holders (squatters, temporary shelters) under OHEPEE. Piloting of colleges, activities related to upgradation of infrastructure will take place on government land. Sites for the new colleges will be identified and screened to mitigate risks related to presence of squatters, temporary shelters, in accordance with the exclusion list before the program negotiations.

Core Principle 5

Assessment of the degree to which the Program Systems give due consideration to cultural appropriateness of, and equitable access to, program benefits giving special attention to rights and interests of Indigenous Peoples and to the needs or concerns of vulnerable groups.

- **Applicability**: Article 15 and Article 46 of India's constitution provide special considerations for ST/SC and other disadvantaged groups and ensure equal rights to them regardless of caste, region, religion, etc. The Persons with Disabilities (Equal

Opportunities, Protection of Rights and Full Participation) Act, 1955, and the Rehabilitation Council of India (RCI), 1992 (Amended in 2000) safeguard the interest of PwD.

- **Strengths**: The key strength lies in The National Education Policy and Draft Education Policy of the state both have enough provisions to ensure equitable access to the vulnerable groups for pursuing their educational goals. The government has increased the reservation of seats for SC and ST students to 16.5 and 22 percent respectively in the year 2015. About 95% of the increase in seats have been filled pointing towards satisfactory utilization of capacity.
- **Gaps and Risks**: Students of Higher Secondary Education cohort in the districts with high population of SCs and STs are not properly informed of the structure of higher education courses, associated costs, scholarships available and other related information which is reflected in the low enrolment, low GER and dropouts. Misinformed choices could result in disenchantment with studies and subsequent dropouts. Girls belonging to SC and ST communities face an intersectionality of barriers which mostly stretch beyond the scope of individual decision making. In the case of girl students, completion of degree courses can be attributed to a host of external factors such as willingness of parents and relatives, marriage and other community pressures.

  The variations across districts in terms of GER throw up some relevant gaps. Districts, such as Malkangiri, with high share of SC and ST population registered substantial progress over the last five years, however they are expected to continue to fall behind compared to districts with lower percentage of SC and ST population. Within districts, the progress of SC and ST sub-groups especially ST females, lags behind the progress in enrolment achieved by the entire cohort.

<u>Core Principle 6</u>

Assessment of to what degree the Program Systems avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes

- **Applicability:** There are areas beset with conflicts in Odisha, commonly known as Left wing Extremism (LWE) areas. However, the Project will not result in exacerbating conflicts. Rather, efforts to make Higher Education accessible, thus ensuring their increased participation in higher education.
- **Strengths:** Government of India has provided the financial assistance to open college in such areas. State Government is already developing 8 Model colleges which will help students of these areas. Under OHEPEE, the GoO plans to actively engage and support colleges located in such districts.
- **Gaps and Risks:** OHEPEE is sensitive to the existing conditions in certain blocks that are classified as LWE districts. The program is proactive in supporting institutions in unserved areas and improving the participation rates of students in HEIs. One of the major concerns is associated with the high turnover of quality teachers in these areas which has an impact on student participation and performance. Recommendations have been made to ensure that presence of quality teachers could be increased in HEIs located in such areas and districts with high SC and ST Population. The MoU which will be signed by the DHE and HEIs will ensure that issues related to faculty retention are addressed under OHEPEE.

3.5 Consultation during the SSA

This chapter provides details on the consultation, disclosure and grievance redress processes relating to (a) conducting the SSA, and, (b) the program activities.

3.5.1 Consultation during the SSA

During the SSA, multiple consultations were held at state, district and HEI levels. These were in the form of semi structured interviews and group discussions. The multiple stakeholders with whom consultations were primarily through meetings and semi structured interviews included Higher Education Department (HED), District level coordinators and District level consultants.

At HEI level, consultations with Head of Institutions were held using semi structured interviews. However discussions with faculty members, students and their parents were held as Focus Group Discussions.

The assessment findings and recommendations presented in this document draw from these consultations.

3.5.2 Consultation on the Draft SSA

State organized a consultation workshop on the preliminary finding of the SSA on Jan 30, 2017. It was held in Khariar (Autonomous) College Khariar of Nuapada district which is one of the backward districts of Odisha. This workshop had participants that included the Principal Secretary, Higher Education Department, representatives from Colleges, Universities and The World Bank. List of stakeholders is given in the Annexure 4.

The day long workshop discussed about the issues related to Institutional Development Plan (IDP), projects which can be taken up by educational institutions under OHEPEE and existing issues with HEIs. Presentation on the initial findings of the SSA was made and later deliberated. The salient points of discussion and the decisions taken in the workshop are presented below:

Need to strengthen the human resource at different levels: Stakeholder agreed that there is dire need to strengthen the human resource at different levels

It was informed to the audience that HED has already hired 1625 teachers in aided colleges and had initiated the process of hiring 352 for degree colleges. Additionally request has been sent to Odisha Public Service Commission to recruit 168 teachers for model degree colleges.

Need clarity on improving institutional performance on social aspects: Representatives stated that they also agree that educational institution should do more for the upliftment of backward communities. With the increase in the reservation of seats for ST and SC students, availability of incentive schemes of the state government and increase in number of sanctioned seats at each college, enrolment of students have already increased and now number of girls is more than boys in many colleges. Institutions, on their part, are also providing financial help to poor students, books to needy students and undertaking extra classes (proctorial system).

It was suggested that besides all the mentioned things, institutions should make efforts to improve their brand image through performance which will make them desirable institution among students for pursuing Higher Education. This will increase the confidence and moral of their students which will help them in all walks of life. Secondly institutions need to start skill development projects and encourage students to take up entrepreneurship. This will generate more employment in the nearby communities. Thirdly colleges need to connect with the industry so that hand on training and later jobs could be provided to students.

The orientation of institutions on social aspects of higher education has been recommended in the report.

Disclosure of the findings of the report

The draft report of this SSA was shared through a State level stakeholder workshop organized in April 2017. Relevant suggestions from the stakeholder workshops have been taken into account.

3.5.3 Disclosure of the Draft and Final ESSA Reports

The draft report of the SSA has been disclosed on the website of the Higher Education Department, Government of Odisha and on the World Bank's website prior to the conclusion of Appraisal. The final report of the ESA will also be disclosed on the website of the Higher Education Department, Government of Odisha and on the World Bank's website after negotiations and prior to the Board approval.

4. Recommendations and Action Plan

Based on the Environment and Social Systems Assessment, the following are the recommendations for the Program Action Plan.

4.1 Recommendations and Action Plan: Environment Systems

4.1.1 Exclusion of high risk activities

The following activities will be excluded from the program in view of the high environmental risk:

- Construction within all protected/forest areas (including National Parks, Wildlife Sanctuaries, Elephant/Wildlife Corridors, Tiger Reserves, Elephant Reserves, Biosphere Reserves), and, within Eco-Sensitive Zones for which final or draft notifications have been published by the Ministry of Environment, Forests and Climate Change, Government of India.
- Construction or demolition within 300 meter radius of protected monuments identified by the Archeological Survey of India or Odisha State Archeology Department.
- Construction of new buildings of more than 20,000 sq. m. area.
- Construction, renovation or dismantling works involving 'asbestos containing materials'.
- Procurement of equipment containing radioactive material or hazardous material[49].
- Activities requiring land acquisition or resettlement and rehabilitation, irrespective of title.

4.1.2 Recommendations for strengthening Environment Management in the OHEPEE Program

Incorporating Environment Management in the Memorandum of Understanding (MoUs)

Each HEI should undertake an environmental management audit in order to identify the critical gaps and issues pertaining to environmental management in the institution. Based on this an action plan for implementing the required actions needs to be developed. This requirement needs to be included in the MoUs (Memorandum of Understanding) with the Universities/Colleges receiving the IDG. An indicative format for the EAMP has been presented in Annexure 1 D. For HEIs that have already developed the IDP, the IDP needs to be reviewed to ensure that the activities in the EAMP are adequately covered and funded. If required, the IDP needs to be suitably updated to reflect the EAMP actions and fund requirements. Training to the HEIs on the EAMP is to be delivered as part of the on-going trainings. Guidelines on preparation of the EAMP and relevant evaluation criteria are to be included in the operational manual for the Institution Development Grant (IDG).

[49] Hazardous material refers to chemicals listed in the Public Liability Insurance Act, 1991.

Strengthening EHS aspects in construction bid documents

The bid documents of the Construction Agencies will be strengthened to include appropriate references to the legal and regulatory requirements on environment, health and safety (EHS) management. The EHS aspects included in the bid documents would be proportionate to the nature and scale of the work being undertaken. An indicative list of key legal and regulatory requirements on EHS that needs to be included in the bid documents is provided in Annexure 1 F.

Strengthening monitoring systems on environmental management

Strengthening institutional and monitoring systems of the HED and HEIs on environmental management aspects through the following actions:

- Designation of an Environment, Health & Safety (EHS) Officer in the Program Monitoring Unit (PMU) at the state level, and, forming/assigning the Building Management Committee within HEIs[50] the role to facilitate implementation of environment management activities. The EHS Contact Point in the PMU will have relevant academic background and experience (civil engineering, environmental engineering, architecture, etc.). S/he will be responsible for ensuring that activities on the exclusion list are not supported as part of the Program, for monitoring EHS aspects of existing infrastructure, providing and arranging for training and, for coordinating with the construction agencies on EHS aspects of new infrastructure. The Building Management Committee in the HEIs will focus on development and implementation of the Environmental Audit and Management Plan as part of MoU.
- Monitoring of EHS aspects of civil works in the pre-construction, construction and post-construction phases by the Building Committee of the HEI. An indicative checklist for this monitoring has been provided in Annexure 1 D. Based on this, checklists relevant to the three stages of planning/design, construction and operation/ maintenance, and, proportionate to the nature and scale of the work being undertaken, are to be prepared by the PMU, HED in consultation with the construction agencies. The information from this monitoring needs to be collated at the state level.
- Monitoring of environmental management aspects of HEIs through the District Level Consultant/Cluster Resource Persons of the HED. An indicative checklist for this monitoring has been provided in Annexure 1 G. Based on this, checklists proportionate to the nature and scale of the work being undertaken are to be prepared by the PMU in consultation with the construction agencies. The information from this monitoring needs to be collated at the state level (as part of the College Infra Project).

Capacity building on environmental management

Capacity building of relevant staff of Universities, Colleges, HED, Construction Agencies and Contractors to ensure awareness of and adherence to the existing legal and regulatory

[50] A corresponding Building Management/Environment Management Committee comprised of students would be effective in facilitating student involvement.

provisions and guidelines/requirements on EHS aspects. The capacity building programs to be organized include:

- Orientation to staff of HEIs on the 'Environmental Audit and Management Plan' as part of the on-going trainings on IDP development/appreciating role and responsibilities as part of the MoU to be signed.
- Orientation to the Building Committees of HEIs on the EHS aspects to be monitored before, during and after construction. This will be organized by the HED after approval of the IDP, signing of the MoU and, prior to selection of the construction agency.
- Orientation to civil works contractors on the EHS laws and regulations to be complied with before, during and after construction. This will be organized by the construction agencies based on the procurement/award of works calender.

4.1.3 Action Plan for the OHEPEE Program

Action Plan on Environmental aspects is as given below:

Table 24: Action Plan on Environmental Aspects for the OHEPEE Program

Action	Responsible Agency	Time-frame	Completion Measurement
Incorporating Environmental Audit and Management Plan (EAMP) as part of the MoUs with selected Universities/Colleges	HED (PMU) and HEIs	By Program Effectiveness	Inclusion of EAMP actions in MoUs with selected universities and colleges.
Strengthening EHS aspects in bid documents of the construction agencies	Construction Agencies and HED (PMU)	Prior to initiating bidding process	Inclusion in bid documents of the Construction Agencies.
Strengthening institutional and monitoring systems of the HED and HEIs to adequately capture environmental dimension through designation of an Environment Officer in the PMU and assigning EHS functions to the	HED (PMU) and HEI	HED – on commencement of the program HEI – From IDP development onwards	Designation of an Environment Officer in the PMU. Issuance of guidelines on EHS aspects to the Building Management Committee

Building Management Committee with HEIs			
Capacity building of relevant staff of HED, Universities, Colleges, Construction Agencies, Contractors to build awareness of and adherence to the existing legal and regulatory provisions. EHS aspects	HED (PMU) and Construction Agencies	By HED - as part of the regular training By construction agencies – prior to commencement of the work by contractors	Inclusion of report on capacity building on EHS in the HED (PMU) annual report.

4.2 Recommendations and Action Plan: Social Systems

Focus of the OHEPEE is the inclusion of the vulnerable population in the Higher Education which is expected to result in substantial social **benefits. SSA study has estimated moderate levels of social risks associated with the program. However, existing inter-district disparities may have a bearing on the Higher Education program in the state**. Some of these relate with the inadequacies inherent in HEIs such as poor infrastructure, non-availability of adequate number of permanent teaching staff, poor quality of the guest teachers hired locally, whereas others relate to the socio economic and cultural system as a whole, all of which renders ensuring inclusion and equity a challenge.

4.2.1 Recommendations for strengthening Social Management in the OHEPEE Program

Management level

As mentioned in the different sections of the report, the state government has taken many steps to improve the access, equity, quality, transparency and governance of Higher Education. Fully acknowledging the fact that Higher Education Department is focusing on inclusion related issues and the results of its initiatives have started coming into effect, few suggestions have been made to further strengthen its efforts and ensure that the uptick of trends continues in future. Following are the suggestions:

- The HED and universities will integrate marketable skills, entrepreneurship development cells, credits linked to live/voluntary projects with higher education to positively impact the enrollment and retention of SC and ST students in higher education. These initiatives will make higher education more relevant for the students to prepare them for the job market.

Institution level

The actions outlined are applicable to both Category A and Category B districts. However, affirming to these action areas is more crucial to HEIs from Category A districts. This is

recommended with an objective to improve the inclusionary outcomes related to better enrolment, retention and completion of degree courses by SC, ST and female students.

1. **Action 1: Improving enrolment, retention, on-time graduation of SC, ST and female students The MoUs signed between the HED and** HEIs will identify two to three action steps towards improving the enrolment, retention, on-time graduation and overall performance of SC, ST and female students. The suggested action steps include:
   - **Awareness programs**
   - **Undertake prior and informed consultations with relevant stakeholders (girl students, boy students, parents and faculty)**
   - Orientation program for first year-first semester degree college students
   - Engaged mentorship through a strong proctorial system
   - Functional language labs
   - Career guidance cells
   - Provision of hostel facilities to SC and ST students
   - Provision of functional hostels with adequate safety will be explored for ST girl students.

- **Reducing asymmetries of information:** One of the major findings of the ESSA report is the lack of information amongst students at +2 level regarding the courses offered by colleges, application procedure, cut-off percentage and career development opportunities. This information asymmetry is more prominent among girls as compared to boys. The program suggests development of strong outreach/awareness programs by universities or colleges in their catchment area that cater to the information gaps faced by students at class 12 level. This will help in early decision-making among students thus positively impacting enrolment. The outreach programs could be centered around:
  -specific information about the available courses, associated costs and other miscellaneous information;
  -involving parents especially parents of girl students in such discussion to increase awareness around higher education. Since a considerable number of students from Category A districts are first-generation college-goers such 'nudge' steps will be helpful towards sustainable increase in enrolment and participation.

- **Additional support**: Early identification of students who are poor performers (and more likely to drop-out) and creating one-to-one mentorship arrangement (or even small groups) by mapping professors to students at least for one semester.
  - Doubt clearing sessions with emphasis on fundamentals of the subject will be organized
  - Encouraging group activities such as presentations, team write-ups, etc. as a part of the course structure.

- **Positive behavioral influences**: Workshops to sensitize students about the available opportunities (other than government jobs) and inculcating a sense of entrepreneurship through micro incubation centers established in colleges. This could even include documentary screening, industrial visits, developing community programs led by students, cross-state visits sponsored by the college, etc.

The objective should be to make entrepreneurial ventures, however small, as attractive as bureaucratic jobs.

*The sensitization could be extended to other relevant issues such as sanitation, hygiene, social concerns, etc.

