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Environment and Social Assessment

SKILLS STRENGTHENING FOR INDUSTRIAL VALUE ENHANCEMENT

STRIVE

P-156867

ENVIRONMENT AND SOCIAL SYSTEMS ASSESSMENT

SKILLS STRENGTHENING FOR INDUSTRIAL VALUE ENHANCEMENT OPERATION (STRIVE) (P156867)

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Abbreviations and Acronyms

ACC	Asbestos Concrete Cement
AITT	All India Trade Test
ATI	Advance Training Institutes
BIS	Bureau of Indian Standards
BP	Bank Policy
CoE	Centre of Excellence
COPA	Computer Operator and Programming Assistant
CII	Confederation of Indian Industries
CITS	Craft Instructors' Training Scheme
CSTRI	Central Staff Training and Research Institute
CTS	Craftsman Training Scheme
DDG	Deputy Director General
DGT	Director General Training
DET	Directorate of Employment and Training
DoSE	Directorate of Skills and Entrepreneurship
ESI	Employees' State Insurance
ESSA	Environmental and Social Systems Assessment
E-waste	Electronic waste
FICCI	Federation of Indian Chambers of Commerce and Industry
FLFP	Female labor in force participation
GoI	Government of India
IMC	Institute Management Committee
ITI	Industrial Training Centers
kW	Kilowatt
LWE	Left Wing Extremism
MIS	Management Information System
mn	million
MoSDE	Ministry of Skills Development and Entrepreneurship
MSME	Micro, Small and Medium, Enterprises
NAC	National Apprenticeship Certificate
NBC	National Building Code
NCVT	National Council for Vocational training
NGO	Non-Governmental Organization
SDC	Skill Development Center
NE	North East
NLTA	Non-Lending Technical Assistance
NSO	National Occupational Standards
NSS	National Sample Survey
NSSO	National Sample Survey Organisation
NTC	National Trade Certificate
NVTI	National Vocational Training Institute
OBC	Other backward castes
OHS	Occupational Health and Safety
OJT	On Job Training

OM	Operations Manual
PforR	Program for Results
PSU	Public Sector Units
PwD	People with disabilities
PWD	Public Works Department
RDAT	Regional Directorate for Apprenticeship Training
RVTI	Regional Vocational Training Institute
SC	Scheduled Caste
SMME	Small, Medium and Micro-enterprises
ST	Scheduled Tribe
SSC	Sector Skills Council
STRIVE	Skill Strengthening for Industrial Value Enhancement and Operation
TEVT	Technical Education and Vocational Training
ToT	Training of Trainers
VTC	Vocational Training Centre
VTIP	Vocational Training Improvement Project

Executive Summary

1. Skills Strengthening for Industrial Value Enhancement (STRIVE) Operation essentially aims at *improving the relevance and efficiency of vocational training provided through Industrial Training Institutes (ITI) and apprenticeship programs* and the interventions planned are expected to result in substantial social and environmental benefits to the society at large, especially, to the poor and vulnerable sections. Adverse impacts that are sensitive, diverse and unprecedented on the environment and/or people are not foreseen. However, planned efforts are essential to ensure that the proposed interventions do result in sustainable social and environmental benefits. Further, the lending instruments adopted for the purpose are twofold: one, Program for Results Operation which covers the bulk of the credit; and the other Investment Project Financing, meant to support the Technical Assistance component. Consequently, the social and environmental management have been planned separately for the two lending streams.

2. This note describes the assessments made for the Program for Results (P4R) stream which has the following four key results: (i) Improved performance of ITIs; (ii) Increased capacities of state governments to support ITIs and apprenticeship training; (iii) Improved teaching and learning; and (iv) Improved and broadened apprenticeship training. There are 6 Disbursements Linked Indicators (DLIs) specific to the Program. These are: (i) Increase in the number of graduates from ITIs that have signed Performance-Based Grant Agreements; (ii) Improvement in industrial training and employment outcomes for trainees and graduates of ITIs that have signed Performance-Based Grant Agreements; (iii) Reduction in ITIs' trainer vacancies and improvements in training of trainers; (iv) Number of Participating States that have conducted tracer studies; (v) Number of industry clusters that have introduced at least 2 different apprenticeship programs within their participating (member) industries; (vii) Increase in female enrollment rate in ITIs with Performance-Based Grant Agreements and industry clusters receiving Industry Apprenticeship Initiative (IAI) Grants.[1]

3. For the P4R lending stream, the Bank task team has carried out an assessment of the Environmental and Social Systems (ESSA) as part of the program preparation, to gauge the adequacy of environmental and social systems at national, state as well as ITI levels against the six core principles. This has enabled assessing the extent to which the program systems promote environmental and social sustainability; avoid, minimize 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 and vulnerable groups; and, avoid social conflicts. Further, the team, jointly with the borrower, has identified the gaps and actions thereof for enhancing the program systems and mitigating environmental and social risks.

4. Towards the preparation of ESSA, the task team visited some twenty-five ITIs across the country in the states of Maharashtra, Jharkhand, Telangana, Assam, Delhi, Haryana, Tamil Nadu, Odisha and Uttarakhand and held consultations with various stakeholders including government officials and industry partners at the states who take in apprentices as well as trainers and trainees. The ESSA along with the action plan have been discussed with, and buy-in

[1] The program is complemented by a technical assistance component that aims at: Strengthened capacity in program management, advocacy, monitoring and evaluation by MSDE and state governments

secured from the borrower and disclosed widely through national and regional workshops as well as electronically on various websites and through Bank's info-shop.

I Environment Assessment

5. The Environment assessment included a combination of discussions with stakeholders, visits to workshops, other facilities and the campus of ITIs. Also, visits were made to an ATI and private sector players and their shop floors where ITI apprentices may work, and a review of existing regulatory relevant frameworks. Based on observations from these sources of information, potential impacts of the program actions were assessed. The key findings and action plan are given here.

Key Strengths of System

6. National and state regulations to safeguard the environment are in place. Legislation exists for environment related actions that are likely to occur as a part of STRIVE activities. Institutional systems to monitor and implement environment legislation are well defined. ITIs provide flexibility in management resulting in some ITIs with active IMCs or principals have taken up various activities which support both good management of the ITI and address some environmental sustainability concerns, such as solar power generation, water recycling and harvesting and trying to construct green buildings. The activities under this program are expected to have low to moderate environmental impacts, with most of these impacts localized to the ITIs. Therefore, it is expected that this will be a B category program.

Key Concerns and Opportunities

7. While some of the ITI faculty and State level officials are aware of basic environment related good practices, Actual implementation of required environmental actions and regulations, and their monitoring is relatively weak. Therefore, some concerns were identified by the assessment and would need to be addressed as a part of STRIVE's actions.

Risks	Opportunities
Institutional System: ITIs have a well-defined institutional management structure, and also have a monitoring system in place; and is mainly geared towards to the everyday running of the institutes. At the State and National level there are also well developed environmental management institutional systems. Therefore, there are systems that can be used to manage required environment issues at the individual institute and state and national levels.	
Attention to environment related concerns, and environment management is dependent on individual initiatives, as systems to address environment concerns are not well developed. Monitoring at national and state level looks at limited areas, and yet to include environment related actions Big industries have well developed systems to manage apprenticeship. Similar systems may not exist for smaller industries.	Create a robust and comprehensive monitoring systems that includes key environmental issues and also reduces environmental footprint of ITI education Make apprentice system such as to ensure basic standards for all industries Develop appropriate safety management systems for ITIs Create a robust waste management system, that address regulatory requirements, improve environmental management and

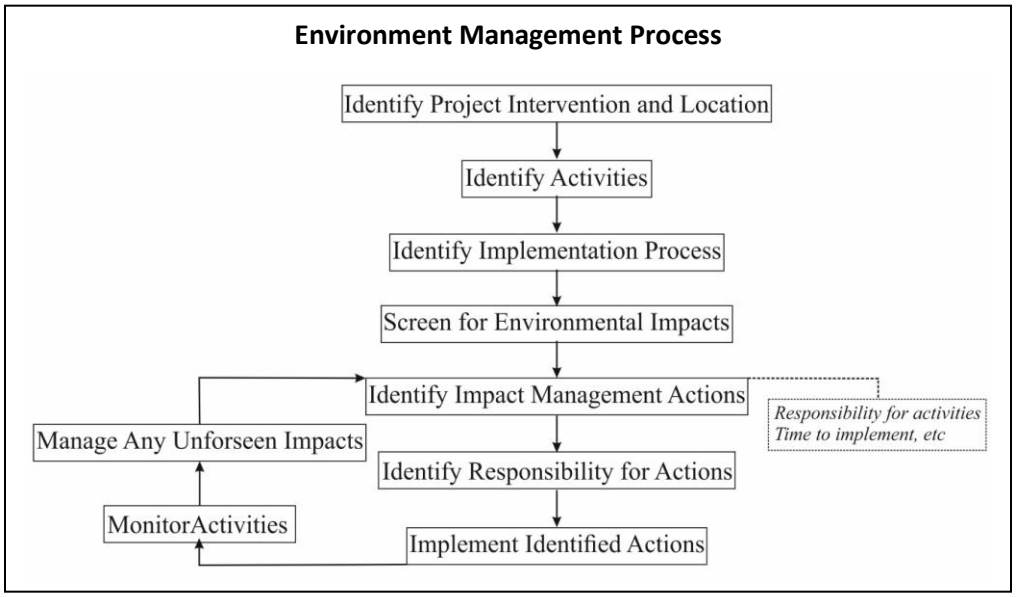
Management of safety and systems to address safety concerns are presently weak Systems for waste management limited, resulting in weak implementation of waste related environment regulations	create a safe learning environment
Infrastructure and management of systems development, water supply, sanitation and drainage: Basic infrastructure is available at most ITIs, with water supply assured at most institutes; with some even undertaking water harvesting to supplement their supply.	
Limited disaster preparedness at ITIs, with focus mainly on study related infrastructure. Sanitation infrastructure exists, but needs more attention, some ITIs do not have separate toilets for girls Water supply usually identified in ITIs, however, in water scare areas water availability continues to be a concern Solid and liquid waste management needs improvement with issues of and spillage and pollution from poor waste storage systems Infrastructure design; including toilets, presently addresses access to the physically handicapped in a limited way	Create appropriate infrastructure, including safety alarms, ensure escape routes identified and available Ensure appropriate sanitation for all students including girls separately Consider water harvesting, recycling and wise use of water on campuses Identify appropriate solid and liquid waste management system that creates a healthy campus and reduces risk of pollution All infrastructure design developed to consider requirements of handicapped students to ensure their access to ITI education
Safety and Learning: Considering the ITI education imparts education on many mechanical courses, a basic module on safety exists. A number of workshops visited also had, though often in limited numbers, safety gear to use during practicals.	
Workshop safety and Occupational Health Safety (OHS) on ITI campuses presently partially addressed, trainers with limited understanding of OHS. Major industrial partners for apprenticeship, address safety, however, safety to students during apprenticeship in smaller industries may not be adequate. Construction site management weak and risks of accidents to labor and campus users alike. Emergency and disaster management systems and plans presently not in place.	Create a safe environment in ITIs, and during apprenticeship, resulting in overall increased safety on shop floor for industries employing ITI graduates and those passing out from apprenticeship programs. Reduce accidents and mishaps at construction sites. Staff adequately trained to address safety issues and emergency or disaster situations, resulting in reduced risk and accidents.
Material and Waste Management: As a part of the teaching requirements at ITIs, material procurement and the disposal of waste is regular activity. The ITIs and their corresponding State Directorates have material procurement and waste management systems identified.	
Most waste management systems are very basic, resulting in poor disposal of waste and inadequate compliance to existing legislation Hazardous and toxic waste need greater	All states from Directorate level have a well-developed waste management system that reduces waste and pollution, creates healthier campuses and ensure compliance to legislation