- **Career guidance:** The ESSA report highlights the lack of perceived relevance in higher education amongst ST boys to be one of the major reasons for low enrolment and dropouts. Colleges in liaison with affiliating universities need to develop awareness regarding a varied set of career development opportunities including entrepreneurial ventures.

2. **Action 2: Functional GRM cells and students feedback mechanisms:** HEIs will ensure robustly functional GRM cells, Equal Opportunity Cells and Women Harassment Redressal Cells with adequate students and faculty representation. Along with these cells, the HEIs will also organize regular, informal interactions between students and teachers.

4.2.2 Action Plan for the OHEPEE Program

Table 25: Action Plan on social aspects is as given below:

Action	Who will do	Time line	Completion Measurement
At the institution level (Input indicators)			
HEIs: Two to three action steps (contextual prioritization) will be identified under the MoUs signed by the HED and HEIs to positively influence the enrolment, retention and on-time graduation rates of SC, ST and female students	IDP trainer, HED and the World Bank	Before the commencement of the Program	The MoUs of between the HED and selected HEIs under OHEPEE will identify two to three action steps towards improving the enrolment, retention and overall performance of SC and ST students. These may include: **Undertake prior and informed consultations with relevant stakeholders (girl students, boy students, parents and faculty)** - Doubt clearing sessions

Action	Who will do	Time line	Completion Measurement
			emphasizing on fundamentals engaged mentorship through the proctorial system - functional language labs - career guidance cells
HEIs: Ensuring functional GRM cells, Equal Opportunity Cells and Women Harassment Redressal Cells with adequate students and faculty representation	During program implementation	PMU and HEIs	Inclusion in the MoUs between the HED and HEIs universities and colleges and Annual Performance Indicators

Annexure 1: Environment System

Annexure 1 A: List of Documents Reviewed

At National level:

- Rashtriya Uchchatar Shiksha Abhiyan (RUSA) - http://mhrd.gov.in/rusa
- Ministry of Human Resource Development - http://mhrd.gov.in/documents_reports
- All India Survey on Higher Education (AISHE) http://aishe.nic.in/aishe/home
- Manual on norms and standards for environment clearance of large construction projects issued by Ministry of Environment and Forests, Government of India - http://envfor.nic.in/divisions/iass/Construction_Manual.pdf
- Guidelines and Space Standards for Barrier Free Built Environment for Disabled and Elderly Persons issued by Central Public Works Department, Ministry of Urban Affairs & Employment India 1998 - http://cpwd.gov.in/publication/aged&disabled.PDF
- Handbook on Barrier free and Accessibility issued by Central Public Works Department 2014 - http://cpwd.gov.in/Publication/HandbookonBarrier.pdf
- UGC Guidelines for
    - Autonomous Colleges during the XII Plan Period (2012-2017) (Updated as on 13-04-2016)
    - Scheme of Development Assistance to Colleges for the Construction of Buildings during the Twelfth Plan (2012-2017)
    - Discontinuation of dissection and animal experimentation in Zoology/Life Sciences in a phased manner
    - Safety of students on and off campuses of higher educational institutions
    - Guidelines for Swachh Bharat - Swasth Bharat Scheme of the UGC
    - The special scheme of Construction of Women's Hostel for Colleges during the Twelfth Plan (2012-2017)
    - Procurement, Storage, Usage and Disposal of Radioactive and other Hazardous Materials / Chemicals
- Institutional Accreditation Manual for Self-Study Report for Affiliated / Constituent Colleges, published by National Assessment and Accreditation Council
- Institutional Accreditation Manual for Self-Study Report for Autonomous Colleges, published by National Assessment and Accreditation Council
- Institutional Accreditation Manual for Self-Study Report for Universities published by National Assessment and Accreditation Council
- Various National Acts and Regulations which are relevant for the environmental management

At State level:

- Scheme guidelines of the HED 'Guidelines for Infrastructure Assistance to Non-Govt Aided Colleges' - http://www.dheodisha.gov.in/HED/PDF/IATNONGOVT.pdf
- Scheme guidelines of the HED 'Guidelines for Infrastructure Assistance to Universities and to Govt Aided Colleges' - http://dc1.dheorissa.in/NewsDoc/31-Oct-2014-10-25Guidelines%20for%20Universities%20Govt.%20Non-Govt.%20Colleges-Infra-structure.pdf

- Guidelines on Standards from the HED 'Common Minimum Standard Guidelines' - http://www.dheodisha.gov.in/Download/CMS.pdf
- Data on college infrastructure available from HED - http://dheodisha.gov.in/CIIP/ReportOnCIPDetails.aspx
- Standard Bid Documents of the Works Department to understand what EHS practices are integrated into the Conditions of Contract so that the construction contractors are legally bound to follow them.
- Disaster Management Plan of the Works Department - http://www.worksodisha.gov.in/view_document.php?id=63
- Final draft of State Higher Education Policy 2016
- Operation and Accounts Mannual, Odisha State Police Housing & Welfare Corporation Limited
- Technical Bid Documents / Detailed Tender Call Notice for works issued by the Works Department
- Bhubaneswar Development Authority (Planning & Building Standards) Regulations – 2008
- Revised OPWD Code, Road Sector Institutional Development, Odisha
- CPWD Works Manual 2014, Central Public Works Department
- Various Government orders and circulars which are relevant for ESA
- Checklist of the District Infrastructure and Quality Monitoring Cell

World Bank and Program related:

- Results in Education for All Children (REACH): Assessment of the Pilot Year - http://www.worldbank.org/en/programs/reach#4
- The Rise of Results-Based Financing in Education, 2015 - http://documents.worldbank.org/curated/en/348311468292285977/pdf/Restructuring-Paper.pdf
- Project Documents including Results Framework & Disbursement Linked Indicators
- 'Environment and Social Systems Assessment (ESSA)' undertaken by World Bank for Skill India Mission Operation - http://documents.worldbank.org/curated/en/620741473325344494/pdf/108149-EA-P158435-Box396306B-PUBLIC-Disclosed-9-5-2016.pdf
- 'Environment and Social Systems Assessment (ESSA)' undertaken by World Bank for Enhancing Teacher's effectiveness in Bihar http://documents.worldbank.org/curated/en/922501468049773248/pdf/E46730V10P132600Box385371B00PUBLIC0.pdf
- 'Environment and Social System Assessment (ESSA)' undertaken by World Bank for Skills Strengthening for Industrial Value Enhancement
- 'Environment Management Framework' for the World Bank supported Higher Education Quality Improvement Project, Madhya Pradesh

At institution level:

- Latest letter of affiliation from the parent university
- UGC 12B recognition certificate
- Latest grant certificate from UGC, RUSA and State Government

- Latest recognition / approval letter from a regulatory authority, if the HEI is offering professional courses for e.g., AICTE, NCTE, DCI, etc.
- Letter from UGC regarding award and continuance of autonomy

Annexure 1 B: Status of Compliance with National Building Code by HEIs

Provision in NBC	Practices in Colleges/Universities
Land Requirement[51] • **For student strength of 1000 to 1500 students,** **Area per college= 5 Ha:** Building area= 1.8 Ha Play field area=2.5 Ha Hostel area=0.4 Ha Parking area= 0.3 Ha **Area per University = 10 Ha** **New University area= 60 Ha**	The availability of land in each visited college is as given below: • Maharishi college of Natural law, Bhubaneswar : 0.56 Ha • Kunja Bihari College, Barang : 0.80 Ha • Godabaris Mahavidyalaya, Banapur : 0.76 Ha • Khetramohan science College, Berhampur :0.22 Ha • Science (A) College Hinjali Katu :0.34 Ha • R.C.M. College Khalikhot : 3.10 Ha • N.B.C. College Kendupadar : 0.13 Ha • Tentulia sasan Debasthan College, Baragam : 0.18 Ha • Govt. Womens college Baripada : 0.42 Ha • M.P.C. college Baripada : 1.00 Ha • B.B College Baiganbadia : 0.29 Ha • Rayagada(A) College, Rayagada : 0.57 Ha • Gunupur College, Gunupur : 0.43 Ha • Maa Markama +3 College, Bissamcuttack : 0.09 Ha • Vikaram Dev (A) College Jeypore : 1.67 Ha • Govt. College, Koraput : 1.39 Ha • Semilguda college, Semiliguda : 0.41 Ha • Laxmipur Degree College, Laxmipur : 0.33 ha As evident from the information provided, colleges have campus area less than recommended under NBC 2005. Sambalpur Univercity,Burla : 11.15 Ha North Odisha University ,Baripada : 13.19 Ha As evident from the information provided, both the universities have campus area as per the NBC 2005 recommendations.
Access to College[52] • **Minimum width of access road** 12m for length of access 200 m	The width of the access in 77% of visited colleges was found to be less than 12m. Remaining 33% colleges and both the universities fulfill this criterion.

[51] Cl.5.5.1of part-3 of NBC 2005
[52] Cl.4.3.1 of part-3 of NBC 2005

Provision in NBC	Practices in Colleges/Universities
15m for length of access 400 m 18m for length of access 600 m 24m for length of access above 600 m	
Open space around the educational buildings[53] • **Open spaces around the buildings shall not be less than 6 m.**	72% of visited colleges and both the universities have open space of 6m or more around the buildings.
Ceiling Height[54] • **All college buildings should have the ceiling height of 3.6m**	The ceiling height is 3.6 m or more was found in 11% of the colleges and both the universities
Staircase[55] • **The width should be minimum 1.5 m** • **No of risers per flight is limited to 12** **Tread width = minimum 300 mm** **Riser = maximum 150 mm**	• Both the universities are having staircase width of 1.5m/ tread 0.3m • Colleges with the new buildings are having the stair width of 1.5m/tread 0.3m but the old buildings are having stair width of 1.2 m/tread 0.25m. In total 83% of colleges were found to have stair width of 1.2 m/tread 0.25m.
Parking space[56] • **The parking space of 0.3 Ha out of 5 Ha of land is to be reserved.**	78% of colleges and both the universities have parking space of more than or equal to 0.3 Ha.
Table 19[57] specifies: • **For College WC: 1 per 40 male students**	• Of the visited HEIs, only 5% colleges and both the universities have WC for males as per the specific ratio. Average ratio was 1 WC per 200 male students whereas the average ratio of urinal was 1:154.

[53] Cl.8.3.1 of part-3 of NBC 2005
[54] Cl.12.2.1.1 of part-3 of NBC 2005
[55] Cl.12.18.1.1 of part-3 of NBC 2005
[56] Cl.5.5.1 of part -3 of NBC 2005
[57] Cl.5.2.5.1 of part-9: section1 of NBC 2005

Provision in NBC	Practices in Colleges/Universities
1 per 25 female students **Drinking water tap: 1 per 50 students** **Urinal : 1 per 20 male students** **Nil for female students** **Wash basin (WB): 1 per 60 male students and 1 per 40 female students** **Table 20[58] specifies:** • **For Hostels: WC/WB/Bath : 1 each per 8 male students and 1 each per 6 female students** **Urinals: 1 per 25 male students** **Nil for female students**	• For females, no college was found to be having WCs as per the specifications. Average ratio was 1 WC per 190 female students. • In college hostels, the average ratio of WC was 1:46 for male and 1:17 for female students. Average ratio for male urinals was 1:44. • In universities, average ratio of WC was 1:14 and 1:20 for male and females' students respectively. Average urinal ratio was 1:24.
Special requirements for physically challenged persons with respect to access and toilets[59]. • **There should be ramps with slope not greater than 1 in 20 or maximum 1 in 12 for short distance.** • **Minimum width of 1500 mm for length of 3500 mm.** • **There should be at least one WC**	• Ramp is available in 44% colleges and both the universities for access to ground floor only. • No WC cubicle as specified in NBC is available in any of the colleges.

[58] Cl.5.2.5.1 of part-9:section1 of NBC 2005
[59] Cl.12.21 (part-3) & Annex D of NBC 2005

Provision in NBC	Practices in Colleges/Universities
cubicle in each building for physically challenged persons[60].	
NBC[61] specifies that • **Wind force and their effects (static & dynamic) should be taken into account while designing buildings.**	As informed by the WD official, wind loads are taken in to account by equivalent static wind load estimation method as per notes under the Cl.4.1 (part 6) - (Section-1) for design of normal/short buildings including college buildings.
NBC[62] specifies the requirements for earthquake resistant design of buildings.	As informed by the WD official, earthquake loads are taken in to account while designing the buildings including college buildings.
NBC[63] specifies about rain water harvesting in buildings	No provision of rain water harvesting found in any of the colleges/Universities visited
NBC[64] specifies about construction practices and safety	• Based on the colleges where construction activity was going on during ESA visit, it was found that safety provisions are not followed. • Neither the College authorities nor the executing agencies (Contractors) are aware of the provisions of construction practices and safety, described in NBC : 2005
NBC[65] specifies about fire and life safety	Fire extinguishers, though available in all colleges, were found expired in some colleges. Secondly the staffs in almost all colleges were found not aware of how to use fire extinguishers.
NBC[66] specifies about water supply, drainage, sanitation and solid waste management	• The practice of testing water to check its portability is not well established. Also no record is maintained in this regard. • In few colleges, some of the ROs installed at drinking water points were not in working condition. There is no record of maintenance. • Practice of regularly cleaning the overhead tanks cannot be ascertained in the absence of the records.

[60] Cl.D 3.7.2 (part-3) of NBC 2005
[61] Cl.4.1 (part 6) Section 1
[62] Cl.5 (part 6)
[63] Cl.5.5.12 (part 9 : section 1)
[64] Part 7 of NBC 2005
[65] Part 4 of NBC 2005
[66] Part 9 of NBC 2005

Provision in NBC	Practices in Colleges/Universities
	• It was found that there is no system in place for drainage of water so it gets collected in low lying areas within or outside the premises where it percolates to ground in time run. • As mentioned above, toilets are not available in colleges as per the norm laid down by NBC. • Maintenance and cleanliness of toilets meant for students was found sub-optimal. • Sewage treatment plants were not found in any of the HEI visited. • Practice of burning of solid waste was found in all the HEIs.

Annexure 1 C: Indicative Checklist for Building Construction Committee of Colleges/Universities

(To be refined/modified based on nature and scale of works envisaged)

Key Areas	Present Status		Action Planned
PRE-CONSTRUCTION PHASE			
Site Related Aspects			
Is the construction site located on forest land?	Yes	No	
Is the construction site located within 300 meters distance from any historical or archeological monument?	Yes	No	
Is the construction site located in close proximity of a water body (stream, pond, etc.)?	Yes	No	
Are there large trees existing on the site?	Yes	No	
If any existing large trees have to be cut for construction of the building, has the permission to cut the trees been taken from Odisha State Forest & Environment Department?	Yes	No	
Has a site visit been undertaken by the engineer of the construction agency?	Yes	No	
Design Related Aspects			
Has the building design integrated existing trees on the site (so that there is no necessity of cutting them)?	Yes	No	
Is there a 6 m open space available around the buildings?	Yes	No	
Is there a provision of ramps & toilets on each floor for persons with physical challenges?	Yes	No	
Will rooms have adequate natural light & ventilation?	Yes	No	
Have the safety provisions made like minimum two staircases in each new building to be constructed (stair width minimum 1.5 meters, emergency exit)?	Yes	No	
Have WCs been provided as per the student strength - 1 WC per 40 male students, 1 urinal per 20 male students, 1 WC per 25 female students?	Yes	No	
Do the toilets have provision of water, adequate light & ventilation?	Yes	No	
Are drinking water facilities planned as per student strength - 1 per 50 students?	Yes	No	
Is there provision for rain water harvesting?	Yes	No	
Has building design taken into account earthquake, cyclone and flood safety?	Yes	No	
Has space been allotted for greenery/plantation/ landscaping?	Yes	No	
Is boundary wall existing or planned in all the directions?	Yes	No	

Key Areas	Present Status		Action Planned
Has the certified copy of the approved drawings been collected and kept with the building committee?	Yes	No	
Does the tender document incorporate the provisions for environment management and safety measures during construction?	Yes	No	
CONSTRUCTION PHASE			
Has an area been identified / demarcated for stacking the materials?	Yes	No	
Are suitable measures taken by contractor at the construction site for control of dust, noise, etc.?	Yes	No	
Are safety measures being taken for the workers, students, staff, etc.?	Yes	No	
Is there a display of the Board stating the name of work, value of work, name of agency, name of executing department, date of start, date of completion, etc?	Yes	No	
Is there regular cleaning of solid wastes generated during construction and their safe disposal?	Yes	No	
POST CONSTRUCTION PHASE			
Check whether construction waste has been cleared and disposed at an appropriate location identified in consultation with the local municipality or panchayat.	Yes	No	
Verify the following:			
• Construction has been done as per the plan	Yes	No	
• Fittings and fixtures of quality as given in specifications, properly fitted and in working condition	Yes	No	
• Any defect/deficiency noticed in any part of the building	Yes	No	
• Maintenance plan prepared in consultation with construction agency staff	Yes	No	

Annexure 1 D: Indicative Format for Environmental Audit and Management Plan (EAMP)

(To be refined/modified once the Nodal Environment Officer in the PMU is on board)

Environmental Aspect	Key Areas	Present Status	Proposed Activity for Environmental Improvement	Budget proposed (as part of IDP)
Water	Ratio of drinking water taps: Students[67]	____ : ____		
	Drinking water quality tested at least twice per year?	Yes/No		
	Drinking water quality complies with IS 10500 standards?	Yes/No		
	Estimated water leakage (leaking taps, tank overflow, etc.)	____ liters per day		
	Provision for rain water harvesting on campus?	Yes/No		
	Areas of water stagnation on campus?	Yes/No		
Sanitation[68]	Toilet: Student ratio for males in college	__ urinals : __ students		
		__ WCs: __ students		
	Toilet: Student ratio for females in college	__ units: __ students		
	Toilet: Student ratio for males in hostel	__ urinals : __ students		
		__ WCs : __ students		
	Toilet: Student ratio for females in hostel	__ units : __ students		
Energy	Electricity bill per month	Rs. _____		
	% of energy efficient bulbs (LEDs)	_____%		
	% of energy efficient ACs (4 or 5 star rated)	_____%		

[67] NBC prescribes the following: 1 tap per 50 students.

[68] NBC prescribes the following: 1 WC per 40 male students, 1 urinal per 20 male students, 1 WC per 25 female students.

Environmental Aspect	Key Areas	Present Status	Proposed Activity for Environmental Improvement	Budget proposed (as part of IDP)
	Use of solar energy (for UPS, indoor/outdoor lighting, hostel water heating, etc.)	Yes/No		
Waste[69]	Provision of dustbins in every room and corridor	Yes/No		
	Segregation of wastes (biodegradable, non-biodegradable, hazardous)	Yes/No		
	Composting facility for biodegradable wastes (e.g., food wastes, garden waste)	Yes/No		
	Collection of segregated non-biodegradable by recycler/waste collector	Yes/No		
	Dumping of mixed waste on/off campus	Yes/No		
	Burning of waste on/off campus	Yes/No		
	Poly-bag free campus	Yes/No		
	Segregation and collection of e-waste	Yes/No		
	Maintenance of records of e-waste	Yes/No		
Safety	Availability and use of personal protective gear (apron, gloves, mask, etc.) in laboratories involving chemicals/hazardous materials	Yes/No		
	Availability of Material Safety Data Sheets (MSDS) for all chemicals/materials	Yes/No		
	Standard Operating Procedures for laboratory safety developed and communicated to users	Yes/No		
	Availability of first-aid kits	Yes/No		
	Availability of fire extinguishers and fire alarm system	Yes/No		

[69] Please refer to Solid Waste Management Rules, 2016 and E-Waste Management Rules, 2016.

Environmental Aspect	Key Areas	Present Status	Proposed Activity for Environmental Improvement	Budget proposed (as part of IDP)
Access by Persons with Disabilities (PwD)	Availability of ramp for access by PWD	Yes/No		
	Availability of special toilet for PWD	Yes/No		
Greenery	Percentage of campus area with greenery	___%		
	Number of trees[70] on campus	____		
	Number of different species of trees on campus	____		

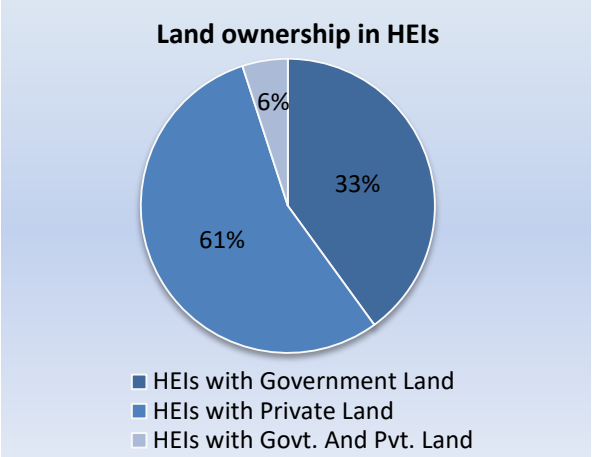
[70] Trees are plants that have more than 30 cm girth (circumference of the trunk) at chest height (about 4.5 feet from ground).

Annexure 1 E: Assessment of Environmental Aspects of HEIs

i. Land Use

Ownership of Land

- Overall 33% of visited HEIs have Government and 61% private land. B.B. College, Baiganbadia reported to have both Government and Private land.
- Out of four autonomous colleges, Vikram Dev (Auto) College, Jeypore and Rayagada Autonomous College, Rayagada have government land.
- Both the Universities have government land.



Total campus area

- Colleges: The average building area of 18 colleges has been found to be around 0.70 Hectare and in four autonomous colleges, around 0.89 Hectare.
- The average play field area of 18 colleges has been found to be around 1.18 Hectare. Government Women's College Baripada and B.B. College Baiganbadia do not have play fields.
- Average Hostel / Residential area in 18 colleges is 0.33 Hectare. Out of visited colleges, 7 do not have the Hostel/Residential facility.

Figure 2: Playfield in Government College Koraput

- Parking area of has an average of 0.52 Hectare of land.
- Universities: The average building area in Universities has been found to be around 12 Hectare and average play field area around 2 Hectare. Institutions have average 3 Hectare of Hostel / Residential areas. Parking area has an average of 1 Hectare land.

Land use plan

- Colleges: Fifty percent of visited colleges has land use / Site / architectural / layout / Building Plan available with them. This includes 2 of the 4 Autonomous colleges. Land use plans of five colleges are found to be as per the local building regulations. Rest of the colleges either does not have it or it is reportedly with some other authority (WD, CPWD).

Figure 3: Open space on the rear side in V. D. College, Jeypore

- Universities: Both the visited universities have the land use plan as per local building regulations.

Open space around building

- Colleges: On an average 8 meters of open space was found around the buildings. In Autonomous Colleges, the average space is 6.75 meter. Rayagada Autonomous College (2 mtr) and Science (A) College, Hinjilicut (5) have less than 6 meters of space around buildings
- Universities: Both universities have adequate space around building.

Ceiling Height and Width of Staircases

- Two Colleges and both the Universities have the adequate ceiling height of 3.6 meters or more.
- 3 out of 18 colleges and both the Universities have minimum 1.5 meters of staircase width.

Floor area

- 4 out of 18 colleges and both the Universities have minimum 4 sq meters of floor area.

Boundary wall

- 15 out of 18 colleges and both the Universities have boundary wall of such height that it cannot be scaled over easily. Out of these 10 colleges and both the Universities have fortified their boundary wall with spiraling barbed wires. All these institutions have their hostel facilities also secured with boundary wall.

Land availability for expansion

- Colleges: 15 out of 18 colleges have sufficient land for infrastructural expansion. Govt Women's College Baripada, B.B. College Baiganbadia and Rayagada Autonomous Colleges do not have land for expansion.
- Universities: Both universities have sufficient land for expansion.

Figure 4: Unsafe staircase in a college

Figure 5: Access road and boundary wall of Godavarish College, Banapur

Figure 6: Cycle stand in Maa Markama College, Bissamcuttack

ii. Ventilation and Safety

Ventilation

- All the HEIs visited have adequate windows and ventilator in administrative and class rooms.
- 56% of institutions have exhaust fans in classrooms as per the requirements.

Figure 7: Classroom with a single exit

Life safety

- As per the Common Minimum Standards of HED, only 8 out of 18 Colleges get the building certified by an Engineer not below the rank of an Assistant Engineer at the beginning of every academic session..
- All the Colleges except two have common assembly area. This was found in both the universities.
- During ESA, 14 out of 18 colleges and both the universities mentioned one of the exit doors as emergency exit. However technically those were not found to be as per norms. Moreover there was no signage in this regard.
- All the institutions have electrical earthling system for the total load.
- For safety purpose, barbed wire/boundary wall around transformer was found in 61% of visited colleges and one of the Universities only.
- Around 67% Colleges and both the Universities have secured electrical control panels.

Figure 8: Unsafe electrical panel

- Around 67% Colleges and both the Universities have separate assigned place for storage of inflammable materials / chemicals. However the storage space was found inadequate in almost all the colleges.
- All the visited educational institutions have First Aid arrangements. However in most of the cases it was found to be not properly maintained and easily accessible.
- All colleges except one Degree College and both the universities were found to be structurally safe during ESA.

Figure 9: Protected electrical panel in Govt. Women's College, Baripada

iii. Fire safety, Workmanship and Accessibility

Fire safety

- None of the educational institutions visited for ESA has 'No Objection Certificate' from their respective Fire Officers.
- Around 50% of Colleges and North Orissa University reported to have conducted the fire drills in their campuses. However none of them could produce the documentary proof of this.
- Regarding the availability of fire safety equipments, 83% of colleges have Fire extinguishers though in few colleges these were found to be expired. None of the visited HEI has Hose reel, Automatic sprinkler and fire alarms systems in place.

Figure 10: Recently re-filled fire extinguisher in K.B. College, Barang

Workmanship

- The quality of the material used in construction was found to be good in all the HEIs
- The quality of the workmanship in construction was also found good.

Figure 11: No safety measures at the construction site

Provision for making the building user friendly for Persons with Disability (PWD)

- Around 33% colleges visited have building design user friendly for persons with disability (PWD). Universities have user friendly buildings but not in all the departments. These building have ramps for PWDs mainly on the ground floor only. Special toilets were found only in two Colleges.

Figure 12: Ramp in Rayagada Auto. college, Rayagada

iv. Water Supply and Sanitation

Water Supply

- Source of water: The source of water in visited HEIs was Bore well in 94% institutions, Tube Well in 56% and both open well and PHED supply in 33% to 39% institutions respectively.
- System for purification of water: College administration having PHED water supply perceive that treated water is supplied by the department so there is no further treatment/purification is done. About 39% Colleges and both the universities chlorinate (bleaching powder addition) water in the campus.
- Drinking water facilities: Average number of taps for drinking water in colleges was found to be 14 and in Universities 30. The tap per student ratio is very high in all these educational institutions.
- All HEIs visited for ESA provide safe drinking water by installing water filter and purification system. However few RO systems were found non functional during the visit and also there was no documentation related to the change of their filters and water quality check.
- Water Quality: None of the HEIs visited have the system of testing the water quality. Most of the institutions have taken the Annual Maintenance Contract (AMC) for their RO systems from the company. So their technicians visit for changing the filter and at that time test the quality of water. However most of the HEIs, especially in rural and tribal areas reported visit by technicians only for the breakdown maintenance. So regularity of checking the quality of water is not found in any of the HEIs.

Figure 13: Drinking water facility

Figure 14: Poorly maintained toilets

Sanitation

- The ratios of WC/Students in all the visited HEIs were found to be higher than the recommend as per NBC code except in universities and one of the College.
- In some HEIs, few available toilets were found defunct. In almost all HEIs, the sanitation and hygienic conditions of toilets meant for the students was found poor.

Figure 15: Rear side of a building

v. Disaster Management

Disaster Management System

- None of the visited institutions have cyclone and flood safety systems.
- Regarding the Emergency notification system, it was found in one of the University through which emergency message can be sent.
- None of the HEI visited has prepared the evacuation plan and displayed at different places.

Figure 16: Students wearing aprons in lab in Rayagada Auto. college, Rayagada

Systems in Science Laboratories

- None of the HEIs visits has Material Safety Data Sheets (MSDS) for all chemicals.
- In 83% Colleges and both the universities, safety gears for lab (apron, gloves, googles etc.) were available. However out of these, usages of apron were found in colleges and apron, gloves in universities during the visits. Regular orientation of the lab users have been reported by HEIs, although interaction with students did not reflect this practice.
- About five colleges and both the universities reported having Standard Operating Procedures (SOPs) for dealing will accidental spills, disposal of chemical waste though hard copies of these SOPs could not found in the lab.

Figure 17: Batteries kept under the stairs

vi. Waste Management

Systems for Waste Management

- Waste generation: HEIs having science labs estimated to produce 0.5 – 3 Kg chemical waste per week. None of the HEI produces biomedical waste. Only two colleges and Sambalpur University mentioned producing some e-waste.
- HEIs mentioned to produce 3-10 kgs, 1-2 kg and about 1Kg of Garden, Paper and Food waste per week respectively. HEI where construction work is going on, mentioned producing construction waste also.
- 56% of colleges and both the universities reported having the practice of waste segregation. However it was not observed during the visits to these educational institutions.
- Disposal of waste: All the colleges except one and one of the universities dispose off their chemical waste by directly discharging it into the general sewage system. E-waste has been found to be dumped in a room in most of the HEIs. Practice of burning of paper and garden waste was found in all the educational institutions. Food is being dumped in the municipality waste.

Figure 19: Empty bottles of chemicals lying in the open

Figure 21: Burning of waste in the open

vii. Assessment of Green Building aspects

Green Building

Figure 18: Congested classroom

- All the HEIs have natural lights and ventilations in class rooms.
- LED bulbs were found in about 56% of HEIs. However these were only found in the administrative areas and computer sections.
- In total 55% of visited HEIs have been found using alternate source of energy in their campuses. All such institutions have installed Solar Panels for this purpose. However it was found that the use of alternative energy is mainly for the illumination purpose and that too mostly for the administrative block only. These sources are not being used in hostels to reduce the electrical energy consumption.
- Although around 35% of visited HEIs reportedly undertake Energy audits at least once in a year but no record was found in this regard.

Rain Water Harvesting

- Structures for Rain Water Harvesting were found only 10% of visited HEIs. System was found in MPC College, Baripada and Kshetra Mohan College while at few HEIs like North Orissa University, Godabaris Mahavidyalaya Banapur it is under construction. Some HEIs do not have sufficient space to create this system.
- Regarding the use of water efficient fittings, 90% of visited HEIs use low water demand flushes.

viii. Proximity to natural and cultural heritage sites

- About 35% of visited HEIs are located within or nearby environmentally sensitive areas like protected areas (e.g. intact natural forests, mangroves, wetlands or threatened species). Details have been provided in the below table;

Sl.No	Name of the HEI	Forest area/eco-sensitive area	Distance
1	MPC College Baripada	Similipal Bio-Sphere Reserve	2 Km to Forest Area
2	Godabaris Mahavidyalaya, Banpur	Reserve forest	1.9 Km to Forest Area
3	R.C.M Science (D) College, Khallikote	Reserve forest	Contiguous to Reserve Hill
4	Tentulia Sasan Debasthan College, Baragam	Reserve forest	2.5 Km to forest Area

5	Government Degree College, Koraput	Village forest and mining area	3 Km to Forest Area
6	Laxmipur Degree College, Laxmipur	Reserve forest	Contiguous to Reserve Hill
7	North Orissa University	Similipal Bio-Sphere Reserve	1 Km to Forest Area
8	Sambalpur Univeristy, Sambalpur	Reserve forest	1 Km to Forest Area

- About 25% of visited HEIs near Historic building / archeological site. Details have been provided in the below table;

Sl.No	Name of the HEI	Historic building / archeological site	Distance
1	Govt Women's College, Baripada	Maharaja Palace	Adjacent to the palace of Maharaja of Baripada
2	R.C.M Science (D) College, Khallikote	Maharaja Palace	Adjacent to the palace of Maharaja of Khallikote
3	Vikram Dev (Auto) College, Jeypore	Maharaja Palace and his Dewan's building	Part of Maharaja Jeypore's palace and near to King's Dewan Building
4	Maa Markama Plus Three College,Bissamcuttack	Old famous temple and King's Dewan Building	~2-3 Kms
5	Sambalpur Univeristy, Sambalpur	Hirakud Reservoir Site and Power Channel of Hirakud Dam	Two Kms from Hirakud Reservoir Site and 1 KM from Power Channel of Hirakud Dam

- About 65% of the HEIs reportedly create Environment Consciousness among their staff and students. However this is primarily through conducting Seminar / lectures.
- About 10%, 20%, 50% and 35% HEIs reportedly monitor and control air quality, noise, water quality and do water management. However neither there was record related to these practices nor such practices were observed during the ESA visits.
- About 70% of educational institutions visited for ESA undertake plantation drives to increase the greenery in the campus. Good green coverage was observed in colleges having sufficient land on which Forest Department had planted trees and later handed over to HEIs.
- All HEIs reportedly have made their campus plastic free due to the repeated instruction of the Director Higher Education. However in practice this was not observed during ESA. However 39% HEIs did mention about having plan to handle such materials in their labs.
- HEIs do not use any radioactive and hazardous material so they have not made any plan to handle and dispose such materials.