attention as present management risks pollution, injury or other health and environment pollution concerns Material management is dependent on the management of individual ITIs. Therefore, while some may have well managed systems, in others poor material management may increase the risk of accidents and wastage due to poor storage.	Reduced wastage of material with improved storage systems, and more efficient use of resources

Recommendations

8. To ensure compliance to required environmental standards, there is a need to identify a standard process that may be used, regardless of capacity and interest of individual ITI staff members and principals. Such a process is suggested in the figure alongside. To ensure an environmentally robust system some areas that would need to be addressed include,

- Robust system for management of construction and modernization activities planned under the program
- Appropriate waste and material management and disposal system that includes ensuring all identified regulations are followed
- Introduction of OHS and safety education as a part of ITI and apprenticeship education and ensure all trainees follow safety norms
- Creation of capacity of staff and trainers to address safety, and handle emergencies and disasters
- Develop required water supply, sanitation and drainage infrastructure



Program Actions

9. To address identified concerns and ensure a basic understanding of safety and ensure appropriate implementation of material, waste and other required environmental standards and adherence to existing legal environmental framework, suggested program actions are given below.

Action	Timeline	Responsibility	Completion measurement
Environmental management systems in place and functioning in ITIs	Starting within 6 months of program start, and continue through program duration	State level Directorate, ITIs	Trained ITI nodal environment staff in place and required environment legislations followed and waste management and safety systems functional. Required water supply, sanitation and drainage systems in place and functional. As required, water harvesting and conservation and water saving systems in place.
Students aware of and practice good safety norms in ITI	Start with first semester of each course, and repeated 6 monthly appreciation course.	State level Directorate, ITIs	Students use safety gear in workshop, and have been clearly articulate OHS measures and use required measures in their day-to-day working
Apprenticeship enforce good OHS and waste management standards	Beginning of apprenticeship and repeat every 6 months	Industry clusters	Apprentices are aware of and practice good OHS measures. Proper waste management systems in place and functional, in smaller industries, in case not already there.

I Social Assessment

10. Social Assessment was carried out through extensive stakeholder consultations at various levels- national, state and ITIs. Areas of enquiry hovered around: availability of lands for civil construction; functioning and performance of training and apprentice activities as reflected in inclusion and equity; and skill development in conflict areas. Salient findings discovered are presented below.

- **Lands**. Most ITI s and/ or Department of Training and Employment in all the states have surplus lands on their campuses. So, no land need to be acquired involuntarily for civil construction works.
- **Inclusion.** In India, the society is quite diverse and heterogeneous comprising several sub-groups based on resource endowment, gender, caste, ethnicity, religion and geographical positioning (rural/ urban/ hill / forests/ coastal areas etc.). Ensuring inclusion of all the sub groups is a major challenge. Normally excluded sub groups are: women, Scheduled Castes (SC), Scheduled Tribes (ST), Religious Minorities, Rural Poor and Differently Abled persons. Ensuring inclusion of all these sub-groups is a major challenge, given a variety of barriers – geographical, social, economic and cultural—and other difficulties and deficiencies. Recognizing this, state and central governments have provided for discriminatory targeting provisions.
- Accordingly, certain seats are reserved for women, SCs, STs and Other Backward Communities (OBCs) in all education institutes of the country including the ITIs. The states do strive to achieve the government norm for reservations. However, the results are below expectations. Enrolment relative to the seats existing, overall, falls short by about 15%. Women enrolment varies substantially across the states, a good number of them are quite low. So is the case with SCs and STs. Women in mainstream engineering trades are almost negligible. Their enrolment is confined to non-engineering trades like dress making, Computer Operations and Program Assistant (COPA), surface ornamentation etc. This has led to a gendered dichotomy wherein there are some trades which have only male students and there are others, all female students. Even Women-only ITIs have not been able to sustain, begun to enroll men as well.
- Seats meant for SCs are normally not filled to full extent, many vacancies exists and late are filled by other categories. Likewise, ST representation in the ITIs is low. There are ITI s established in tribal areas, who perform at sub-optimal levels due to: (i) choice of courses available does not match fully with the market requirements; (ii) inadequate infrastructure facility to enable proper hands on job training; and (iii) non availability of well-trained instructors. ITIs meant for minorities do not suffer from number of enrollments. But, the skills/ trades offered are not only very few but also in most cases, may not the full/ desired requirements. Consequently, many of them prefer studying at ITI s far away, which may entail travelling distances as high as 80 km one way.
- The tribal Departments of the states pays stipend to the students admitted in ITIs. However, the amount of stipend varies from state to state. In Maharashtra the Tribal Department pays a stipend of Rs. 500 per month to Tribal girls for residential courses and Rs. 600 per month for non-residential courses.
- In Maharashtra there is unique program known as *Ashram School ITIs* for tribals. These ITIs are located in the Ashram residential schools for the tribals and cater to only girls. The location of the ITI within the girls' school campus gives a level of "comfort" for the ITI students. Thus it is easy for them to mobilize students from nearby areas as the environment is "non-threatening". As a result, these Ashram School ITIs are able to achieve admission of girls.
- *Lok Seva Kendra* is another interesting innovation of Government of Maharashtra for ITIs located in the tribal areas. Under this scheme the ITIs are used as a common facility for the local youth who have received ITI training to use it as a production center with a payment of nominal fees. Though conceptualized as for the ITI students to take up self-

employment with very little capital cost, the scheme has not been very successful due to lack of proper implementation.

- The ITIs are also very poor in terms of fulfilling the quota of inclusion of people with disabilities mostly due to poor and in-appropriate infrastructure. There are very few instructors trained to train this category of persons.
- **Vacancy.** There are a large number of staff vacancies in almost all the ITI s. This has meant hiring of temporary and/ or contractual staff on a part time who are not sufficiently paid. Likewise, there are very few personnel at the state department level, rendering monitoring and mentoring very poor.
- **Curriculum.** The present curriculum of the ITIs has a mandatory employability module which is included in every curriculum. However there is a lack of appropriately trained teacher to teach this information to students.
- **Training of Trainers**. Trainers in the ITIs are rarely trained because: one, regular staff are very few and cannot be spared; and two, temporary/ contractual staff are not considered for training. This is compounded by the lack of availability of short term training for trainers. As a result trainings are ad hoc and without any institutional perspective development planning.
- **Involvement of Private Sector.** Active involvement of private sector in various capacities has very positive impact on the ITIs. This is visible in terms of availability of equipment and machinery in PPP ITIs as well as training quality and placement. However, successful PPPs are very few.
- **Apprenticeship.** . Number of students securing apprenticeship varies between 20- 50%, average being 30%. However, women apprentice are very few (about 7%). The range of programs for women were not attractive for women. Under the amendment of the apprenticeship act the range of training programs has expanded beyond engineering programs which is likely to increase the participation of women as has been shown in many other countries.). Post placement monitoring and mentoring, by ITI and / or Regional Directorate for Apprenticeship Training (RDAT) are very rare, with the result, assessing working conditions and work satisfaction and feedback thereof remain in dark..
- **Conflict /LWE Areas.** These areas suffer from geographical isolation, difficult terrain, poor connectivity, low social and economic development, and lack of local level employment opportunities. Apart from the inadequate infrastructure and lack of trained full time staff, relevance and utility of the courses offered needs a thorough re-visit.

12. Status/ Strength/Risks/ Opportunities

Land		
Status: *Civil works are envisaged in the program. Lands are required for this. Sufficient lands are available for civil construction works on the government campuses.*		
Key Strengths	**Risks**	**Opportunities**
Civil works will be carried out either on the lands owned by the government or other government agencies.	Key risk relates to inadequate monitoring.	The program need not and will not resort to involuntary land acquisition.

Inclusion		
Status: *Program recognizes that the targeted clientele is quite diverse and heterogeneous and comprises several sub groups. Strategies need to be drawn to ensure inclusion and equity as well as in providing institutional platforms for participation by SCs, STs, Women, Religious Minority groups, differently abled and other poor and vulnerable persons including the residents of Left Wing Extremism Areas.* *ESSA also reveals that key to the success depends upon the Performance of the ITI s which currently is not uniformly good. While some have excelled in attracting the trainees and enabling them placements, many are struggling hard to keep the institutions running. Lack of adequate staff and infrastructure as well as financial resources is quite common to almost all the ITIs. Likewise, private Sector participation helps in enhancing the effectiveness of the training and post training interventions. Linkage with the industries ultimately determines the nature and extent of success.*		
Key Strengths	**Risks**	**Opportunities**
Strong National and State political as well as legal support exists for implementing the Inclusion agenda.	Key risk relate to the staffing and adequacy of infrastructure.	Inclusion could be enhanced through a strategic information, education and communication campaign blended with mobilization and counselling. Apprentices Clusters proposed under the program is expected to expand the inclusion outreach. Greater synergy between ITI and local industry through their active participation in the Institute Management Committees and/or providing guest lectures to the ITI students.
Conflict		
Status: *There are areas beset with conflicts in India, commonly known as Left wing Extremism (LWE) areas.*		
Strengths	**Risks**	**Opportunities**
National and state governments have focused and planned development	The ITIs in the LWE areas are normally low performing with very poor employment	The Program will not result in exacerbating conflicts. Rather, special interventions

focus with substantial financial resources set apart for these areas.	outcomes. Hence ITIs from these areas may be left out from the scope of this program creating conflict.	will be planned for developing appropriate skills in such areas, thus contributing towards harmonious development.