- About 65% of HEIs have 20 percentages or less than that of area covered by plantation in their campuses.

All the HEIs are found aware of UGC guidelines on Dissections, Radioactive and Hazardous Wastes, Safety of Students and Swatch Bharat – Swasth Bharat.

Annexure 1 F: Environmental Laws and Regulations Relevant for Construction

- Environment (Protection) Act, 1986, EIA Notification 2006 and Amendment 2014
- Water (Prevention and Control of Pollution) Act, 1974, and as amended
- The Water (Prevention and Control of Pollution) Cess Act, 1977
- Easement Act, 1882
- State Groundwater Act and Rules, as may be in force
- Coastal Regulation Zone (CRZ) Notifications
- Air (Prevention and Control of Pollution) Act, 1981, and as amended
- The Air (Prevention and Control of Pollution) Rules, 1982
- Noise Pollution (Regulation and Control) Rules, 2000, and as amended
- The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996.
- Public Liability Insurance Act, 1991, and as amended
- The Petroleum Rules, 2002
- The Gas Cylinder Rules, 2004
- Hazardous Wastes (Management and Handling) Rules, 2016.
- Construction and Demolition Waste Management Rules, 2016
- Plastic Waste Management Rules, 2016
- Solid Waste Management Rules, 2016.
- The Batteries (Management and Handling) Rules, 2001
- Motor Vehicle Act, 1988 as amended (and State Motor Vehicle Act as may be in force)
- The Ancient Monuments and Archaeological Sites and Remains Act, 2010
- National Building Code, 2005

- Payment of Wages Act, 1936
- Minimum Wages Act, 1948
- Inter-State Migrant Workmen's (Regulation of Employment & Conditions of Service) Act, 1979
- Employees Compensation Act, 1923
- The Personal Injuries (Compensation Insurance) Act, 1963
- Employer's Liability Act, 1938
- Employee's State Insurance Act, 1948
- Labour (Regulation and Abolition) Act, 1970
- Equal Remuneration Act, 1979
- Maternity Benefit Act, 1951
- Child Labour (Prohibition and Regulation) Act, 1986
- Bonded Labour System (Abolition) Act, 1976

Annexure 1 G: Indicative Checklist for Monitoring of Environmental Aspects

(To be refined/modified once the Nodal Environment Officer in the PMU is on board)

Key Areas	Present Status		Gaps identified / Comments
Infrastructure related			
General			
Does the institution have layout plan/Building Plan available?	Yes	No	
Is the institution (including hostels) secured by a boundary/compound wall?	Yes	No	
Is there a ramp for persons with disability (PwD)?	Yes	No	
Is there a special toilet for PwD?	Yes	No	
Has the status of the buildings supervised and certified by an Engineer not below the rank of an Assistant Engineer at the beginning of every academic session?	Yes	No	
Hostel			
Hostels available			
For Boys	Yes	No	
For Girls	Yes	No	
If yes, then numbers of Hostels available			
Does the hostel have safe drinking water facility?	Yes	No	
Number of WCs for male students			
Ratio of WCs / male students			
Number of WCs for female students			
Ratio of WCs / female students			
Number of urinals for male students			
Ratio of urinals / male students			
Electrical safety			
Is fencing provided around transformer?	Yes	No	
Is the control panel room secured?	Yes	No	
Water			
Number of drinking water taps			
Ratio of drinking water taps / students			
Does the college test quality of drinking water regularly?	Yes	No	
Are water filters/purification system available?	Yes	No	
Sanitation			
Number of WCs for male students			
Ratio of WCs / male students			
Number of WCs for female students			
Ratio of WCs / female students			
Number of urinals for male students			
Ratio of urinals / male students			

Key Areas	Present Status		Gaps identified / Comments
Safety			
Are campus fire drills conducted?	Yes	No	
Are fire extinguishers available in the college?	Yes	No	
Has the institution prepared an evacuation plan and displayed at different places?	Yes	No	
Waste management			
What is the method of Waste disposal in the institution? 1. Chemical waste (from labs) 2. Biomedical waste (from labs, toilets, etc.) 3. E-waste 4. Garden waste 5. Paper waste 6. Construction waste 7. Food waste **8.** Others			
Chemical Safety			
Is there availability of Material Safety Data Sheets (MSDS) for all chemicals used?	Yes	No	
Has orientation been given to lab users on safety?	Yes	No	
Is there availability and use of safety gear (goggles, apron, gloves, etc.) by lab users?	Yes	No	
Is there availability of Standard Operating Procedures (SOPs) for dealing will accidental spills, disposal of chemical waste, etc.	Yes	No	
Environment friendly practices			
Does the campus use energy efficient electrical appliances?	Yes	No	
Has the college conducted Green audit?	Yes	No	
Has the college conducted Energy audit?	Yes	No	
Has the college undertaken plantation drive to increase the green cover?	Yes	No	
Does the college have a plastic free environment?	Yes	No	
Has the college stopped the practice of animal dissection in lab?	Yes	No	

Annexure 2: Social System

Annexure 2 A: Documents reviewed

At National level

- Ministry of Human Resource Development - http://mhrd.gov.in/documents_reports
- All India Survey on Higher Education (AISHE) http://aishe.nic.in/aishe/home
- UGC Guidelines for
    - Autonomous Colleges During The XII Plan Period (2012-2017) (Updated as on 13-04-2016)
    - Scheme of Development assistance to Colleges for the construction Of buildings during the Twelfth plan (2012-2017)
    - Discontinuation of dissection and animal experimentation in Zoology/Life Sciences in a phased manner
    - Safety of students on and Off campuses of higher educational Institutions
    - Guidelines for Swachh Bharat-Swasth Bharat Scheme of the UGC
    - The special scheme of Construction of women's hostel For colleges During the twelfth plan (2012-2017)
    - Procurement, Storage, Usage and Disposal of Radioactive and other Hazardous Materials / Chemicals
- Institutional Accreditation Manual for Self Study Report for Affiliated / Constituent Colleges, published by National Assessment and Accreditation Council
- Institutional Accreditation Manual for Self Study Report for Autonomous Colleges, published by National Assessment and Accreditation Council
- Institutional Accreditation Manual for Self Study Report for Universities published by National Assessment and Accreditation Council
- Various National Acts and Regulations which are relevant for the Social Assessment

At State level

- Guidelines on Standards from the HED such as 'Common Minimum Standard Guidelines' - http://www.dheodisha.gov.in/Download/CMS.pdf
- Students Academic Management Systems (SAMS) http://dheodisha.gov.in/sams/index.aspx
- Final draft of State Higher Education Policy 2016
- Various Government orders and circulars which are relevant for SSA
- Checklist of the District Infrastructure And Quality Monitoring Cell

World Bank and Program related

- Results in Education for All Children (REACH): Assessment of the Pilot Year – http://www.worldbank.org/en/programs/reach#4
- The Rise of Results-Based Financing in Education, 2015 – http://documents.worldbank.org/curated/en/348311468292285977/pdf/Restructuring-Paper.pdf
- Project Documents including Results Framework & Disbursement Linked Indicators

- ‘Environment and Social Assessment (ESSA)’ undertaken by World Bank for Skill India Mission Operation http://documents.worldbank.org/curated/en/620741473325344494/pdf/108149-EA-P158435-Box396306B-PUBLIC-Disclosed-9-5-2016.pdf
- ‘Environment and Social Assessment (ESSA)’ undertaken by World Bank for Enhancing Teacher’s effectiveness in Bihar – http://documents.worldbank.org/curated/en/922501468049773248/pdf/E46730V10P132600Box385371B00PUBLIC0.pdf
- ‘Environment and Social Assessment (ESSA)’ undertaken by World Bank for Skills Strengthening For Industrial Value Enhancement
- ‘Environment Management Framework’ undertaken by World Bank for Higher Education Quality Improvement Project, Madhya Pradesh

Annexure 2B: Evidence from the Secondary Literature

ODISHA SOCIO ECONOMIC PROFILE

Population

Odisha, as per census 2011, has a population of 41.9 million which is 3.47% of Indian population. It is the eleventh most populous state of India. The population growth rate, as per census 2011, decreased from 15.94% to 14.05% while the population density increased from 236/km^2 to 270/km^2 when compared to census 2001.

The overall sex ratio of the state has improved from 972 to 979 during 2001-11 decade, while the child sex ratio has declined from 979 to 941 with evident rural, urban and regional differences. Total child population (0-6 Age) is 5.2 million which constitute 12.6% of state's population.[71]

Orissa hosts more than 60 varieties of tribal communities and 11 primitive tribal groups, which put together amount to 28% of the entire population in the state. A substantial proportion of the population (40%) belongs to disadvantaged communities of schedule cast and schedule tribes with 4.5% of minorities share of Muslims and Christians. Almost one third of the total population resides below the poverty line[72]. The key demographic characteristics of the state have been tabulated below;

Table 1: Key Demographic Parameters of Odisha

Item	Orissa	India
Total Population (Census 2011) (In Crore)	4.19	121.01
Decadal Growth (%) (Census 2011)	13.97	17.64
Sex Ratio (Census 2011)	978	940
Child Sex Ratio (Census 2011)	934	914
Total Literacy Rate (%) (Census 2011)	73.45	74.04
Male Literacy Rate (%) (Census 2011)	82.40	82.14
Female Literacy Rate (%) (Census 2011)	64.36	65.46
Schedule Caste population (%) (Census 2011)	17.1	16.6
Schedule Tribe population (%) (Census 2011)	22.8	8.6

[71] http://www.census2011.co.in/census/state/orissa.html
[72] Odisha Economic Survey, 2014-15

Population by Religious Community: Hinduism is majority religion in Orissa with 93.63 % followers. This is followed by Christianity with 2.8% and Muslim with 2.2% followers.

Comparative population in Orissa and India by religious community has been tabulated below;

Table 2: Key Demographic Parameters of Odisha

Item	Orissa			India		
	Total	Rural	Urban	Total	Rural	Urban
Hindu	93.6	94.2	90.6	79.8	82.1	74.8
Muslim	2.2	1.4	5.9	14.2	12.4	18.2
Christian	2.8	2.8	2.7	2.3	2.0	3.0
Sikh	0.1	0	0.2	1.7	1.8	1.6
Buddhist	0	0	0.0	0.7	0.6	1.0
Jain	0	0	0.1	0.4	0.1	0.9
Other religions and persuasions	1.1	1.3	0.2	0.7	0.9	0.2

Rural and Urban Population: In contrast to the national percentage of rural population at 68.86%, Odisha hosts a high rural population at 83.31%. The scenario reverses for urban population where Odisha (16.69%) significantly lags behind India (31.14%).

The rural and urban populations divide and their key demographic characteristics of the state have been tabulated below;

Table 3: Key Demographic Parameters of Odisha

Item	Orissa		India	
	Rural	Urban	Rural	Urban
Percentage of total state/India population	83.31	16.69	68.86	31.14
Population Growth in percentage	11.77	26.94	12.18	31.80
Sex Ratio	989	932	947	926
Average Literacy in percentage	70.22	85.75	68.90	85
Male Literacy in percentage	79.65	90.72	78.60	89.70
Female Literacy in percentage	59.95	74.31	58.80	79.90

Disabled Population by age: The percentage of the State's disabled population to total population as per Census 2011 is 2.96 which increased from 2.78 in the 2001 Census. Age wise, 15.1 percent and 13.3 percent of the disabled persons are reported in 10-19 years and 20-29 years of age category.

Comparative population in Orissa and India by religious community has been tabulated below;

Table 4: Key Demographic Parameters of Odisha

Item	Orissa			India		
	Total	Rural	Urban	Total	Rural	Urban
Percentage of total state/India population	2.96	85.8	14.2	2.21	69.5	30.5

Item	Orissa			India		
Percentage of disabled persons in 10-19 years age group	15.1	14.9	16.5	17.2	17.5	16.5
Percentage of disabled persons in 20-29 years age group	13.3	12.8	16.5	15.6	14.7	17.8

Geography

Odisha is bound by the Bay of Bengal on the east, Chhattisgarh on the west, Andhra Pradesh on the south and Jharkhand and West Bengal on north. The state has an area of 155,707 sq. km which is about 4.87 percentage of total area of India. It has a coast line of about 450 kms. Odisha has been divided into five major morphological regions; the Odisha Coastal Plain in the east, the Middle Mountainous and Highlands Region, the Central plateaus, the western rolling uplands and the major flood plains.

There are 30 districts, 314 blocks and 51349 villages. These 30 districts have been placed under three different revenue divisions for smoothing the governance. The divisions are North, South and Central, with their headquarters at Sambalpur, Berhampur and Cuttack respectively. Each division consists of 10 districts.

Geographical Distribution of Tribal Areas

- The Scheduled Areas constitute 69,614 sq. kms out of the total geographical area of 1,55,707 sq. kms of the State
- In the state, 12 districts are identified as Tribal districts. There are 119 TD Blocks included in the Scheduled areas in 12 Districts. Besides, there are 45 MADA and 14 Cluster pockets.
- There are 62 tribal communities in the State including 13 Particularly Vulnerable Tribal Groups (PVTG). The Scheduled Tribes of Odisha constitute 9.66% of the country's tribal population.
- *Access:* 39 tribal blocks**,** are mostly inaccessible and are hard to reach. However, 63 **blocks** consisting of mainly tribal population has better connectivity.
- *HPDs:* Of the 10 High Priority Districts identified for accelerated effort under NHM, seven are tribal districts.

Development Profile

The development process in Odisha, in-spite of abundant natural resources, has been slow historically and state has lagged behind the national average, in terms of a number of development indicators. However during the last two decades state has made rapid strides in all spheres. As things stand now, Odisha contributes only about 2.6 percent of the national income and its per capita income is around 72 percent of the national average.

In terms of the diversification in the sectoral composition of the state economy, the share of the Agriculture sector came down to 23.41 percent during the 10^{th} Plan and 18.47 percent during the 11^{th} Plan. During the same period, the share of the industries sector has increased from 33.22 percent to 35.49 percent and the share of the Services sector has increased from 43.37 percent to 46.04 percent. During the first 4 years of the 12^{th} Plan the share of Agriculture sector has further declined to 17.93 percent whereas of Industries sector

increased to 40.93 percent. The share of Service sector has also slightly decreased to 41.14 percent.

The average annual sectoral growth rates of Agriculture, Industry and Service sectors during the first 4 years of the 12th Plan have been 1.95 percent, 3.80 percent and 8.01 percent respectively compared to India's 1.64 percent, 5.46 percent and 8.88 percent respectively[73].

Employment unemployment scenario

One of the important parameter of inclusive and sustainable economic development is the productive employment of available human resources. The total workers population that includes both main workers and marginal workers constitutes the employed labour force.

Total workers in Odisha have increased from 142.76 lakh in 2001 to 175.42 lakh in 2011. The percentage of total workers to total population in the State increased from 38.8 percent in 2001 to 41.8 percent in 2011. However, the percentage of main workers to total workers declined from 67.2 percent in 2001 to 61.0 percent in 2011. This indicates increasing trend in prevalence of under employment.

Organized sector employment compiled by the Directorate of Employment reveals that the total employment in the sector has declined from 7.01 lakh to 5.93 lakh during the period 2008 to 2015. While the share of the private sector has increased from 14.55 percent to 17.54 percent, the share of public sector has declined from 85.45 percent to 82.29 percent during the period. The share of the State Government in the total organized sector employment has remained more or less around 50 percent during the period. As per the live register position, the number of registered unemployed increased from 8.32 lakh to 10.42 lakh during 2008 to 2015. Compared to this placement was around 0.44 percent of the Live Register position and 1.92 percent of the registration made during 2008, which declined to 0.17 percent and 0.90 percent respectively by 201574.

Women Development

The female literacy rate in the State has increased from 51 percent (India 54 percent) in 2001 to 64 percent (India 65.5 percent) in 2011. The proportion of women to the total employees in the organized sector has increased from 13.8 percent (India 18.4 percent) in 2003 to 16.8 percent (India 18.1 percent) in 2011. One of the reasons for such increase is the reservation of 1/3rd vacancies in all categories of posts under the public sector for women since 1992. The State Government has launched "Mission Shakti" from 2001 with a view to ensuring active participation of women in the development process and making them self reliant through formation of Self Help Groups (SHGs)75.

Development of Scheduled Castes & Scheduled Tribes

STs and SCs together constituted 39.9 percent (STs 22.8 percent and SCs 17.1 percent) of the total State population in 2011. The State Government has launched special programs for STs and SCs, which include establishment of special employment exchanges and reservation in

[73] Directorate of Economics & Statistics 2016-17, Odisha
[74] Annual Plan 2016-17 Odisha Vol-I
[75] Annual Plan 2016-17 Odisha Vol-I

employment. The Tribal Sub-plan approach has been adopted from the Fifth Plan and the Scheduled Caste Sub-Plan for SCs from the Sixth Plan. Allocations of funds at least in proportion to STs and SCs in total population are earmarked under the Tribal Sub-Plan and Scheduled Caste Sub-Plan respectively in respect of different development programs with a view to accelerating socio-economic development of these communities.

SOCIO ECONOMIC PROFILES OF DISTRICTS COVERED UNDER SSA

The key demographic characteristics of the districts covered under the study are as given below;

Table 5: Key demographic parameters of Mayurbhanj District

Item	Orissa	Mayurbhanj	Khordha	Ganjam	Rayagada	Koraput
Total Population (Census 2011) (In Crore)	4.19	0.25	0.22	0.35	0.09	0.13
District population as percentage of total state population (Census 2011)		6	5.4	8.4	2.3	3.3
Total Literacy Rate (%) (Census 2011)	73.45	54.35	77.72	62.62	42.13	41.2
Male Literacy Rate (%) (Census 2011)	82.40	57.9	54.72	57.13	59.34	60.0
Female Literacy Rate (%) (Census 2011)	64.36	42.0	45.28	42.87	40.66	40.0
Schedule Caste population (%) (Census 2011)	17.1	7.33	13.21	19.5	14.41	14.2
Schedule Tribe population (%) (Census 2011)	22.8	58.72	5.11	3.37	55.99	50.6

District Mayurbhanj has significantly higher Schedule Tribe population than the state. The population percentage of Schedule Caste and overall literacy rate is lower than the state and so is the gap in literacy rate between males and females (15.9 as compared to 18.04).

District Khorda has comparatively more Schedule Caste population percentage than the Scheduled Tribe though both are lesser than state percentage. Overall literacy rate is higher compared to the state. However the gap in literacy rate between males and females is almost half in the district (9.4) than that of the state (18.04).

The percentage population of Schedule Caste in the Gangam district is higher than the state. District has very less percentage of Scheduled Tribes. Overall literacy rate and gender gap in the literacy are lesser than that of the state.

District Rayagada has significantly higher Schedule Tribe population than the state. The population percentage of Schedule Caste and overall literacy rate is lower than the state. However the gap in literacy rate between males and females is higher in the district (18.68) as compared to the state (18.04).

District Koraput has higher percentage of Schedule Tribe and lower percentage of Scheduled Caste population compared to the state. Overall literacy rate is lower but the gender gap in literacy rate between males and females is higher in the district (20) as compared to the state (18.04).

So overall sample colleges covered under SSA are spread over five districts out of which three namely Mayurbhang, Rayagada and Koraput are tribal districts. Except Khorda, all districts have low literacy rate than the state. The gender gap in the literacy rate of males and females is higher in Koraput and Rayagada districts as compared to the state.

Population by Religious Community:

Like state, all the covered districts have predominantly Hindu population. Presence of minority population is very insignificant. Comparative population of districts and Odisha is given below;

Table 6: Population distribution as per religion in Mayurbhanj District

Item		Hindu	Muslim	Christian	Sikh	Buddhist	Jain	Other religions and persuasions
Orissa	**Total**	93.6	2.2	2.8	0.1	0	0	1.1
	Rural	94.2	1.4	2.8	0	0	0	1.3
	Urban	90.6	5.9	2.7	0.2	0	0.1	0.2
Mayurbhanj	**Total**	84	1	1	0	0	0	14
	Rural	83	1	1	0	0	0	15
	Urban	92	5	0	0	0	0	2
Khordha	**Total**	95	4	1	0	0	0	0
	Rural	96	4	0	0	0	0	0
	Urban	95	4	1	0	0	0	0
Ganjam	**Total**	99	0	1	0	0	0	0
	Rural	99	0	1	0	0	0	0
	Urban	98	1	1	0	0	0	0
Rayagada	**Total**	90	0	9	0	0	0	0
	Rural	90	0	10	0	0	0	0
	Urban	94	2	3	0	0	0	0
Koraput	**Total**	94	1	5	0	0	0	0
	Rural	95	0	4	0	0	0	0
	Urban	89	2	8	0	0	0	0

Disabled Population by age: The percentage of disabled population is less in all the five districts as compared to State's disabled population. Noteworthy point is the disproportionately higher percentage of disabled population residing in the rural areas than urban. The three tribal districts have higher rural percentage than the state.

Comparative disabled population in districts and Orissa has been tabulated below;

Table 7: Population distribution as per disability

Item		Percentage of total state/India population	Percentage of disabled persons in 10-19 years age group	Percentage of disabled persons in 20-29 years age group
Mayurbhanj	**Total**	2.71	15.6	12.5
	Rural	92.6	15.3	12.2
	Urban	7.4	19.5	16.1
Orissa	**Total**	2.96	15.1	13.3
	Rural	85.8	14.9	12.8
	Urban	14.2	16.5	16.5
Khordha	**Total**	2.84	16.5	16.1
	Rural	57.1	14.9	14.4
	Urban	42.9	18.6	18.2
Ganjam	**Total**	2.93	17.2	14.7
	Rural	81.4	17.5	14.6
	Urban	18.6	15.7	15.3
Rayagada	**Total**	2.93	16.7	12.9
	Rural	86	17.1	12.8
	Urban	14	14.3	14.1
Koraput	**Total**	2.63	15.5	12.8
	Rural	87	15.3	12.3
	Urban	13	16.8	16.2

COMPARATIVE SITUATION

Census of 2011 enumerates the total population of Scheduled Tribes at 10.42 Crores which constitutes 8.6 per cent of the population of the country. The presence of this tribal population can be clubbed into five broad regional grouping namely Himalayan, Middle, Western, Southern and Island Regions. Odisha falls under the Middle region along with Bihar, Jharkhand, West Bengal, Madhya Pradesh and Chhattisgarh. All these states have more than 55 per cent of the Indian tribal people. Comparative percentage of ST population in these states has been depicted in the following graph:

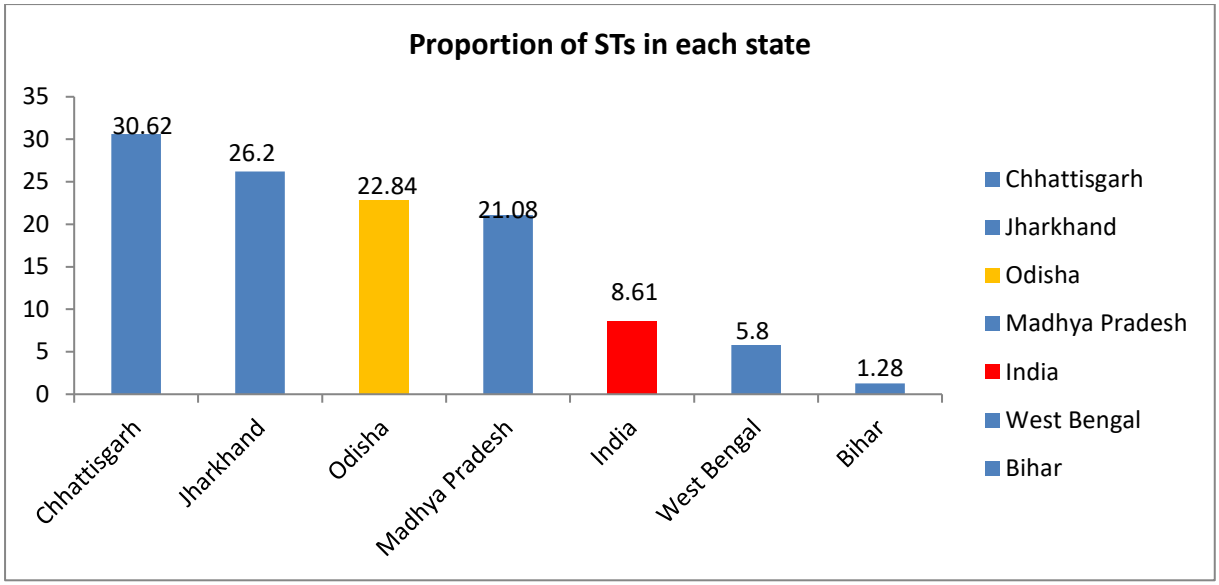


Figure 1: Comparative percentage of ST population in Middle Region States

Regarding the distribution of ST population of India by States, Madhya Pradesh stands first with 14.7%, followed by Maharashtra (10.1%), Odisha (9.2%) followed by the remaining states having tribal population. Odisha has 8 districts with ST population more than 50% and 14 districts with ST population more than 25%

Flagship Programs for education at three levels

Government of India has started three missions since year 2000, one each on elementary education, secondary education and higher education. Each mission takes care of the tribal interest in various ways. The measures under these missions are comprehensive and all-encompassing. Most of the measures are beyond the routine government policy of positive discrimination.

'Rashtriya Uchchatar Shiksha Abhiyan' is for the higher education. It was initiated in September, 2013, alongside introducing the Rajiv Gandhi Fellowship, Centres for Studies in Discrimination and Exclusion, Indira Gandhi National Tribal University and a number of Central Universities, more Indian Institutes of Technology and Indian Institutes of Management in the interest of the weaker sections and the tribals. The mission talks about greater access with special emphasis on rural and tribal areas

HIGHER EDUCATION PROFILE OF ODISHA

Infrastructure

Universities: Odisha has Central, State, Private and Deemed Universities Private along with three institutions of National Importance to support Higher Education in the state. The comparative state & type Wise Number of Universities in Middle Region states have been tabulated below;

Table 8: State & Type Wise Number of Universities in Middle Region states

	Bihar	Chhatisgarh	Jharkhand	Madhya Pradesh	Odisha	West Bengal	All India
Central University	2	1	1	2	1	1	**43**
Institute of National Importance	3	2	1	7	3	5	**75**
State Public University	14	11	7	18	12	23	**329**
State Open University	1	1	0	1	0	1	**13**
State Private University	0	7	3	14	3	2	**197**
Deemed University-Government	1	0	1	1	0	0	**32**
Deemed University-Private	0	0	1	0	2	1	**79**
Grand Total	**22**	**22**	**14**	**43**	**21**	**34**	**799**

As per AISHE 2015-16, Odisha is just ahead of Jharkhand in terms of number of Universities among six middle region states. Specialization wise, general universities are of maximum number is these six states. Odisha (13) is ahead of Chhatisgarh (12) and Jharkhand (9) whereas Madhya Pradesh (25) has the highest number among six states.

Colleges: Among the six middle region states, highest number of colleges are in Madhya Pradesh (2260) and lowest in Jharkhand (328). Odisha has the middle position with 1076 colleges in the state. In terms of college density, all the states have below national average (28) college density. Odisha with 23 colleges per lakh population stands at 2nd position behind Madhya Pradesh (26). Average enrolment per college in Odisha is 661 as compared to 721 of India.

The comparative status in Middle Region states has been depicted below;

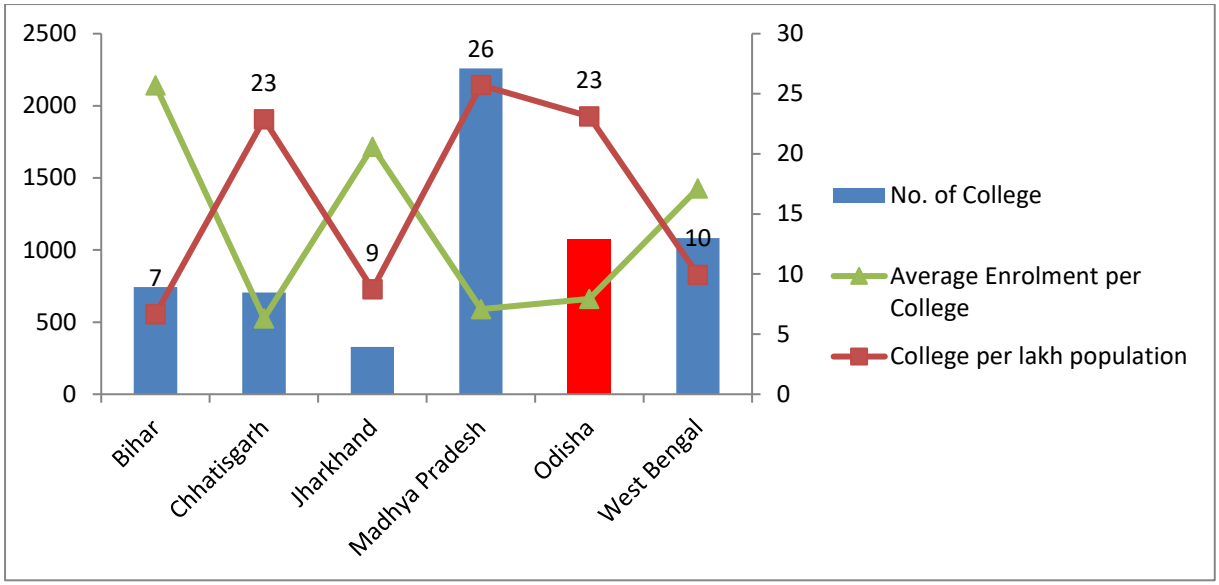


Figure 2: Number of College per Lakh Population (18-23 YEARS) and Average Enrolment per College

Specialization wise, maximum colleges in all the six middle region states are of general category. About 70% of colleges in Odisha are of this category.

Regarding the type of college, numbers of private colleges in India as well as six middle region states are higher than government colleges. The share of private colleges in Odisha is 67% as compared to the national level of 78%. Private colleges are of two types, aided and un-aided. Among all the six middle region states Odisha has the lowest number of un-aided colleges in the private category. At national level, this 82% private colleges fall under this category. In terms of Government colleges, Bihar has highest (75%) followed by Jharkhand (52%), Chhatisgarh (47%), West Bengal (41%) and Odisha (33%).