Recommendations (Social)

13. Key recommendations include the following:

1. **Market Scoping**. A fixed / regular menu of trade options decided from above would not suffice. Location specific market scoping as part of the developing the ISP should be undertaken to unearth the skill requirements corresponding to local priorities as well as employment potential within and outside the country.
2. **Institutional Development**. Staffing and other equipment as well as consumables and infrastructure are essential. Corresponding to the trades chosen, full time regular qualified and trained staff should be available in requisite number in each of the institution. Institutional Management Committee (IMCs) are to be revisited and formed anew/ afresh and made fully functional with an explicitly drawn mandate and a set of powers.
3. **Strategy for Inclusion as part of ISP**. As a part of the overall Institutional Development Plan, institutions should detail out the strategy for conduction of market scoping, institutional strengthening, outreach, quality maintenance and upgrading, concurrent monitoring and mentoring including psycho-social counselling, training of trainers etc., linkage with industries for placement and roping them as resource persons/ agencies and post passing out tracking. ISPs should specify the incremental increase in enrollment and passing out, the institute would achieved in respect of SC/ STs, Women, OBCs, Differently abled and other Minorities. Arrangements should be made for creation of and continuous updating of disaggregated data on these lines. Means as well as resources required to achieve these self-driven targets also should find a place in this plan.
4. **Outreach strategies.** At present very few ITIs make special efforts to reach out to the community as a result people who know about the course through friends and relatives enroll for the same. It is suggested that a more creative mobilization strategy should be designed which will enable the community to understand the courses offered and future career progression. This could include convening local political and other leaders as well as prospective students' parents to the institute and give them a detailed tour. This meeting can also have participation by the local industries, and other business houses/ associations.

9.1 In the fifth schedule areas, UMP should be preceded by consultations with tribal leaders at village as well as district levels and other agencies as well as departments. Bi-annual monitoring through local participation (tribal leaders and parents) is also recommended. Residential hostel facilities would boost, especially, women participation in the Fifth Schedule Areas.

9.2 In the Sixth Schedule areas, apart from the tribal leaders and government agencies, consultations should be held with Autonomous District Councils (ADC).

5. **Women Participation.** Women normally are offered courses like cutting-sewing etc. which has limited little relevance in the labor market. So, encouraging ITIs, as a part of their IDP, to launch new market oriented courses will go a long way to promote women

development. The state may consider reimbursing transport charges for all women candidates. All Program ITIs should have separate toilets for women with water connection.

6. **Introduction of Vishaka Guidelines.** As per law all ITIs should have a committee against sexual harassment. This is not presently followed. The program should facilitate this.

7. **Stipends**. Different departments of the government offer stipends for women, SCs and STs and Minorities. The stipends for SC, ST and Minorities, are quite low and disbursements are not on time. State may plan how to facilitate and ensure disbursements in time.
8. **Left Wing Extreme Areas**. Institutional Development Planning is critical to the success of skill development in these areas. Two pronged interventions are recommended: one, providing external help for the development of institutional plan; and two, reviewing of these plan by an expert committee towards ensuring that courses offered are purposeful, and that infrastructural facilities as well as trainers are adequate and appropriate.

14. Action Plan

Action	Who will do	Time line	Completion Measurement
Inclusion. All ISPs to include a plan for inclusion of vulnerable groups.	ITIs, State Directorates and DGT	As part of Performance-Based Grant Agreements to be signed with ITIs	ISP prepared at ITI level with strategies laid down for enhancing inclusion, mobilization, placement and apprenticeship opportunities for women, SC , ST, Minorities, Differently Abled Persons.
Conflict. LWE areas. Provide External Help for developing Institutional Strategic Plan (ISP); and review by an expert committee	DGT	Within a year of effectiveness	Skill development program initiated as per the ISP.
Functional MIS. Setup and compile with continuous updating of disaggregated data pertaining to SC, ST, OBCs, Women, Minorities and PwD.	State Directorates and DGT	Ongoing	ToR for tracer studies to include requirement for disaggregation of data pertaining to SCs, STs, OBCs, women, minorities and persons with disabilities.

1. Introduction

India's demographic dividend, young population, with declining birth rates and improvement in life expectancy, will reach its peak by 2025 and a quarter of the world's total workforce will be in India. By 2020, the average Indian will be 29 years old, compared to 37 in China and the US, 45 in Western Europe and 48 in Japan, making India one of the youngest nations in the world [2]. A large population in the productive age-group requires significant effort in ensuring that the group is indeed productive. Preparing the economy to absorb the large mass of population coming into the workforce requires ensuring that they are skilled to meet the requirement of the sectors that will employ them. Globalization, advances in Information Technology and trade liberalization in India have led to a series of changes in the Indian labor market in terms of growth of skilled based work force. However, India has among the lowest proportion of trained youth in the world. The quantitative dimension of India's skill development challenge is that as high as 80 percent of new entrants to the workforce have no opportunity for skill training. It is estimated that only 5% of the workforce of the age group of 20-24 has acquired vocational skills through formal system (compared to 96% of skilled workforce in Korea, 28% in Mexico),[3] and less than 10% have access to any kind of training. Further, new business strategies, management practices and forms of work organization, which are a part of globalization has two major implications for the labor market in India – it has opened up the economy as a window of opportunity even for small enterprise and informal sector, but has led to exclusion of certain segments of the workforce such as women, unskilled workers, casual workers, workers from the backward and marginalized communities.[4]

This scenario poses a challenge for the country, given that twelve million youth enter the labor market every year in the country. This has paved way for according importance to Vocational Education and Training (VET), as an important element of the nation's education initiative. In order for Vocational Education to play its part effectively in the changing national context and for India to enjoy the fruits of the demographic dividend, it is required to redefine the critical elements of imparting vocational education and training -- flexible, contemporary, relevant, inclusive and creative. The Government of India is well aware of this and accordingly a number of important initiatives are underway. Importantly, Government of India (GOI) introduced National Policy for Skill Development and Entrepreneurship in June 2015. National Skill Development Mission (NSDM) has been set up to steer the implementation. The Mission reflects the government's commitment to skilling opportunities for economically disadvantaged/underserved communities and developing a globally competitive workforce. Accordingly, a variety of programs and projects have been drawn.

2. Program Description

NSDM seeks to shift towards outcome-focused training provision and establish and enforce cross-sect oral, nationally and internationally acceptable standards for skill training by creating a sound quality assurance framework. The implementation strategy of the Mission consists of

[2] CII Skills Estimate
[3] Report of the Skills Mission, Planning Commission GoI, 2007
[4] Jeemol Unni, "Skills as a Security for Informal Sector"

seven core sub-missions that act as building blocks to achieve the overall objectives: Institutional Training, Infrastructure, Convergence, Trainers, Overseas Employment, Sustainable Livelihoods and Leveraging Public infrastructure.

The STRIVE Program was developed by the Government of India to incentivize the critical institutional reforms required in the institutional training systems - defined as the ITI and apprenticeship - to meet the GoI's commitment to providing skilling opportunities for economically disadvantaged/underserved communities and developing a globally competitive workforce. STRIVE is anchored in the GOI's larger policy framework for skills development as defined in the National Policy for Skills Development and Entrepreneurship of 2015. ITIs in India are owned and managed by the state governments, while the role of the MSDE is policy making, regulation, quality assurance, as well as special (top-up) investment schemes to facilitate critical reforms. The MSDE is also in charge of regulating and managing the National Apprenticeship System. STRIVE will be an instrument for the MSDE to fulfill its national mandate and succeeds VTIP as the major investment Program of the MSDE for long-term training. STRIVE is divided into four components: (i) Improving performance of ITIs; (ii) Increasing capacities of the state governments to support ITIs and apprenticeship training; (iii) Improving teaching and learning; and (iv) Improving and broadening apprenticeship training. STRIVE is a five-year national Program (2017-2022 implemented by the MSDE, targeting ITIs and apprenticeship training Pan-India (see table 1). STRIVE leverages increasing resources committed by the MSDE and state government towards long-term training, which in 2015 amounted to approximately 790 million USD. The proposed Bank Operation will support the full STRIVE Program.

Investment through STRIVE is designed to leverage previous reforms introduced through VTIP by focusing on the critical policy and program interventions for systemic reforms and expanding focus to include apprenticeship. STRIVE's four components represent a comprehensive and synergetic approach to institutional capacity building and system reform for long-term training addressing a fundamental re-orientation of apprenticeship and ITI programs towards demand-responsiveness, industry involvement and effective implementation structures, initiating performance-led management structures for long-term training in the state governments and strengthening their institutional capacities, and fostering reforms in the development of curriculum development and teaching and learning resources for long-term training and teachers training. STRIVE is based on strategic principles defined in the 2015 National Skill Development and Entrepreneurship Policy framework and reflects evidence-based, innovative, and pragmatic interventions that build on lessons learned from past interventions and rigorous local and global knowledge.

Activities of the Operation

1. The Operation consists of a Program for results that is comprised of four Results Areas and is complemented by a technical assistance component:

Results Areas: (PforR)
Results Area 1: Improved performance of ITIs
Results Area 2: Increased capacities of the state governments to support ITIs
Results Area 3: Improved teaching and learning

Results Area 4: Improved and broadened apprenticeship training

Technical Assistance (IPF)
The TA component is geared towards strengthening capacity in program management, advocacy, monitoring and evaluation by MSDE and state governments.