Odisha has 30 districts and its comparative distribution of colleges in districts has been tabulated below;

Table 9: Comparative distribution of colleges in districts in middle region states

State	Number of Colleges					
	Less than 10	10-19	20-49	50-99	100-199	200-299
Bihar	9	17	9	1	1	0
Chhatisgarh	10	5	6	2	2	0
Jharkhand	13	5	5	1	0	0
Madhya Pradesh	5	10	24	7	1	3
Odisha	6	5	14	4	1	0
West Bengal	0	3	8	5	3	0
All India	**140**	**90**	**174**	**128**	**90**	**25**

***Source**: All India Survey on Higher Education (2014-15)*

Hostel Facility

As per the AISHE 2015-16, Odisha has highest numbers of hostels among six middle region states. The comparative status of hostel facility has been depicted below;

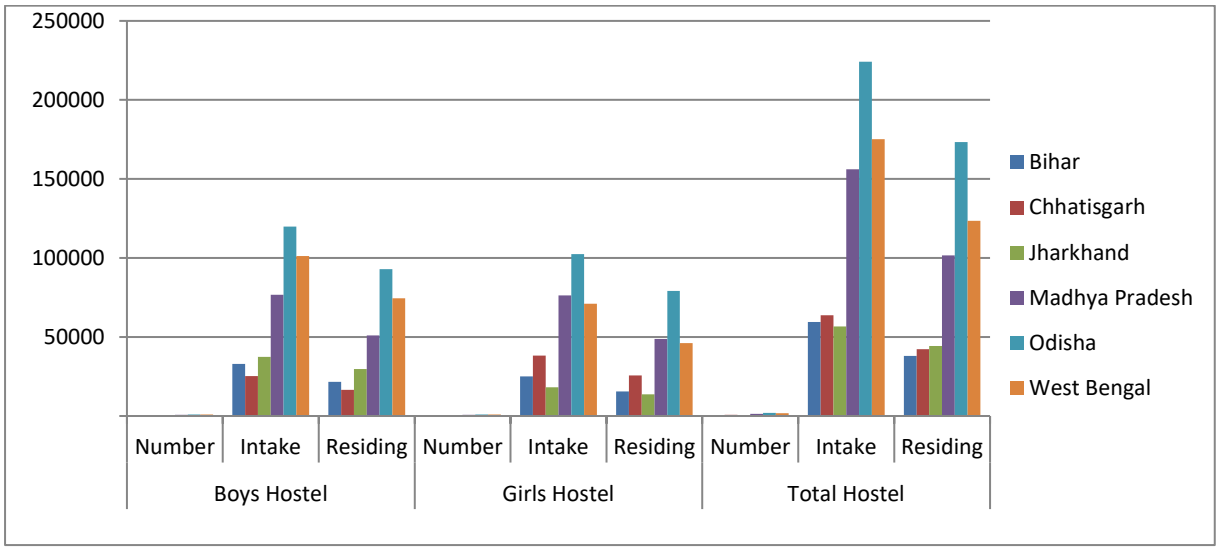


Figure 3: Number of College per Lakh Population (18-23 YEARS) and Average Enrolment per College

As evident from the above graph, occupancy of hostels is not full. In Odisha, occupancy rate of boys, girls and others hostels has been recorded as 77%, 77% and 70% respectively with overall occupancy rate of 77% for all hostels combined.

Enrolment

Overall enrolment of students at undergraduate level has been more than diploma, certificate and integrated courses. The comparative estimated enrolment in six of middle region states has been depicted below;

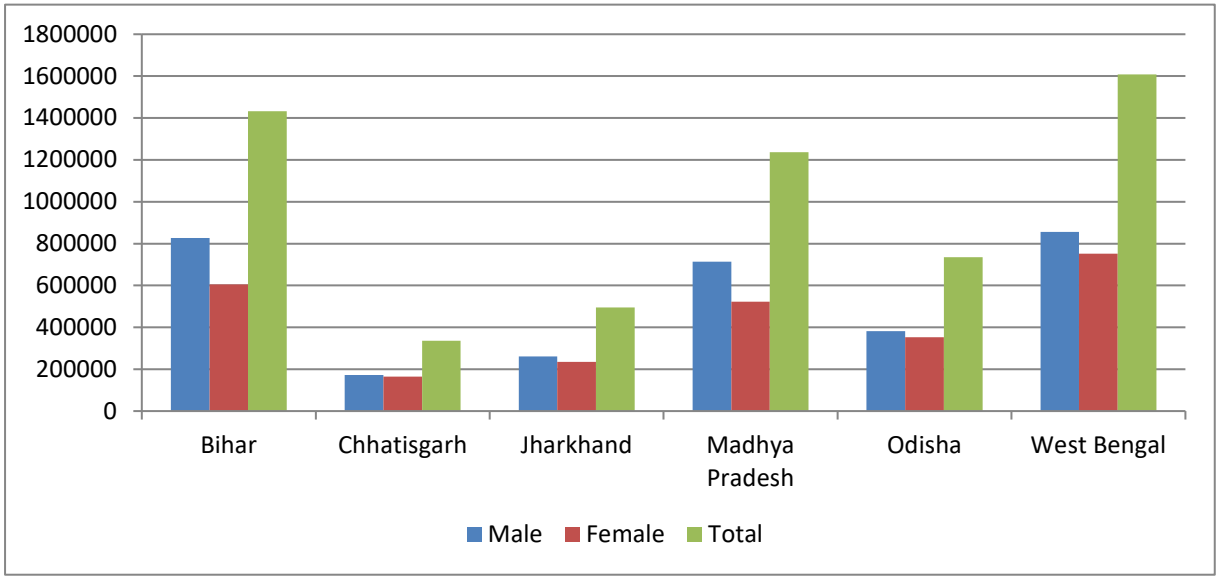


Figure 4: Comparative estimated students' enrolment in six of middle region states

As evident from the graph, in terms of enrolment at undergraduate level, Odisha is behind West Bengal, Bihar and Madhya Pradesh in the middle region. Students' enrolment has been recorded highest in private colleges at national level. Among six states, Odisha has the highest (64%) enrolment whereas Bihar (17%) has the lowest enrolment in private colleges. With regard to estimated enrolment of different social categories, Odisha is positioned at 4th position among six middle region states for enrolment of all categories and Schedules Castes. However for enrolment of Scheduled Tribes, its position is 3rd.

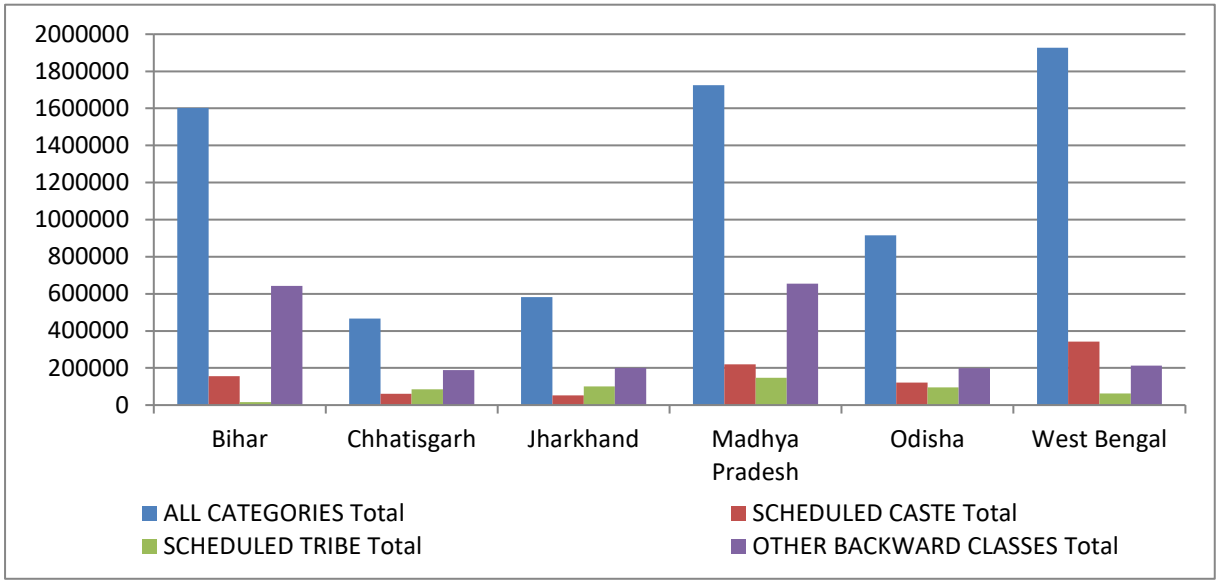


Figure 5: Estimated State-wise Enrolment in various social categories

Gross Enrolment Ratio: As per All India Survey on Higher Education (AISHE) 2015-16, the Gross Enrolment Ratio (GER) in Higher education in India is 24.5, which is calculated for 18-23 years of age group. For Scheduled Castes, it is 19.9 and for Scheduled Tribes, it is 14.2.

The comparative GER in Middle Region states has been depicted below;

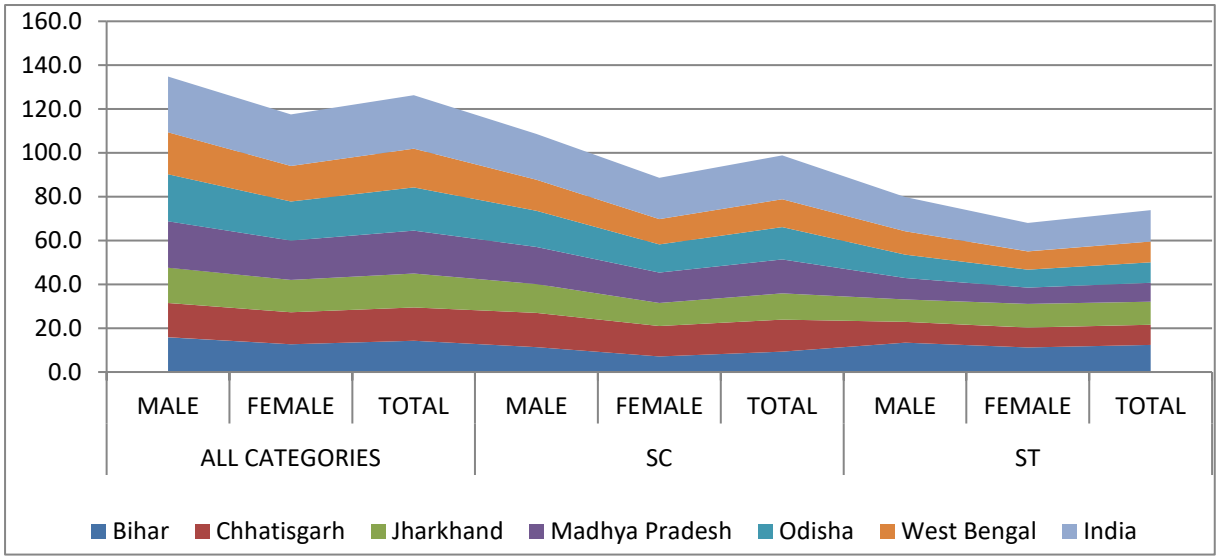


Figure 6: Comparative Gross Enrolment Ratio (GER) in Middle region states

GER for male population at all India level is 25.4 whereas for SC and ST males, it is 20.8 and 15.6 respectively. Similarly GER for female population at all India level is 23.5 and for SC and ST females are 19 and 12.9 respectively. Odisha has the highest GER (19.6) among six middle region states but it is less than the national level. For Scheduled Caste category, Odisha (14.7) is behind Bihar (19.9) and West Bengal (15.5) whereas for Scheduled Tribe category it is behind Bihar (12.3) with 10.5 GER.

Gender Parity Index[76]:

Gender Parity index of all the Middle Region states for all categories is less than the national index (0.92) except for Chhattisgarh (0.93). Among these states, Odisha has the second lowest (0.83) for all categories as well as for Scheduled Castes (0.78). In Schedules Tribes category, Jharkhand, Chhatisgarh and Bihar states have better than Indian index (0.83) whereas Odisha has lower (0.77). It has been depicted in the below graph;

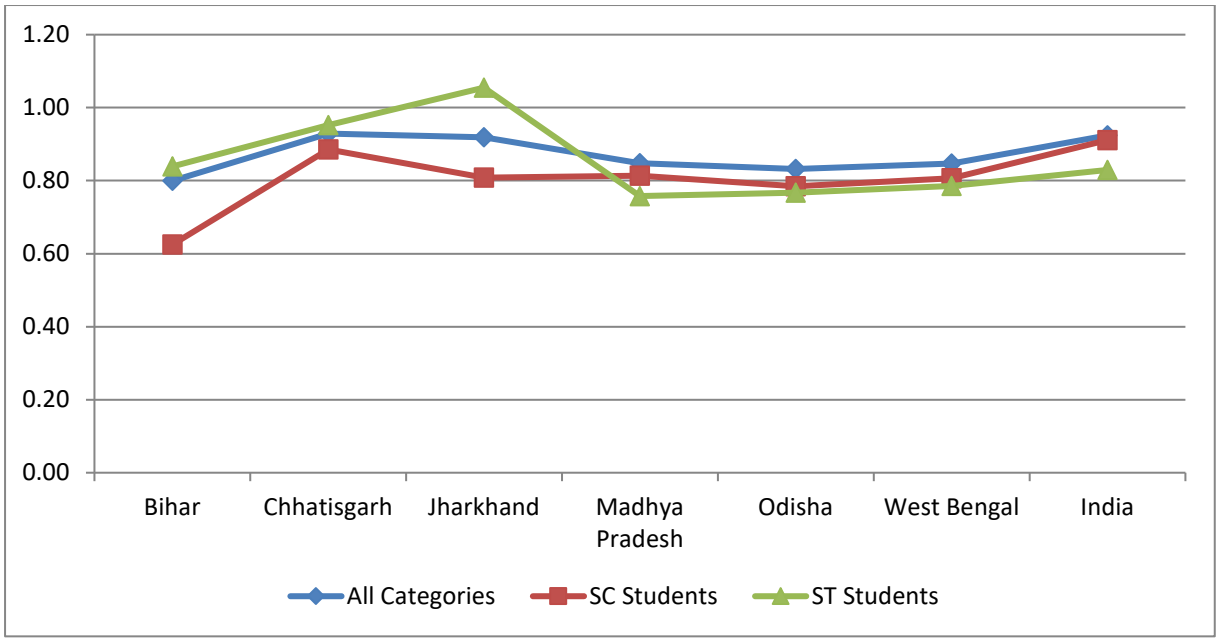


Figure 7: Gender Parity index of all the Middle Region states

State-wise Enrolment in PWD and Minority Community

Among all the middle region states, Madhya Pradesh has the highest followed by West Bengal, Jharkhand and Odisha. With regard to the enrolment of students from minority communities, Odisha fares poorly against the middle region six states and ranks fifth ahead of Chhatisgarh. The comparative status of enrolment of PWD and minority communities has been depicted below;

[76] Gender Parity Index (GPI) in higher education is calculated for 18-23 years of age group. The ratio of the female to male in higher education measures progress towards gender equity and the level of learning opportunities available for women in relation to those available to men. It serves also as a significant indicator of the empowerment of women in society. The data provides state-wise gender parity index for all categories, SC and ST

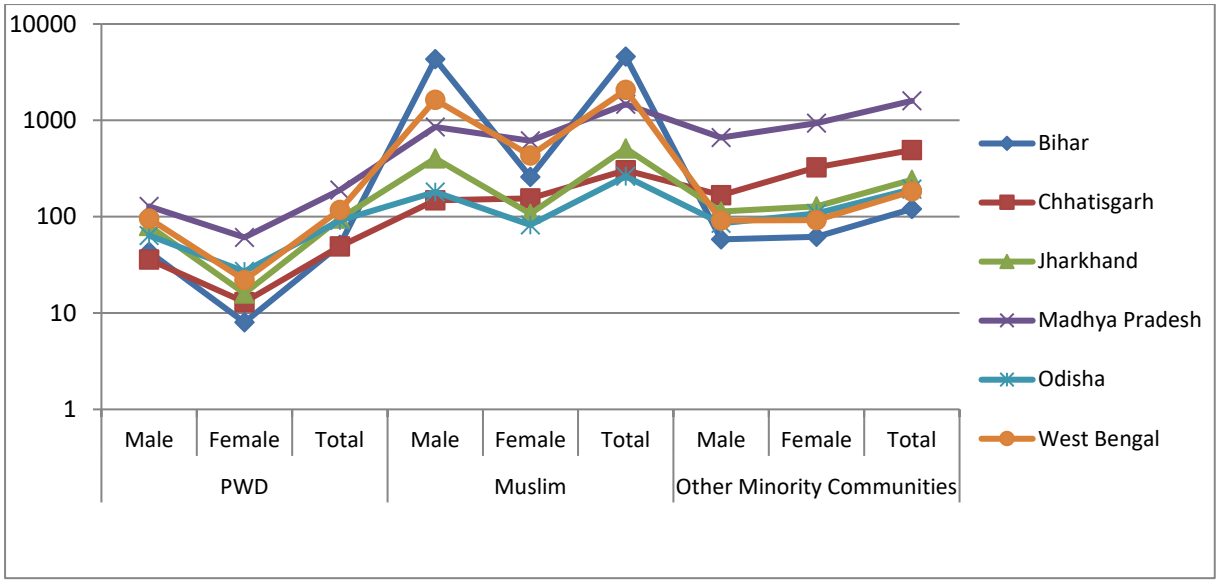


Figure 8: Comparative enrolment in Higher Education of PWD and Minority Communities in Middle region states

State-wise Number of Teachers among various social categories

As per the survey, on the parameter of total number of teachers, Odisha is positioned after Madhya Pradesh and West Bengal. Similarly the number of SC teachers is recorded highest in Madhya Pradesh followed by West Bengal and Odisha.