Implementation Arrangements

Multi-level approach. STRIVE is a national program representing a multi-level approach that reflects the complex structure of the skills development eco-systems with its different layers of action and responsibilities. To improve relevance and quality of long-term training and apprenticeship, a key focus of the program are improved operations at the level of skills development delivery. However, improvements in the space of skills development hinges on enabling regulatory structures and an appropriate resource base. Consequently, relevant institutions at central and state level will be responsible for implementation of regulatory reforms, and improvement of support systems. The table below shows the actors responsible for the implementation of activities at different levels. The implementing organizations are responsible for the prudent implementation of planned activities and adherence to environmental and social standards as laid down in the GoI's program document and the program's OP.

Table 1. Institutions for Implementation of STRIVE

Implementation Responsibilities for Major Activities	Central Level	State Level	Level of Training Delivery
Results Area 1: Improved Performance of Industrial Training Institutes			
Grant funding support to ITIs	n.a.	State Directorates for Education and Training	n.a.
Activities to increase performance and relevance of ITI training	n.a.	n.a.	ITIs
Results Area 2: Increased Capacities of State Governments to Support Industrial Training Institutes and Apprenticeship Training			
Developing and implementing MIS, including tracer studies; improved human resource management and teachers training; policy reforms related to ITI admissions; and others	n.a.	State Directorates for Education and Training	n.a.
Results Area 3: Improved Teaching and Learning			
ICT-based reform of CITS programs; development of online and e-learning-based CPD system for teaching staff	NCVT	n.a.	n.a.
Upgradation of teacher training institutes to multifunctional resource	ATIs/CTI/NVTI/ RVTIs/AHI/Foremen	n.a.	n.a.

Implementation Responsibilities for Major Activities	Central Level	State Level	Level of Training Delivery
centers	Training Institutes		
Development of ICT-enabled TL resources for CTS programs based on curriculum revision	NCVT, NIMI, CSTARI	n.a.	n.a.
Implementation of new TL resources and outcome-based assessment	n.a.	n.a.	Selected pilot institutions
Results Area 4: Improved and Broadened Apprenticeship Training			
Capacity building at central-, regional-, and state-level offices; Advocacy, awareness raising; policy research and dialogue; Grant funding to IAIs	Central Apprenticeship Council/Advisor; RDATs	State Apprenticeship Council/Adviser	n.a.
Support to IAIs	Regional Director of Apprenticeship Training	State Apprenticeship Council/Adviser	n.a.
Development and delivery of revised and new apprenticeship programs	n.a.	n.a.	IAIs

Under the performance-based grant agreement (PBGA) scheme, MSDE will provide grant funding to selected ITIs based on achievement of agreed indicators. While participating ITIs are selected by the states, the MSDE and the concerned state will sign performance contracts with the IMC of the benefitting ITIs and disburse funds annually based on the achievement of performance indicators (financing triggers) defined in the Institutional Strategic Plans (ISP). Funds will be routed through the state society accounts. ISPs represent five-year strategic plan for the development of the ITI. ISPs will follow a standard format that identifies a range of potential objectives and targets, to which the ITI commits itself in the plan. Agreed targets will serve as financing triggers under the PBGA

The MSDE, in cooperation with respective states, is also responsible for managing and funding grant agreements with industry clusters for industry apprenticeship initiatives (IAIs). Benefitting industry clusters will be identified in a competitive selection process according to rule stipulated in the Operations Manual (OM). Two calls for proposal are envisaged during the life-span of STRIVE. Selection criteria will refer to the relevance of the suggested programs, number of benefitting apprentices, cost effectiveness, and so on.

Responsibility to coordinate and facilitate the implementation of STRIVE at the ministerial level rests with the existing National Program Implementation Unit (NPIU), originally established to facilitate the implementation of VTIP. The NPIU has a total strength of 21 posts. At the state

level, State Program Implementation Units (SPIU) established under VTIP will provide the necessary implementation support to ensure success in the achievement of state level activities, including monitoring and facilitation tasks. The VTIP implementation revealed considerable capacity constraints both at central and state levels for the implementation of large-scale reform programs in the skills development sector. Under STRIVE, national and state PIUs will therefore be supported through a dedicated Program Management Consultant (PMC) directly funded through technical assistance funds. The PMC is a consultancy team comprising key experts in program management, monitoring and evaluation, skills development and apprenticeship training. It will assist the national and state PIUs in their tasks of program management, facilitation of support, supervision of program implementation as well as monitoring and evaluation. For assisting the monitoring of progress in the implementation of the program at the ITI and industry cluster levels, an independent verification agency will be hired.

3. Environmental and Social System Assessment

The key interventions of the program relate to capacity building of the institutions and small scale infrastructure works which are expected to result in substantial social and environmental benefits to the unemployed/ unemployable youth, at large, especially, those belonging to the poor and vulnerable sections. Hence, adverse impacts that are sensitive, diverse and unprecedented on the environment and/or people are not foreseen. However, planned efforts are essential to ensure that program interventions do result in sustainable social and environmental benefits. Further, the lending instruments adopted for the program are twofold: one, Program for Results Operation which covers the bulk of the credit; and the other Investment Project Financing, meant to support the Technical Assistance component. Consequently, the social and environmental management have been planned separately for the two lending streams. This report relates to Program for Results Operation (P4R).

For Program for Results (P4R) stream, it is essential to undertake a comprehensive assessment of environmental and social systems (ESSA), as a part of the preparation, to gauge the adequacy of environmental and social systems at state and the national levels. The objective of ESSA is to ensure consistency with six "core principles" outlined in the World Bank's OP/BP 9.00 (applicable to Program-for-Results Financing) in order to effectively manage program risks and promote sustainable development[5]. These principles are:

1. 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.

2. Avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the program.

3. Protect public and worker safety against the potential risks associated with:
   - construction and/or operations of facilities or other operational practices under the program;

[5] Bank Policy, Programming for Results, July 2015

- 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.

4. 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.

5. 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.

6. Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

The specific objectives with which the ESSA was undertaken in the context of STRIVE include the following:

1. Identify potential environmental and social benefits, risks and impacts applicable to the program interventions
2. Review the policy and legal framework related to management of environmental and social impacts of the program interventions
3. Assess the institutional capacity for environmental and social management system within the program system
4. Assess the program system performance with respect to the core principles of the PforR instrument and identify gaps, if any
5. Describe actions to be taken to fill the gaps that will be used as input/s to the Program Action Plan

3.1 Approach/Methodology

The ESSA was carried out by a team of environmental and social specialists. The team went through secondary literature on the subject and had a series of consultations and field visits. Consultations were carried out at the national, state and institute level. Visits were made to different ITIs in the selected states to understand the ground issues and problems. The team also visited a few industries which take apprentices from the ITIs in order to understand the existing system and the issues within it.

Consultations were designed to be carried out in the national, state and ITI level. The table below elaborates what will be covered at each level and how:

	Institution/Agency	**Designation of Key Informants**	**Areas/Issues**

National **Level** **Ministry of Skills Development and Entrepreneurship** **(MSDE)**	• Directorate of Training • National Council of Vocational Training • Directorate of Apprenticeship • Central Staff Training and Research Institute (CSTARI) • National Vocational Training Institute (Women Training)	• Deputy Director General (DDG) Training • Director Training • Director Apprenticeship Training • Director Women's Training	• Policies • Guidelines • Capacities • Monitoring and management frameworks • Institutional framework and system
State **(Department of Employment and Training –DET)**	• State Directorate of Training • State Directorate of Apprenticeship Training	• Director Training • Director Apprenticeship	• Budget • Disbursement • Enrolment • Placement • MIS • Management and monitoring systems
Industrial Training Institute - ITI	• Focus on government ITIs using social and environmental criteria for sample selection • Cover a few Private ITIs for comparison and lessons	5 Principal 6 Chairperson of IMC 7 Private Sector Partner (if any) 8 Instructors 9 Students	10 Enrolment 11 Placement 12 Partnership with Industry 13 Grievance redress 14 Inclusion process and strategies 15 Occupational safety standards and management 16 Construction management systems 17 Waste systems 18 Course curriculum

Extensive consultations have been made through field visits to various states, chosen based upon geographical as well as socio-economic and cultural aspects throughout the country. The states

include – Assam (North East), Jharkhand (East), Maharashtra (West), Telangana (South), Uttarakhand, and Haryana (North). Overall, the selection met the following criteria:

- Representation from five zones of India: north, south, east, west and north-east.
- ITIs from urban and rural areas
- A mix of trades
- A variety of terrain and access, such as remote and centrally located
- Women only ITIs
- ITIs catering to only tribal populations
- General ITIs in Fifth Schedule and Sixth Schedule Areas
- ITIs in conflict areas like Left Wing Extremist areas
- Large and small ITIs based on funding received.
- Hill and costal it is.

At the national and the state level consultations were carried out with various stakeholders including government officials at the national level and state level and industry partners at the states who take in apprentices. A list of ITI s visited is presented in Annexure 1; list of all the stakeholders met during the assessment is in Annexure 2; and a portrayal of the ITI visited is in Annexure 3.

Apart from ITI s, the team also met officials at the national and state levels and visited National Vocational Training Institute (NVTI) at NOIDA to get an understanding of the status of training of women trainers, Regional Directorate of Apprenticeship Training at Hyderabad and Advanced Training Institute at Hyderabad. A good number of industries which take in apprentices were also visited during the assessment in order to understand the issues and problems of apprenticeship. At the ITI level, instructors, principals were the key informants. Apart from them a few students from ITIs and apprentices were also met. .

4. Assessment of Existing Institutions

4.1 Existing Institutional Setup

Government of India notified the formation of the Department of Skill Development and Entrepreneurship on 31st July, 2014 which subsequently led to the creation of the Ministry of Skill Development and Entrepreneurship on 10th Nov, 2014. The Ministry has seven organizations[6] to carry forward its agenda of skill and entrepreneurship development in India. Each of the organizations under the Ministry has specific area of its work. The Directorate General of Training (DGT) is in charge of the training for the organized sector. The DGT includes the ITIs, ATIs, and Apprenticeship Training. Since STRIVE program is looking at ITIs which fall under the jurisdiction of Directorate General of Training (DGT), the assessment looked into the institutional and management systems of DGT only.

The Directorate General of Training, National Level

[6] Directorate General of Training; National Skills Development Agency; National Skills Development Council; National Skills Development Fund; Indian Institute of Entrepreneurship; National Institute for Entrepreneurship and Small Business Development; and Sector Skills Councils

The Directorate General of Training in the Ministry of Skills Development and Entrepreneurship is the apex organization for development and coordination at National level for the programs relating to vocational training including Women's Vocational Training and Employment Services. Employment service is operated through a countrywide network of Employment Exchanges. Industrial Training Institutes are under the administrative and financial control of State Governments or Union Territory Administrations. DGT also operates Vocational Training Schemes in some of the specialized areas through field institutes under its direct control. Development of these programs at national level, particularly in the area concerning common policies, common standards and procedures, training of instructors and trade testing is the responsibility of the DGT. But, day-to-day administration of employment Exchanges and Industrial Training Institutes rests with the State Governments/ Union Territories Administrations.

Functions of DGT:

- To frame overall policies, norms, and standards for vocational training.
- To diversify, update and expand training facilities in terms of craftsmen and crafts instructors' training.
- To organize and conduct specialized training and research at the specially established training Institutes.
- To implement, regulate and increase the scope of training of apprentices under the Apprentices Act, 1961.
- To organize vocational training programs for women.
- To provide vocational guidance and employment counselling.
- To assist scheduled castes/scheduled tribes and persons with disabilities by enhancing their capabilities for wage employment and self-employment.
- To conduct regular training programs for Employment Officers and develop staff training material for use by the Employment Service personnel.
- To collect and disseminate information concerning employment and unemployment and prescribe uniform reporting procedures.

Department of Training, State Level

At the state level the Department of Training is either clubbed with technical education and training or with labor and employment. It is headed by a Director Training and normally has a small team of Joint Directors, Deputy Directors and Apprenticeship Advisors looking into the performance of ITIs and apprenticeship training at the state. At the state level the Directorate is responsible for the following functions:

- Day to day administration of the institutes (ITIs).
- Overall performance monitoring of the ITIs.
- Depute ITI instructors for training in both long term and short term training.
- Assist, co-ordinate and regulate programs in State public and private sector industries for apprenticeship.
- Mobilize industries to take in more apprentices

- In some states where the Directorate is a part of Labour and Employment the Directorate is also responsible for registration of job seekers, career guidance and counselling, registration of job providers, organizing job melas etc.

National Vocational and Training Institute and Regional Vocational Training Institute

National Vocational Training Institute (NVTI) and Regional Vocational Training Institute (RVTIs) are responsible women's vocational training. It was designed and launched in 1977. The program attempts to promote the women employment in industry (mainly organized sector) as semi-skilled/skilled and highly skilled workers by increasing their participation in skill training facilities under Craftsmen Training Scheme and Advanced Skill Training Scheme and also the Apprentices training scheme. Program also offers higher skill training for the Instructors of various skill training organizations.

Industrial Training Institute

The Industrial Training Institutes or the ITIs are the main institutes of technical training in the country. There is a total of 12,415 ITIs (both government and private) in the country offering 87 trades. Out of these 1,500 ITIs are from the public sector and the rest are private ITIs.[7] They provide post-school technical training. Normally a person who has passed 10 standard is eligible for admission to ITI. The objective of opening of ITI is provide technical manpower to industries. These persons are trained in basic skills required to do jobs of say operator or a craftsman. The course in ITI is designed in way to impart basic skill in the trade specified. The duration of course may vary from one year to three years depending upon trade opted. Normally engineering trades are of two-year duration and non-engineering trades are of one-year duration. After completion of desired period of training the person is eligible to appear in the AITT (All India Trade Test) conducted by NCVT. After passing AITT, the person is awarded National Trade Certificate (NTC) in concerning trade by NCVT. After passing ITI course a person may opt to undergo practical training in his trade in an industry for a year under the Apprenticeship Training Scheme (Trade Apprenticeship). Once completing apprenticeship, the person has to appear and pass in a test to be conducted by NCVT to get the National Apprenticeship Certificate. Some of the common engineering trades include Instrument Mechanic, Fitter, Turner, Welder, Diesel Mechanic, Mechanical Motor Vehicle, Electrician, Wireman, Computer Operator and Programming Assistant (COPA), Refrigeration and Air conditioning etc. Apart from engineering trades, some non-engineering trades are also offered by the ITIs which include Beauty and Skin Care, Dress Manufacturing, Surface Ornamentation, Food Production and others. It is needless to say that the engineering trades are mostly dominated by men though in some states a few women are coming forward to enroll in some of the engineering trades.

Apprenticeship Training

It is generally observed that institutionally trained youth have not produced desired result. Training imparted in institutions alone is not enough for acquisition of skills and needs to be supplemented by training in the actual world of work. Therefore, to facilitate training and

[7] DGT MIS

enhance employability of job seekers in private/corporate sectors, the Apprentices Act, 1961 was enacted. This was later amended in 2014.

The responsibility for implementing the Apprentices Act, 1961 in respect of Trade Apprentices in Central Government Undertakings and Departments rests with the Central Apprenticeship Adviser/Director of Apprenticeship Training in the DGT, Ministry of Skill Development and Entrepreneurship with the assistance of six Regional Directorates of Apprenticeship Training (RDATs) at Chennai, Faridabad, Hyderabad, Kanpur, Kolkata and Mumbai. State Apprenticeship Advisers (SAAs) are responsible for implementation of the Act in respect of Trade Apprentices in State Govt. Undertakings/Departments and Private Establishments. At the State level, the State Apprenticeship Advisers are responsible for implementation of the Act in respect of Trade Apprentices in State Government Undertakings/ Departments and Private Establishments. Central Apprenticeship Council, is an apex statutory tripartite body which advises the Government in laying down of policies and prescribing norms & standards in respect of Apprenticeship Training Scheme.

Training of Trainers

Training of Craft Instructors is the responsibility of DGT in the Ministry of Skills Development and Entrepreneurship. The Craft Instructors' Training Scheme (CITS) is operational since inception of the Craftsmen Training Scheme. Objective of the Craft Instructor Training is to train Instructors in the techniques of transferring hands-on skills, in order to train semi-skilled / skilled manpower for industry. Structure of training program is to such that comprehensive training both in skill development and training methodology is imparted to the trainees. It is a one-year residential program. Apart from this one-year program a number of short term programs are also organized by the Advance Training Institutes (ATI) responsible for instructors' training.

Objective of the CITS is to train instructors in the techniques of transferring hands-on skills, in order to train semi-skilled / skilled manpower for industry. Structure of the training program is to such that comprehensive training both in skill development and training methodology is imparted to the trainees. Under the program, Instructors from Government and Private ITIs Centers established by industries under the Apprentices Act are provided training.

4.2 Assessment of the Social and Environment Management Capacity of the Present System

The Assessment of the institutions reveals that the capacity of the national and state level institutions to manage social and environment concerns could be further enhanced. Tracking is confined to capturing enrollments. Disaggregated data exists gender wise, but, not on other attributes. Specific focus on gender and/ or SC/ST is yet to gain ground in respect of apprentice.

At the **State level** the problem becomes even more serious as there are substantial vacancies of the positions in the state level. Thus the existing personnel is busy carrying out the day to day functions and administration requirement of the department. Monitoring at the state level is largely focused on enrollment and course attendance. Most of the monitoring is now to be done

through a MIS system. Visits to ITIs for monitoring their function are few and there seems to be no systematic and regular monitoring schedule. In general, there is very little if any monitoring of environment issues by the State Directorate, though some states like Telangana mentioned inspecting waste management systems in place when visiting ITIs. Specific issues of social management in terms of increasing women's enrollment or preventing drop outs of tribal population or have a bottom up grievance redressal system are not taken up at the state level. Liaising with other Departments at the state level is limited to only providing list of candidates eligible for stipends under various Schemes of the central and state government for women or tribal or minority population. The focus of Apprenticeship Advisors at the state level is to increase opportunities of apprenticeship for the ITI pass outs and they are not equipped fully to engage with the industry to enhance 'inclusion' opportunities of apprenticeship for women, SC, STs.

The Employment and Training Directorates do not seem to have much liaising with the state Department of Environment and Forests or its equivalent, or the State Pollution Control Board. The overall capacity to monitor and review environmental related actions at the ITIs is presently limited. While some concerns like waste management are in place, with limited understanding of regulations on waste such as batteries and e-waste, these systems only partially address waste management presently.

At the **ITI level** main function is to impart technical training. There are high vacancies in terms of instructors at the ITI level. In some states (Jharkhand) ITI principals are often in-charge of more than one ITI. As a result of managing day to day functions of the institute is of maximum priority and the principal hardly has any time to make special effort to ensure inclusion and other environment social concerns. The principals are also in charge of undertaking regular management and maintenance of the institute. They are also responsible for executing relevant national and state policies and programs, such as the tree plantation program in Telangana. Depending upon the principal and the private players and IMC, functioning of individual ITIs may differ and activities that may be more environmentally sound could be undertaken. This was seen in both Ratnagiri and Nizamabad where solar power was also being used. Similarly, individual pro-activeness is seen in dealing with social issues. For example, the principal of Tribal Girls' Ashram ITI in Khamencheru takes personal interest and visits the adjoining villages to mobilize girls to join the ITI.

The ITIs have been hiring instructors on a contract basis paying them a lump-sum salary which is much lower than the salary of regular instructors. One of the ITIs visited by the team in Nizamabad had all the instructors hired on contract. This is a major problem as contract instructors is they ae not provided adequate salaries.

While many of the larger ITIs, have a more systematic waste disposal system, the more remote and small ITIs do not follow any systematic waste disposal system. Discussions in the ITIs highlighted that, limited number of staff were aware of waste related environment regulations, and the usual system to environment laws and the only method used to dispose most of the solid waste from the workshops was to sell it to the highest bidder. No licensed vendors for batteries, e-waste etc. seemed to have been identified.

While some of the ITI staff members had some awareness on accident management, it was limited and capacities to manage in case of a disaster were largely absent. Discussions in a number of the ITIs highlighted that ITIs were neither prepared for disasters nor had the

equipment to handle a disaster or major accident. Also, most trainers only have a basic understanding of first aid, and is likely to be insufficient especially for remote ITIs such as Garwah in Jharkhand, where even the nearest medical center is more than half an hour away.