With regard to hiring teachers from the ST community, Odisha is just ahead of West Bengal and Bihar while for teachers from OBC category, it is again at 3rd position.

The comparative status of teachers from these social categories in six states has been depicted below;

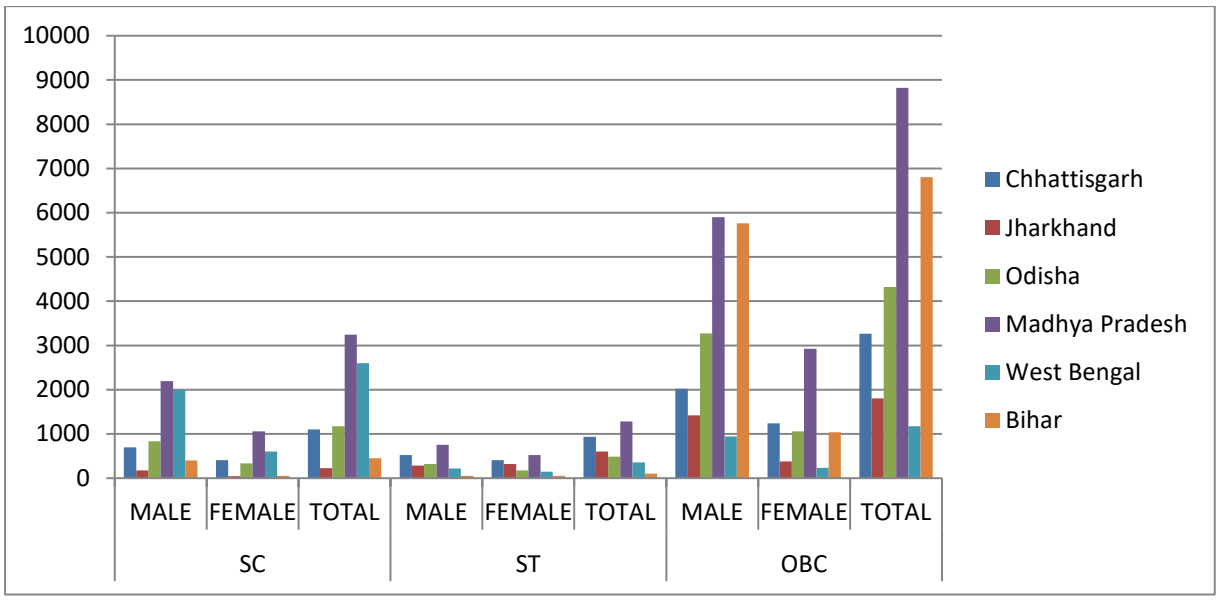


Figure 9: Comparative number of Teachers among various social categories in Middle region states

State & Post-Wise Number of Male & Female Teacher

As per the survey, among middle region states, numbers of teachers are recorded highest in Madhya Pradesh followed by West Bengal and Odisha state. Teachers from SC category are recorded maximum in West Bengal followed by Madhya Pradesh and Odisha. For ST it is recorded maximum in Madhya Pradesh, Chhatisgarh, Jharkhand and Odisha while for OBC category numbers are highest in Madhya Pradesh followed by Bihar and Odisha.

The comparative status of male & female teacher of different social categories in six states has been depicted below;

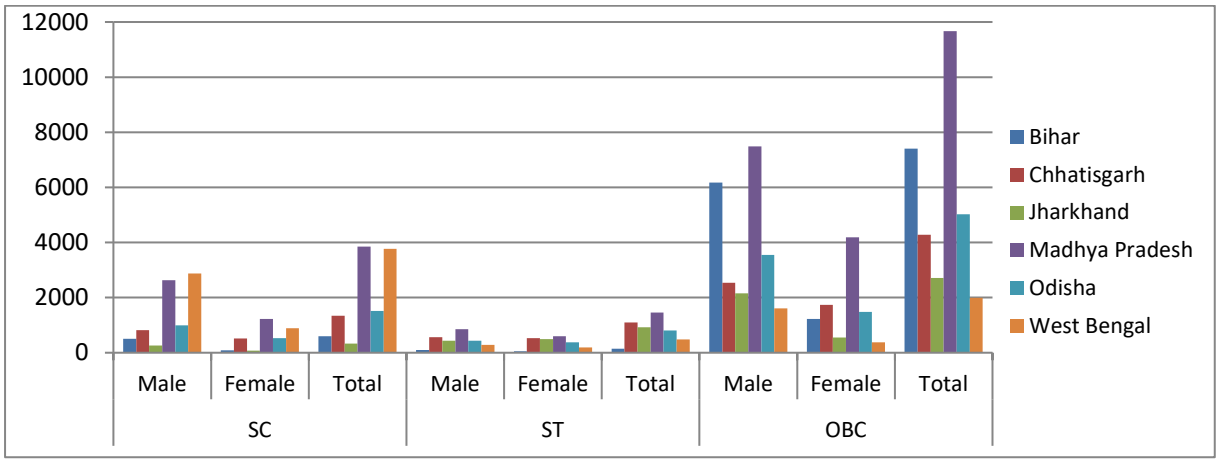


Figure 10: Comparative number of male & female college teachers in Middle region states

Post wise teaching staff: For numbers of 'Reader & Associate' Odisha is at 4th position whereas for 'Lecturer/ Assistant Professor' and 'Demonstrator/ Tutor' post, it is at 2nd position among six middle region states.

Overall in terms of the numbers of teachers, Odisha's comparative position is behind Madhya Pradesh and West Bengal. The comparative status of Post-Wise Number of Male & Female Teacher in six states has been depicted below;

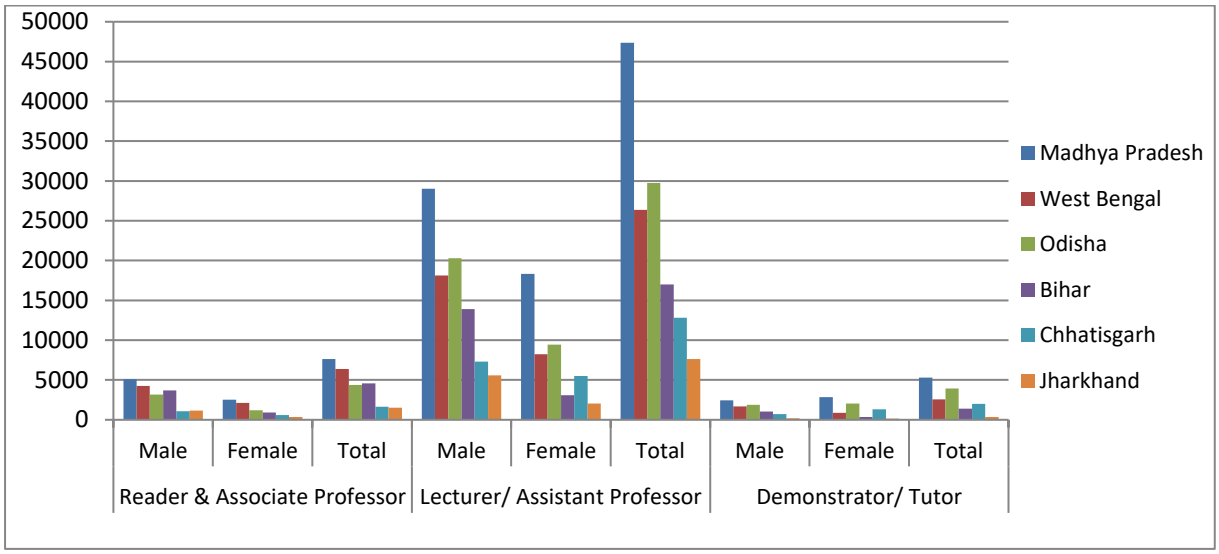


Figure 11: Comparative Post-Wise Number of male & female teacher in Middle region

states

State-wise number of Non-teaching staff among various social categories

As per the survey, among middle region, in terms of numbers of non-teaching staff, Odisha is behind Madhya Pradesh and West Bengal. The comparative status number of non-teaching staff in six states has been depicted below:

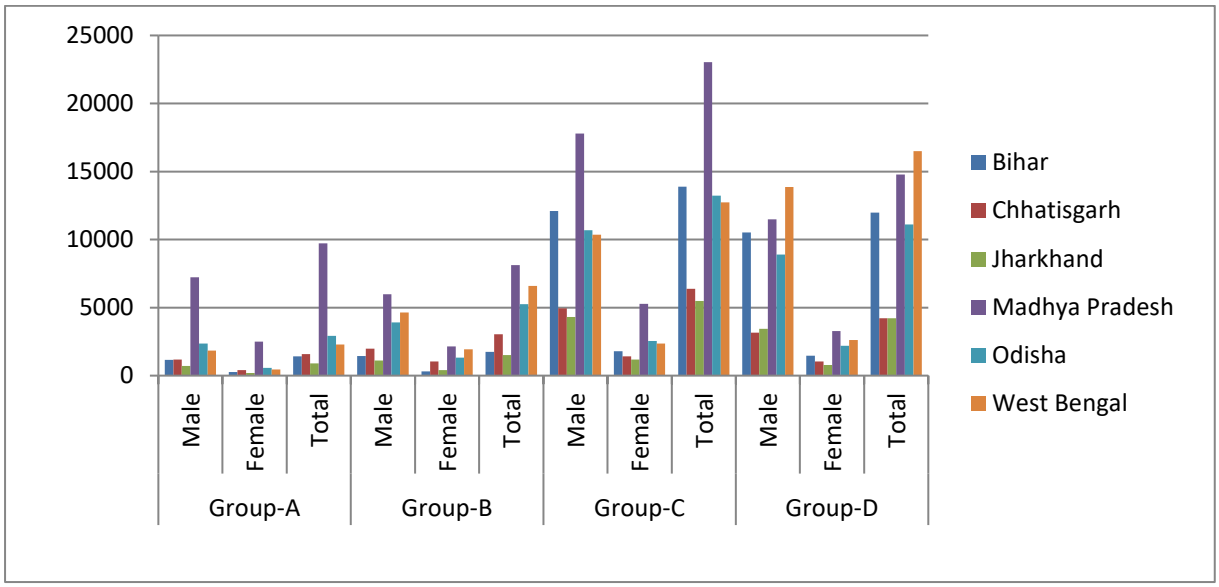


Figure 12: Comparative group wise number of male & female non-teaching staff in Middle region states

Pupil Teacher Ratio in Higher Education

As per the survey, taking into account all types of Institutions (University, Colleges & Stand-Alone Institution), the Pupil Teacher Ratio (PTR) in Odisha is recorded to be better than even the national ratio. The comparative status of it in six states and India has been depicted below;

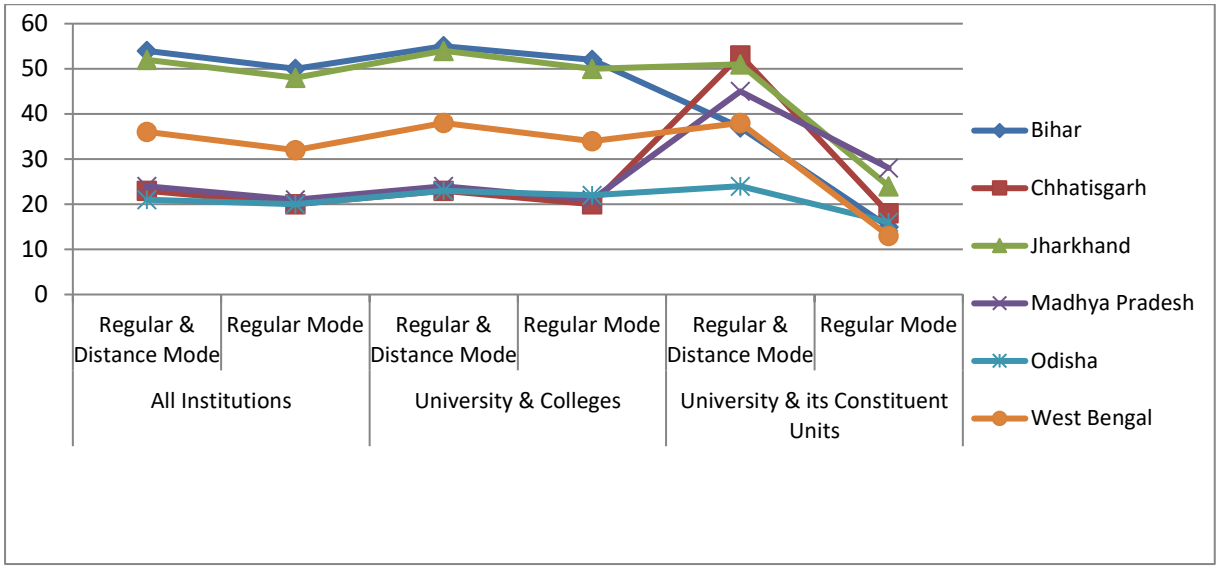


Figure 13: Comparative Pupil Teacher Ration in Middle region states

Out-turn/Pass-Out In Higher Education

As per the survey, the position of Odisha in terms of Out-turn/Pass-Out at Under Graduate level is 4th, at diploma level 3rd, certificate level 1st while for integrated courses level 4th among six middle region states. Overall Odisha is behind Madhya Pradesh, West Bengal and Bihar for Out-turn/Pass-Out at all four levels mentioned above.

Annexure 2 C: Photo Documentation of SSA

Interaction with Principals

N. B. C. College, Kendupadar

Laxmipur Degree College, Koraput

Interaction with faculty

B.B. College, Baiganbadia

Kunja Bihari College, Barang

Interaction with Students

Kshetra Mohan Sci College, Berahampur

Godabaris Mahavidyalaya, Banpur

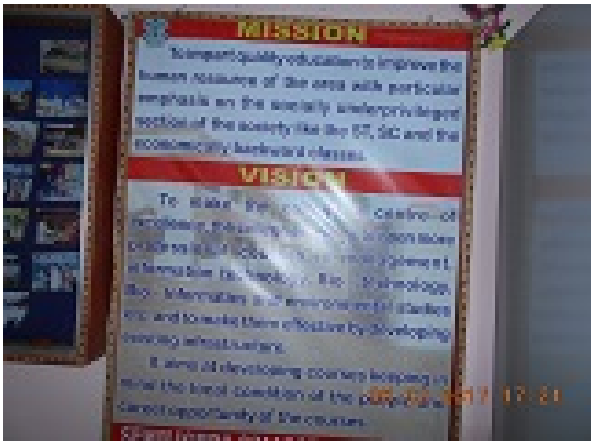
Interaction with parents

Maharishi College of Natural Law, Bhubaneswar Maa Markama Plus Three College,Bissamcuttack

Initiatives relate to governance

N. B. C. College, Kendupadar Godabaris Mahavidyalaya, Banpur

N.S.S camp in R.C.M Science (D) College, Khallikote Maharishi College of Natural Law, Bhubaneswar



Semiliguda College, Semiliguda

Vikram Dev (Auto) College, Jeypore

Vikram Dev (Auto) College, Jeypore

Language Lab in MPC College Baripada

Annexure 3: List of 18 colleges and 2 universities covered under the study

Sl No	Colleges	District	Type Of College
1	R.C.M Science (D) College, Khallikote	Ganjam	Govt. aided
2	Science (A) College, Hinjilicut	Ganjam	Govt. aided
3	Vikram Dev (Auto) College, Jeypore	Koraput	Government
4	Tentulia Sasan Debasthan College, Baragam,	Ganjam	Block Grant
5	Nimina Brundaban Chandra College, Kendupadar,	Ganjam	Block Grant
6	Rayagada Autonomous College, Rayagada,	Rayagada	Govt. aided
7	Maharishi College of Natural Law, Bhubaneswar,	Khurdha	Block Grant
8	Godabaris Mahavidyalaya, Banpur	Khurdha	Govt. aided
9	Gunupur College, Gunupur,	Rayagada	Govt. aided
10	Government Degree College,Koraput	Koraput	Govt
11	Semiliguda College, Semiliguda,	Koraput	Block Grant
12	Maharaja Purna Chandra (A) College ,Baripada	Mayurbhanj	Government
13	B.B. College, Baiganbadia,	Mayurbhanj	Govt. aided
14	Government Women's College, Baripada,	Mayurbhanj	Government
15	Kunja Bihari College, Barang,	Khurdha	Govt. aided
16	Kshetra Mohan Science College, Berahampur	Ganjam	Block Grant
17	Maa Markama Plus Three College,Bissamcuttack	Rayagada	Block Grant
18	Laxmipur Degree College, Laxmipur,	Koraput	Block Grant

Sl No	University	No of Affiliating Colleges
1	North Odisha University	80
2	Sambalpur Univeristy	144

Annexure 4: Report of Stakeholder Consultation Workshop on January 30, 2017 at Khariar, Nuapada district

A consultation workshop on the preliminary findings of the ESSA was organized on January 30, 2017 in Khariar (Autonomous) College, Khariar in Nuapada district. The key stakeholder groups represented at the workshop were: participating colleges, participating universities, representatives of the HED, and, the World Bank team. The workshop was chaired by the Principal Secretary, HED, Government of Odisha. There were 74 participants in the workshop. The list of stakeholders who participated in the workshop is given below.