In most states the principal is the single point for grievance redress system in the ITI. There are not committees at the ITI level that has the authority to deal with student grievances. It was only in Maharashtra that there is a Government Order which says that each class in an ITI should have a monitor who would interact with the students and take note of their issues and concerns. The principal holds regular meetings with the monitor to understand the issues faced by the students and takes action accordingly. ((Committee Against Sexual Harassment (CASH) for girls have been mandated under the Supreme Court to be formed in every public institution.))

4.3 Environment Specific Institutional System

Regulating environment related concerns and creating legislation and standards is undertaken by the Ministry of Environment, Forests and Climate Chance at the national level, alongside with the Central Pollution Control Board. These agencies are represented at the state level. This is usually through the Department of Forests and the State Pollution Control Board. However, in some cases the departmental structures may vary at the state level, such as in the case of Madhya Pradesh where the environment department is a part of the Housing and Environment Department. The Pollution Control Boards also have a network of laboratories and centers within each state for monitoring and regulation of standards and norms set by them. For all permissions and guidance within each state the first point of contact are the state departments, who are to provide guidance on the procedures to be followed in each case.

For any permission under forest, tree, and wildlife related activities the state level environment department needs to be approached. For identification of discharge standards and permission under various laws such as water, air and noise the State Pollution Control Board is in-charge. Standards as identified by them, and inspections and cess are determined and administered by them. In case of use of municipal or urban drains for discharge of any wastewater and sewage, permission would be needed from the local urban body of the area. The mining and excavation for raw material, especially for building and construction needs would need to be taken from the locally relevant authority, and could include the District Magistrate/Commissioner, the state department in-charge of mining activities or the Department of Environment.

For archaeological sites, or any activity that is regulated under the national and state archaeology regulations, the national and state archaeological departments are overall in-charge.

5. Relevant Legislations and Regulations

5.1 Environment

6. Similar to the institutional system there are both national and state level legislation for environmental regulation and management. In states where there are no state specific environment regulations or standards, the national ones are applicable. Otherwise, the state specific laws are applicable. Of the existing environmental regulations, national regulations that are likely to be applicable to the program are listed below. However, each

state would need to refer to state environment and pollution control departments to identify any other legislation and standards that may be relevant in its case.

Policy/legislation	**Responsible Department/ Ministry**	**Relevance to the Program**
Environment (Protection) Act, 1986	Ministry of Environment, Forests and Climate Change	Presently no land acquisition envisaged. However, in case any land is required for any purpose; including for construction of water pipes and electricity poles through forest department lands or forest areas, appropriate permission will need to be taken. In case of any tree felling even on ITI land, as required in the national or state laws permission and compensatory afforestation to be taken.
Air (Prevention and Control of Pollution) Act, 1981	Ministry of Environment, Forests and Climate Change	Any activity resulting in air emissions need to follow the law and take required permissions for the state department, as identified by the national or state laws and standards.
Water (Prevention and Control of Pollution) Act, 1974	Ministry of Environment, Forests and Climate Change	Any activity resulting in discharges would need to follow the law and take required permissions for the state department, as identified by the national or state laws and standards. Also, as required treatment of the discharges prior to its disposal may need to be considered, if mandated by the law.
Water (Prevention and Control of Pollution) Cess (Amendment) Act, 2003	Ministry of Environment, Forests and Climate Change	There is a need to pay access by any industry that includes any operation or process, or treatment and disposal system, consumes water or gives rise to sewage effluent or trade effluent according to this Act.
Batteries (Management and Handling) Rules, 2001 and amendments	Ministry of Environment, Forests and Climate Change	Disposal of batteries used in workshop and other areas should be according to this legislation, with required forms filled, selling to registered recyclers, and ensuring appropriate transportation of batteries. In case procuring recycled batteries, only from registered recyclers and as per this Rule. For bulk consumers, a semi-annual return in Form VIII to submitted to the State Pollution Control Board.
The Chemical Accidents (Emergency Planning, Preparedness, And Response)	Ministry of Environment, Forests and Climate Change	In case of use and storage of any chemicals identified in Schedule 1 on hazardous chemicals. This includes asbestos, which has been used in some buildings and during upgrading may need disposal. Also, these Rules will be relevant in case any other chemicals

Rules, 1996		identified in the schedule are used for any workshop activity.
Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989	Ministry of Environment, Forests and Climate Change	This will be applicable for processes that use hazardous chemicals, of the specified quantities according to the schedules of this Rule. Asbestos, which is used as roofing material would be under the purview of this regulation. Its handling and disposal will need to be according to the legal provisions identified under these Rules. Chemical storage and prevention and accident site emergency plan to be to be according to the law, chemicals to be appropriately labeled and required forms filled and submitted. Workers to be trained for safety and provided with required equipment, and in case of an accident the appropriate authority notified along with identified action plan implementation
Environmental (Protection) (Third Amendment) Rules, 2013	Ministry of Environment, Forests and Climate Change	This is applicable for new diesel generators up to 800 kW. This regulation gives limits of emission from generators which would need to be adhered to by ITIs who use such generators for provision of backup power.
Environment (Protection) Seventh Amendment Rules, 2009	Ministry of Environment, Forests and Climate Change	These Rules identify ambient air standards for residential, industrial, rural, ecologically sensitive and other areas, and need to be followed by ITIs. This is especially relevant where chemicals and automobile painting and other activities are carried out that may result in release of pollutants in the air.
E-Waste (Management) Rules, 2016	Ministry of Environment, Forests and Climate Change	This Rule identifies the responsibility of e-waste generators, including its handling, storage, labelling and disposal. The disposal of e-waste identified in schedule 1 of the Rules is to be done through authorized collection centers and dismantlers or recyclers. E-waste cannot be stored for more than 180 days.
The Noise Pollution (Control and Regulation) Rules, 2000	Ministry of Environment, Forests and Climate Change	Noise levels for various activities, including construction, use of public address systems and for educational institutes, residential areas etc., should be within prescribed limits. For, educational institutes, the law is applicable for the whole of the institute, and not just the building areas. Educational institutes and 100 meters around them are identified as silence zones, and should follow prescribed standards.

Environmental (Protection) Second Amendment Rules, 2013	Ministry of Environment, Forests and Climate Change	This is for generators run on petrol or kerosene up to 19 kW and the permissible emission levels. The Rules are for both air and noise emission levels.
Plastic Waste (Management and Handling) Amendment Rules, 2011 and Plastic Waste Management Rules 2016	Ministry of Environment, Forests and Climate Change	Consent is required for any manufacturing of plastic or plastic waste products, and its registration as required by these Rules. The Draft Rules are to apply to waste generators, producers and manufacturers. Conditions for manufacturing, storing, distribution, labeling and waste management for plastic is identified. Producers are to segregate plastic waste at source as identified in the Solid Waste Management Rules 2015. It also identifies a number of other actions required for the management of plastic waste by producers. Once the Rules will be notified, it would require registration with the appropriate Pollution Control Board.
Solid Waste Management Rules 2016	Ministry of Environment, Forests and Climate Change	This rule is applicable to producers of all sorts of waste. It identifies a number of responsibilities of all waste generators, such as segregation at source of waste as dry, wet and domestic hazardous wastes for appropriate disposal; proper wrapping and disposal of different types of waste; and its storage and disposal. Institutional waste generators will need to segregate and store waste in the 3 identified waste streams separately, prior to its disposal as identified in the Rules.
Public Insurance Liability Act, 1991	Ministry of Environment, Forests and Climate Change	It will be applicable to those who are not covered under the Worker's Compensation Act, 1923 and may suffer injury due to any accident. Where there is a need to handle any hazardous substance, the agency will need to have insurance so that required relief is provided, in case needed.
The Ancient Monuments and Archaeological Sites and Remains Act, 1958 & Its amendments till 1992	Department of Archaeology	Area up to a distance 100 meters from protected monuments are protected and no construction can take place. Beyond it up to 200 m near and adjoining protected monument are regulated areas, and activity would be according to the regulation in the area. In case of a chance finding during construction or other activities, this Act identifies the processes and actions that

		may need to be taken to protect the area. Any repair, addition or alternation and construction/reconstruction within these areas need prior approval of the Archaeological Survey of India
Construction and Demolition Waste Management Rules, 2016	Ministry of Environment, Forests and Climate Change	This regulation is applicable for waste like building materials, debris and rubble from construction, remodeling, repair and demolition of any civil structure. Waste generators are responsible for all such waste. In case of at least 20 tons per day or 300 tons per project in a month the waste has to be segregated according to directions of the law, submit a waste management plan, get required approvals for local authorities prior to starting work and pay the required levies. The Rules also identify the activities for the management of the construction/demolition site such as cleaning, storing and disposal.

7. Other state level regulations such as for mining and tree acts exist and would need to be consulted in case of procurement of raw material or clearing of trees. There are also a number BIS standards and other state regulations that would need to be identified and followed. The BIS standards are listed in Annex 7.

5.2 Social

1. Apprentices Act: One of the most relevant legislation for the Program is the Apprentices Act of 1961. The Act lays down the objectives of the Apprentice System in the country and mandates establishments to have apprentices up to 10% of the total number of employees in the establishment. The stipend to be paid is also laid down in the Act (First year, 70% of the minimum wages of the state for semi-skilled workers, second year, 80% of the minimum wages of the state for semi-skilled workers and the third year 90% of the minimum wages paid to semi-skilled workers). DGT is responsible for implementation of the Act in respect of Trade Apprentices in the Central Government Undertakings and Departments through six Regional Directorates of Apprenticeship Training (RDAT) located at Chennai, Faridabad, Hyderabad, Kanpur, Kolkata, & Mumbai. AITT for trade apprentices are conducted by NCVT twice a year. National Apprenticeship Certificates (NAC) are awarded to those who pass the AITT. Earlier to 2014, DGT would determine the number of apprentices per trade which a particular industrial house should take. However, the Act has been amended in 2014 and this quota has been relaxed and the industry is free to determine the number on their own. While according flexibility, minimum levels of stipend has been stipulated.

2. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013: This Act of Indian Parliament that 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 Act also establishes regulations for land acquisition as a part of India's massive industrialization drive driven by public-private partnership.