The workshop started with presentations by the World Bank consultants on the objective, methodology, preliminary findings of the ESSA.

The salient points of discussion in the workshop are presented below:

The Principal Secretary welcomed the participants to the workshop and briefed them about the government's initiatives for improving the higher education in the state, the proposed OHEPEE and on the ESSA. He then outlined the agenda of workshop and urged everyone to actively participate in the discussions.

Environment Systems Assessment

A presentation based on the initial findings of the ESA in eight colleges and one university was made at the workshop. The observations on the positive and negative EHS practices captured during the ESA were presented. These included issues related to location, planning and layout of the campuses, structural safety, building design, facilities for the physically challenged, water management, drainage arrangements, sanitation arrangements, waste management, public and worker safety during construction, toxic/hazardous materials, energy usage, measures for disaster management, fire and electrical safety, first aid and emergency response arrangements.

The key issues identified were inadequate monitoring and handholding of HEIs on EHS aspects relating to building construction, lack of awareness on regulatory requirements and guidelines concerning building construction and environment management, and, lack of capacity building on EHS aspects at all levels. The presentation concluded with recommendations based on the preliminary findings.

The workshop audience, in general, was in agreement with the ESA findings. The key aspects discussed were:

Capacity building on environmental audit: Some of the participants expressed concern on the lack of adequate knowledge on EHS aspects relevant to HEIs. They pointed out the need for extrnal support and/or capacity building on 'Green Audit' and 'Energy Audit' to enable them to take up such audits in their institutions.

Capacity building of Building Committee of HEIs: The HEI representatives shared concern that the lack of knowledge on EHS aspects of civil works limits their participation in the Building Committee.

Awareness on NBC provisions for HEIs: There is very little awareness about the National Building Code (NBC) and its guidelines on infrastructure for educational institutions. A concise guidance document based on the National Building Code (NBC) 2016 could be made available on the HED website for easy access by all HEIs.

Swatch Bharat Mission: A HEI representative requested more clarity on the scope of the UGC's 'Swatch Bharat Mission' guidelines – specifically, if the guidelines apply to HEI campuses or extend to nearby communities through action research programs. HED clarified that the focus should be on the HEI premises.

Presentation on Social Aspects

A presentation based on the findings of the SSA in eight colleges and one university was made at the workshop.

The key issues discussed included factors affecting the the transition from the secondary education to higher education, implicit and explicit barriers faced by the girls and boys from the tribal-dense districts vis a vis other districts, constraints to accessing higher education by ST, SC and girl students, good practices to increase the enrolment and retention of STs, SCs, Girls and disadvantaged groups, recruitment of teachers, perceptions of various stakeholders' and parental attitude towards higher education.

Some of the key issues identified at HEI level included the need to strengthen the existing grievance redressal mechanisms, mismatch between existing infrastructure and student strength and inadequate permanent teaching staff, hostel related concerns in terms of lack of sanitation and safety issues.

Discussion pointers: HEIs representatives were keen to understand the steps that can be undertaken to increase the enrolment of ST, SC students. Representative from the Utkal University explained to them to make efforts for increasing the brand image of the institution, which is also a part of the IDP process so that more students seek admission.. For this HEIs need to improve their institutional infrastructure and academic performance by following a systematic approach. Development of IDP through participative approach and deliberations at different levels is the way forward on this.

Prioritize complementary skill development: The Principal Secretary suggested HEIs to focus on skill development courses so as to link students' learning to their earning while encouraging students to take up entrepreneurial ventures as against the sole dependence on government jobs.

In the concluding session, Principal Secretary thanked World Bank team and applauded the participants for their enthusiasm to develop comprehensive IDP.

Photo Documentation of the Khariar workshop

Annexure 5: Report of Stakeholder Disclosure Workshop on April 26, 2017 at Bhubaneshwar

A state level consultation workshop was held at the 'Nabakrushna Choudhury Centre for Development Studies' in Bhubaneshwar on 26 April, 2017 for deliberation on the draft ESSA report.

Mr. G.V.V. Sarma, Principal Secretary HED; Mr. Parameswaran Balakrishnan, Joint Secretary & SPD OHEPEE; officials of the Odisha State Higher Education Council (OSHEC); representative from the Works Department; representatives from various universities and colleges; and, the World Bank team participated in the workshop. The list of participants is given below.

The workshop started with presentations by the World Bank team on the objective, methodology, key findings and recommendations of the ESSA. The presentations were followed by deliberations focussed on the findings and on inputs to the Program Action Plan.

The salient points of discussion and the decisions taken in the workshop are presented below:

Joint Secretary HED & SPD OHEPEE welcomed the participants to the workshop and briefed them about the 'OHEPEE' and on the ESSA. He then outlined the agenda of workshop and urged everyone to actively participate in the deliberations so that actions could be prioritized for implementation.

Environment Systems Assessment

At the outset, Senior Environment Expert of the World Bank sensitized the audience on the importance of environmental management in the education sector. Referring to state's focus on enhancing the quality of the Higher Education, she mentioned that government and HEIs need to adopt best practices and benchmark standards to achieve this. Elements such as safety of buildings, adequacy of toilets and safe drinking water, hygiene, maintenance of infrastructure, barrier free access, etc., are an integral part of educational quality. Both the government and the HIEs have a role in creation and maintenance of the quality of educational infrastructure.

A presentation on environment, health and safety (EHS) aspects of the ESSA was made by the World Bank consultant. The key EHS issues highlighted during the presentation were: adhoc plans of HEIs for infrastructure expansion, issues of poor building design, issues with structural safety, inadequate and poorly maintained toilets, quality of drinking water, issues related to safety during construction and operation (material safety, lab safety, electrical safety, fire safety), poor waste management practices, barrier free access, etc. The presentation also highlighted some of the good practices observed in some HEIs such as fencing the electrical panels, provision of fire extinguishers, use of fly ash bricks in construction, use of solar energy, etc. The initiatives of HED relevant to EHS were also highlighted. These include: the College Infrastructure Plan (CIP) module on the HED website, developing Common Minimum Standard (CMS) for HEIs including building safety and cleanliness aspects, mandatory NAAC accreditation for HEIs, and, inclusion of EHS aspects in the bid documents of construction agencies. The presentation also covered the list of

activities to be excluded from the program and the recommended actions for strengthening the EHS systems.

The deliberations following the presentation focussed on the following aspects:

Role of HEIs vis-à-vis construction agencies: While construction works are the main responsibility of the construction agencies such as the Works Department, the HEIs being the owner of the institutions, need to proactively engage and consult with the construction agencies during design, construction and maintenance to ensure that the EHS aspects are taken care of.

Integration of EHS aspects into IDGs: A template for preparation of the 'Environmental Audit and Management Plan' has been provided in the ESSA report. The participating HEIs will be facilitated to fill this template as part of their IDP, after the selection process. The use of this template will enable HEIs to identify and fill any existing infrastructure gaps (for example, inadequate toilets, barrier free access, etc.).

Strengthening of EHS aspects in bid documents: A list of EHS laws and regulations relevant for construction has been provided in the ESSA report for inclusion in the bid documents of the construction agencies. The departmental circulars and contract documents of the Works Department does include certain EHS related aspects. However, these can be further strengthened. For example, a set of 2-3 checklists on EHS aspects for various types of works can be developed (in consultation with the World Bank) and annexed to the bid documents.

Capacity building on EHS aspects: The Works Department could provide training to contractors annually on EHS aspects to ensure they remain well versed with these requirements.

EIA for HEIs: While educational institutions have been provided exemption from the EIA requirement by MoEFC, they are required to adhere to the prescribed environmental sustainability guidelines.

Exclusion of Asbestos: While the health risk involved with dismantling of asbestos is the reason for exclusion, there are likely to be several works involving dismantling and replacing existing asbestos materials. One of the suggestions was to allow it to be handled using the standard operating procedures for handling and monitoring acceptable to the World Bank. It was agreed that this issue would be discussed and resolved prior to negotiations.

Presentation of the Social aspects of the ESSA: Key highlights

Core principles of the Bank related to P4R: At the outset, the presentation by the World Bank sensitized the participants about the core principles against which the Bank evaluates the borrowers' systems. These are: 1) no land acquisition is expected to be undertaken from title holders or non-title holders, = the program design is expected to have a positive inclusionary impact on the disadvantaged groups (ST, SC and girls students) and lastly, the program is expected to positively influence the access to HE in certain districts/blocks riddled with social conflicts.

Key findings related to the social assessment of the ESSA:

Summary of field findings: Some of the concerns that prevent students from participating include (i) implicit and explicit information-related barriers (knowledge about the application procedure, courses offered and future possibilities); (ii) socio-economic and socio-cultural issues (expenses incurred on food by day scholars and hostel students, cost of travel, communication gaps between students and teachers, language issues, parental attitude towards safety concerns especially for girl students, clashing of exams with the harvest season, etc.); (iii) perceived lack of value and relevance in higher education; (iv) information asymmetry related to employment opportunities and (v) the larger social context with respect to migration and security-related risks also are seen to have an impact on the sustainable participation of tribal boys and girls in higher education institutes of the state.

Issues discussed at length:

Enrolment of SC, ST students in HEIs: The policy of the GoO to increase in the reserved seats for SC and ST students along with provision of scholarships has had a positive impact on enrolment. It was observed that barriers impacting SC, ST student's access to HEIs were gender-differentiated in nature. The key suggestions mentioned by the representatives of HEIs included creating awareness among SC and ST communities for higher education, introducing the proctorial system in HEI, providing English language lessons, better provision of hostels facilities both in terms of infrastructure and safety conditions, formation of platforms in HEIs for SC/ST students for interaction, adequate students representation in various committees and initiating bridge courses in which one teacher is responsible for 7-8 students.

Hostels: Utilization of hostel facilities at the state level compare favourably to the national average as well as other states. Several of the 126 NAAC accredited colleges being considered under OHEPEE do not have hostel facilities at present. However, the government plan to address the existing gap.

Outreach programs, bridge courses: To stem the drop-out at the +2 level and encourage more students to enrol in higher education, the need for outreach campaigns informing the students about the availability of various courses was underlined. Along with this, bridge courses in English, +2 level mathematics and other relevant subjects need to be introduced to improve on-time graduation and retention of students, especially in districts with high SC and ST population. Representatives of HEIs suggested undertaking area specific campaign by engaging with Post Graduate students of that area.

Collaborating with other departments: Principal Secretary gave the suggestion of involving Department of Social Justice, ST & SC Development, and Minorities & Backward Classes Welfare Department for ensuring that this is included in agenda of District, Block and Village level meeting of the Panchayati Raj Institutions. This will also help HED to identify the reasons for SC/ST students not getting enrolled in Higher Education and plan for corrective steps accordingly. Introducing courses with practical orientation rather than classroom teaching was suggested to improve the relevance of degree courses among SC and ST students. Tying up with polytechnics or skill development agency to build a pipeline of good trainers at the HEI level was suggested.

Skill development and entrepreneurship: Skilling can be introduced through CBCS, association with an external agency, entrepreneurship incubation centres at HEIs, etc. SC/ST

students while learning skills in these centres can also earn some money which will be helpful to provide some financial help to their families. Although UGC is supporting Human Resource Development centres in universities, it is yet to be implemented. This requires sensitizing teachers to take initiatives in setting up labs in the universities.

The view amongst HEI management needs to be that skill development courses are as important as classroom learning. Further deliberations will be required to better manage introduction of skill development courses under CBCS. For this a small committee of representatives from Universities and colleges present in the workshop was created to come up with action plan.

Principal Secretary in the concluding session stated that draft list of participating HEIs has been prepared after using very rigorous selection criteria. Secondly to ensure the compliance to annual performance indicators, slightly ambitious targets will be given to institutions so that they could achieve it and continue to get IDG. Finally he thanked everyone for actively participating in the discussions.

Photo Documentation of the workshop

Annexure 6: List of Key Persons met

Name of the Institution	Name of the Person	Designation	Contact No	Email Id
North Orissa University	Prof. P.K. Mishra	Vice Chancellor	9437570288	vcnou@rediffmail.com
	Prof. A.K Biswal	Head of Civil Works	9437230626	
	Mr. Parsun Mohanata	Faculty member of Building committee	9437653355	
	Dr. J.K . Mantri	Procurement Head	8658658583	jkmantri@gmail.com
	Sri S. Nayak	Registrar	9437149660	Registrarnou@gmail.com
Sambalpur University	Prof. Chitranjan Tripathy	Vice Chancellor	9437166212	uc@suniv.ac.in
	Mr. Santosh Kumar Mohanty	A.E O/C (Dev)	9439536920	somorissa@yahoo.com
	Dr. M. Muthu Kumar	Registrar	9438494090	reg@suniv.ac.in
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	Dr. S. K . Patanayak	Reader - Dept. Env. Sci.	9439809787	skp.envsc@gmail.com
	Dr. E. Kariali	Head - School or Life Science	9937304809	ekamberk@rediffmal.com
	Prof. S.K Sahu	Prof. & Head Env. Sci	9668220609	sahusanjat @rediffmail.com
Maharishi College of Natural Law	Dr. Laxmi Narayan Mohapatra	Principal	9437020962	drlnm.phd@gmail.com
	Dr. B.K Barik	Reader In Chemistry	9437308821	bijayakumarbarik1961@gmail.com

Name of the Institution	Name of the Person	Designation	Contact No	Email Id
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	Dr. A. K . Datra	Lect. History	9437033054	
	Sri. R. K. Samantray	Head Clerk	9937020173	
Godavaris Mahavidyalaya, Banpur	Prof. Debadutta Mohanty	Principal	9337740118	
	R. K Rath	Reader	9437438946	
	P.K Hota	Reader	9437304629	
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	B. B . Mohanty	Reader in Commerce	9439082186	
	B. C. Dash	Reader in Pol. Science	9439178901	
Maa Markama +3 College , Bissam Cuttack	Lt. Botu Rabi Sankar	Principal - In - charge	9438447744	b4b02rabi@gmail.com
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	Dr. Aswini Kumar Panda	Lecturer In - History	9438206780	aswinimuniguda@gmail.com
	Sri Niranjana Panday	Institutional Coordinator	9439264486	nirapol.mmc@gmail.com.

Name of the Institution	Name of the Person	Designation	Contact No	Email Id
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Name of the Institution	Name of the Person	Designation	Contact No	Email Id
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