The aims and objectives of the Act include:

- To ensure, in consultation with institutions of local self-government and Gram Sabhas established under the Constitution of India a humane, participative, informed and transparent process for land acquisition for industrial development of essential infrastructural facilities and urbanization with the least disturbance to the owners of the land and other affected families
- Provide just and fair compensation to the affected families whose land has been acquired or proposed to be acquired or are affected by such acquisition
- Make adequate provisions for such affected persons for their rehabilitation and resettlement
- Ensure that the cumulative outcome of compulsory acquisition should be that affected persons become partners in development leading to an improvement in their post-acquisition social and economic status and for matters connected therewith or incidental thereto.

The scope of the Act includes all land acquisition whether it is done by the Central Government of India, or any State Government of India, except the state of Jammu & Kashmir. The Act is applicable when:

- Government acquires land for its own use, hold and control, including land for Public sector undertakings.
- Government acquires land with the ultimate purpose to transfer it for the use of private companies for stated public purpose. The purpose of LARR 2011 includes public-private-partnership projects, but excludes land acquired for state or national highway projects.
- Government acquires land for immediate and declared use by private companies for public purpose.

The provisions of the Act does not apply to acquisitions under 16 existing legislations including the Special Economic Zones Act, 2005, the Atomic Energy Act, 1962, the Railways Act, 1989, etc.

3. Fifth and Sixth Schedule Areas: The Indian Constitution protects tribal interests through the Fifth and Sixth Schedules. While the Sixth Schedule, applicable in Assam, Meghalaya, Tripura and Mizoram, gives tribal people freedom to exercise legislative and executive powers through an autonomous regional council and an autonomous district council, the Fifth Schedule, applicable in all the other identified tribal regions, guarantees tribal autonomy and tribal rights over land through a Tribal Advisory Council in each State. A list of Fifth Schedule and Sixth Schedule Areas is given in Annexure 3.

The **Fifth Schedule** of the Constitution deals with the administration and control of Scheduled Areas as well as of Scheduled Tribes in States other than Assam, Meghalaya and Tripura. The main features of the administration provided in this Schedule are as follows:

- The Executive power of the Union shall extend to giving directions to the respective States regarding the administration of the Scheduled Areas.

- The Governors of the State in which there are "Scheduled areas" have to submit reports to the President regarding the administration of such Areas, annually or whenever required by the President. Tribes Advisory Councils are to be constituted to give advice on such matters as welfare and advancement of the Scheduled Tribes.
- The Governor is authorized to direct that any particular Act of Parliament or of the Legislature of the State shall not apply to a Scheduled Area or shall apply, only subject to exceptions or modifications. The Governor is also authorized to make regulations to prohibit or restrict the transfer of land by, or among members of the Scheduled Tribes.
- The Constitution provides for the appointment of a Commission to report on the administration of the Scheduled Areas and the welfare of the Scheduled Tribes in the States.
- The President may appoint such Commission at any time, but the appointment of such Commission at the end of 10 years from the commencement of the Constitution was obligatory.

According to Article 244 of the Constitution the **Sixth Schedule** lays down special provisions for the protection of the interest and cultural identities of the hill tribe of North. The most important provisions of the Sixth Schedule is creation of the Autonomous District Councils. While tribal's of some of the North-Eastern states have the Autonomous District Councils, Arunachal Pradesh, Nagaland and greater part of Mizoram do not have this.

4. National Commission of Minorities Act 1992. The Union Government set up the National Commission for Minorities (NCM) under the National Commission for Minorities Act, 1992. Six religious communities, viz; Muslims, Christians, Sikhs, Buddhists, Zoroastrians (Parsis) and Jains have been notified as minority communities by the Union Government.

The major functions of the Commission are as follows:

1. Evaluate the progress of the development of Minorities under the Union and States.
2. Monitor the working of the safeguards provided in the Constitution and in laws enacted by Parliament and the State Legislatures.
3. Make recommendations for the effective implementation of safeguards for the protection of the interests of Minorities by the Central Government or the State Governments.
4. Look into specific complaints regarding deprivation of rights and safeguards of the Minorities and take up such matters with the appropriate authorities.
5. Cause studies to be undertaken into problems arising out of any discrimination against Minorities and recommend measures for their removal.
6. Conduct studies, research and analysis on the issues relating to socio-economic and educational development of Minorities.
7. Suggest appropriate measures in respect of any Minority to be undertaken by the Central Government or the State Governments.
8. Make periodical or special reports to the Central Government on any matter pertaining to Minorities and in particular the difficulties confronted by them.

Other Acts and Legislations

Legislation	Legislating Ministry/Dept.	Relevance for the program
General Labor and employment related Acts		
Payment of Wages Act, 1936	Ministry of Labour and Employment	The Act ensures payment of regular wages to certain classes of workers.
The Minimum Wages Act, 1948		The Act lays down the minimum wages that must be paid to skilled and unskilled labours.
Workmen's Compensation Act, 1923		Under this Act the spouse or the dependent son or daughter of a workman will be provided due compensation if he or she suffers any injury at work place.
Personal Injuries (Compensation Insurance) Act, 1963		The Act imposes on the employers a liability and pay compensation to workers sustaining personal injuries and to provide insurance for employers against such liability.
Employees' State Insurance (ESI) Act, 1948		The Act to provides for certain benefits to employees in case of sickness, maternity and ' employment injury ' and to make provision for certain other matters in relation thereto.
Employees Provident Fund and Miscellaneous Provisions Act, 1952.		The Act provides for the institution of provident funds, pension fund and deposit-linked insurance fund for employees in factories and other establishments.
Payment of Gratuity Act, 1972		The Act forces employer to pay Gratuity to the employees who have rendered a continuous service for at least five years to incentivize them so that they continue working efficiently.
The Factories Act, 1948		The Act was passed with the intention of safeguarding the health of workers.
The Contract Labour (Regulation & Abolition) Act, 1970		It is an Act to regulate employment of contract labours and to provide for its abolition.
The Bonded Labour System (Abolition)		The object of the Act is to provide for the abolition of bonded labour system with a view to preventing the economic and physical exploitation of the weaker sections of the people and for matters connected therewith or

Act, 1976 Child Labour Prohibition and Regulation Act (1986) Trade Union Amendment Act, 2001		incidental thereto. An Act to prohibit the engagement of children in certain employments and to regulate the conditions of work of children in certain other employments. An Act to provide for the registration of Trade Unions and in certain respects to define the law relating to registered Trade Unions *These laws protect labor in the manufacturing sector. The courses offered at ITIs can offer a small session which covers the vast canvas of legal safeguards that workers in India have. Awareness of rights is an empowering tool and can help prepare students better for the job market.*
Inter-state Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979	Ministry of Labour and Employment	Regulates the employment of inter-state migrant workmen and provides for their conditions of service.
Social Inclusion related		
The Equal Remuneration Act, 1976 The Maternity Benefit Act, 1961	Ministry of Labour and Employment	These laws protect women from exploitative work conditions. The courses offered at ITIs can offer a small session which covers
The sexual harassment of women at workplace (Prevention, Prohibition, and Redressal) Act 2013	Ministry of Women and Child Development	This law protects staff, students, workers (particularly women) from sexual harassment. All ITIs have guidelines to form committees against sexual harassment.
The Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989	Ministry of Social Justice & Empowerment	Reservation for SC and ST in all ITIs on the basis of state level criteria. Some states like Haryana have SC wings in ITIs to provide additional impetus to SC enrolment. States with ST population like Maharashtra, Jharkhand, and Chhattisgarh etc. have exclusive ST ITIs.
The Persons with Disabilities (Equal	Ministry of Social Justice &	To meet the wide gap of persons with disabilities (PwD) not getting mainstreamed in

Opportunities, Protection of Rights and Full Participation) Act, 1995	Empowerment	skill development, Ministry of Social Justice & Empowerment has a scheme since 2015 called Financial Assistance for skills training for PwD. It calls for creation of a separate Sector Skills Council (SSC) for PwD in collaboration with MSDE to devise job roles, occupational standards and training curricula. [8]
Citizen Engagement and Grievance Redressal related		
Right to Information Act 2005	Ministry of Personnel, Public Grievances and Pensions	Deputy Secretaries and Directors at the MSDE are the appellate authority (within their respective subject matter) for RTI applications.
Allocation of Business Rules 1961 along with Policy Guidelines for redress of Public Grievances (August 2010)	Ministry of Personnel, Public Grievances and Pensions	All Grievances received from the public as well as employees are required to be redressed by the Ministry / Department / Organization concerned to which the area of work for that grievance has been allocated. The Centralized Public Grievance Redress and Monitoring System is operational at MSDE.
Citizen Charter	Ministry of Skill Development and Entrepreneurship	The citizen charter of DGT is available which enlists 12 services, the designated staff, contact details, process and documents required
Grievance Redressal	Ministry of Skill Development and Entrepreneurship	There are three categories under which grievances can be filed: employment and training; apprenticeship and vocational rehabilitation for handicapped. The grievance redress system is a decentralized one. For most cases any grievance at the ITI level is dealt with in the institute itself. The principal of the ITI being the point of appeal. In case of any grievance between principal and instructors it comes up to the level of the Directorate.

Programs for Social Inclusion

For the purpose of social assessment, the programs of DGT that are focused on social inclusion is given below:

[8] http://disabilityaffairs.gov.in/content/page/scheme-of-financial-assistance-for-skill-training-of-pwds.php

Women ITIs: In order to encourage women to enter the labor market, there are a number of women ITIs in every state. These ITIs however have limited number of seats and only have non engineering trades like Fashion Designing, Surface Ornamentation, Beauty and Skin Care, COPA etc. Another important initiative by the government to encourage women in vocational training is providing stipend for girls who enroll in ITIs. This scholarship is given directly by the Department of Welfare but the amount varies from state to state.

Apart from the women's ITIs 30 percent of seats in all government ITIs are reserved for women. But in actual numbers representation of women in ITIs is very low. As per National Sample Survey (NSS) data of 66th Round (2009-10) only 7.6 percent of women have received vocational training in ITIs.

Tribal ITIs: To encourage tribal youth to undertake vocational training a number of ITIs are set up in the districts dominated by tribal population which are exclusively for the indigenous people. The number of such ITIs vary from state to state based on the percentage of indigenous population in the state. These ITIs are normally located in the rural areas and they run regular trades. Apart from these ITIs an overall 7.6 percent of seats are reserved for tribal population. But the actual reservation of seats for tribals vary from state to state depending on the percentage of tribal population in the state. (It is interesting to note that for a state like Haryana, which does not have any tribal population they have a special wing in the ITI where 75% of seats are reserved for SC candidates). A small amount is given as stipend to all tribal students who enroll in ITIs by respective departments in each state.

Conflict Areas: The GoI has marked about 106 districts across the country as Left Wing Extremist areas. These districts witness intermittent violence. For Skill training the government has a special scheme for Left Wing Extremism (LWE) areas. The scheme was formulated in 2011 to create Skill Development infrastructure in 34 districts closer to the people of LWE affected districts. The objective of the scheme is to establish one ITI & two Skill Development Centers (SDCs) in each of 34 districts and to run demand driven vocational training courses both long term and short term to meet the requirement of skilled manpower of various sectors of economy in and around these areas, on the one hand and on the other, provide youth opportunities of decent livelihood. Apart from the special scheme for LWE areas there are general ITIs also open in these districts catering to the population of the area.

Scheme for North East States and Sikkim: The Scheme for enhancing infrastructure for North East (NE) States and Sikkim was formulated in 2011 to enhance the existing infrastructure of skill development in NE States. The scheme is aimed for Upgradation of 20 ITIs by introducing three new trades per ITI and supplementing infrastructure deficiencies in 28 ITIs by constructing new hostel, boundary wall and supplementing old and obsolete tools and equipment.

ITI for Minorities: In some states where there are districts with a substantial minority population, ITIs have been established to cater to this. In these ITIs 75% of the seats are reserved for population belonging to minority community. However, there are no specific trades that are taught in these ITIs.

Vocational Rehabilitation Centre for Handicapped: Apart from ITIs DGT has also set up a number of vocational rehabilitation centers for people with disabilities. These centers are directly under the central government and cater to vocational training for people with disabilities.

6.1 Existing Implementation of Environment Related Actions

6.1.1 Building Infrastructure and Construction

6.1.1.1 Issue

This PforR program will support infrastructure upgradation, as a part of ITI modernization activities. This could include facility upgradation and infrastructure improvement. Also, the Program will support enabling youth with disabilities access ITI training. Since a majority of ITIs visited were in need for infrastructure upgrading, maintenance activities and there was insufficient focus on access for the disabled, construction activities may be undertaken as a part of STRIVE.

6.1.1.2 Observations from the Field

Standard design for a majority of the ITIs is a combination of buildings that include workshops and class room areas. While depending on individual institute designs some are compact and have one building with separate area for the workshop and classrooms, in other cases there are separate buildings or a number of buildings that provide the function of classrooms and workshops. Many of the older ITIs were noted to have a large workspace with high roofs for workshops which were relatively well ventilated and made good use of natural light. These workshops were subdivided into section for different trades.

NCVT affiliation requires, amongst other things, a minimum spacing for running its affiliated courses. However, due to an expansion of the existing trades in many ITIs, many of which are yet to be affiliated to NCVT; there was an increased crowding in the workshop space, where either classrooms had been placed in the workshop shed or there was very closely spaced equipment and machinery. In some cases, the workshops were also used for storage of material and waste, including building material. Although there were windows provided most of them had grills, often only 2 exits for workshops existed, which, given the crowding and sectioning of workshop space may have resulted in barriers for evacuation in case of an emergency. There were also some ITIs which were poorly lit, and due to the placement of equipment and furniture were reducing natural light. Building maintenance in most cases was poor with the need of repairs, including in the workshop areas. Most of the poor maintenance was attributed to the lack of funds to undertake regular repairs.

While many of the ITIs are housed in old buildings and may be more than 60 years old, when designs did not necessarily consider disaster aspects, there has been no action taken to retrofit or improve the design of any of these buildings if in hazard zones. Three of the ITIs visited had been impacted by disasters. These were Nalbari in Assam and Mahad in Maharashtra which were vulnerable to floods and Naugaon had been damaged by an earthquake. Apart from the filling of the exposed foundation with earth post a flood in Mahad and closing a few toilets in Naugaon due to cracks after an earthquake, there was nothing else considered to reduce the vulnerability

of the ITIs to disasters. In case of Nalbari, due to the porosity of funds, sunken floors due to a flood more than 10 years in the past had not been repaired. Inadequately addressing post disaster repairs may make these buildings dangerous for students and staff using them. While in Assam discussions indicated that in future building designs should be made earthquake resilient, there was no discussion on retrofitting old and vulnerable buildings for earthquakes.

Handicapped access was limited, with ramps available in most workshops to move heavy equipment mainly. Some classroom buildings had ramps for handicapped access, however overall the buildings and toilet facilities did not cater to the handicapped. The focus of vocational training to the handicapped was through the Vocational Training Centers (VTC). One such training center visited was in Guwahati. This center had ramps to access all floors along with a lift, and toilets had been designed for handicapped use. However, the access road to the VTC itself was a poorly maintained mud road. Therefore, access to the center by handicapped students was likely to be a challenge. It was also noted that the functional women's toilet at the VTC was in very poor condition. Equally, since the VTC did not offer any NCVT accredited courses and VTCs are limited in number, the need for appropriate infrastructure for handicapped access in regular ITIs is also required.

There is construction taking place in a number of ITIs. While some of this is a part of regular maintenance work, while some is new construction for expansion of existing buildings or facilities or other related infrastructure. However, construction sites in ITIs were poorly managed, as was noted in Uttarakhand. There were no facilities for the workers or their families, who were living at the construction site. Construction site management was poor with material not properly stored and the site was accessible by the public. Workers did not have sufficient safety equipment and were at risk to accidents.

6.1.1.3 Gaps

In overcrowded ITIs, where classrooms are accommodated in workshop sheds, when practical classes are on, noise levels may be high and is a disturbance to students in the adjoining theoretical classes. Also, from a safety perspective, this creates hindrances to movement of students.

Existing building or other facilities like toilets in most ITIs do not cater to the handicapped. At best handicapped facilities in the ITIs are limited to a ramp to the entrance of the ground floor sections of buildings.

Post disaster retrofitting is limited, due to limits in maintaining funds. The result was that ITIs such as Naogaon in Assam, post an earthquake there continued to be cracks in the building. Similarly, both in Assam and in Mahad, had created damage to buildings, which could do with further reinforcement.

Building maintenance is variable and dependent upon both availability of funds and interest of the staff. Therefore, while some ITIs; who have proactive principals and staff see maintenance work as required, in others cracks on floors and pealing of cement off the walls can be seen.

Construction management and safety is variable, and not all construction sites are well managed. Safety is of major concern for construction labor and their families, though due to open access to public to such sites even public can be at risk. Construction sites also require appropriate toilet or other facilities for labor living at the site.

6.1.2 Occupational Health and Safety

6.1.2.1 Issue

ITIs, are training centers for various trades, with a large number of them being mechanical trades that aim at developing a skilled workforce to enter the industrial sector. Therefore, they provide activities for and train students on industrial activities. There are workshops with heavy equipment and industrial training activities undertaken. Therefore, safety concerns as may occur in a factory work floor may also exist at these ITIs. These ITIs, due to the virtue of their mandate are also centers where the future industrial workforce learns good safety and occupational health standards and practices.

6.1.2.2 Observations from the Field

Existing syllabus set by the NCVT for mechanical ITI trades includes a section on occupational health and safety (OHS). This is the first section of the syllabus. The students that study these courses are expected to know about good and poor safety practices of their chosen occupations. This module mandatory for all NCVT courses. However, for special course designed and run by private agencies there seems to be no such mandatory requirement as the industry creating the course decides its contents.

In general, the courses give a brief section on tool handling for each trade, first aid practices and basic safety gear to be worn. Very briefly there may also be a mention of the need to dispose waste properly and not to pollute the environment in some of the trades. However, in reality there is very little on waste and material management in the syllabus. There is also no discussion occupational health and safety.

In ITIs and trades where safety gear exists and is used, the students learn how to use the gear and work with it. However, there is little emphasis on the need to use safety gear and students often work without wearing/using required safety gear. Some of the concerns identified in ITIs where safety was not adequately addressed were (i) worn out and insufficient to protect gear; (ii) lack of maintenance funds, resulting in old, broken or worn out gear not replaced; (iii) inadequate understanding of use of safety gear, such as the welder trade where only the person doing the welding may be using eye protective gear while other students watching the process without protective gear; and (iv) students wearing slippers in workshops. Accidents mainly noted in the workshop included cuts, burns and some electric shocks, though there had been very few major accidents.

While trade specific tool usage and safety requirements are discussed in the course, there is limited discussion on overall occupational health and safety standards for industries. This results in inadequate understood by the trainers or students, where such discussions do not take place.

Workspace safety and safety equipment is mainly limited to fire extinguishers, which are a combination of half-filled sand buckets or fire extinguishers. Often fire extinguishers and fire alarms are inadequate or missing. Fire extinguishers in many cases was found to be beyond its shelf life, and often not visible in workshop areas where accidents and fires can occur.

There were very limited safety education classes or drills taken. In Maharashtra where safety drills were taken, it was the fire department who gave a lecture once or twice a year. However, there were no safety plans or emergency plans in case of any accident in place at any of the ITIs visited. ITI staff was also not trained for managing any emergency or disasters.

Since waste, broken furniture and building material like bricks are stored in the workshops, classrooms or in corridors, there are obstacles of evacuation of buildings if an emergency occurs. The result was workshop and class room buildings entrances, windows and passageways were obstructed. In many buildings wires were hanging loosely or running on the ground, floors were at places slippery or had oil, diesel or grease spilt, creating further barriers in case of an emergency.

First aid is usually available at all ITIs, though there is no pharmacist or doctor. In case of an accident which requires more than simple first aid, the injured person is to be taken to the neighboring hospital. However, in some ITIs like Garwah in Jharkhand, the first aid box was empty. While many ITIs had vehicles that could be used to transport the injured to the hospital, this was not the case everywhere, as was again observed in Garwah.

6.1.2.3 Gaps

While all courses give a short introduction on safety in the specific trade; in reality, admissions continue till September while the classes start in August. Therefore, classes on safety are only taught to these who get admission and start their classes in the first week of August. Furthermore, since there is no repeat learning or emphasis on safe workshop practices prior to starting workshop activities, most students do not seem to recall these classes. Overall, there seemed to be a narrow understanding of safety with main emphasis on how to use gear in trades, building safety and equipment are not given adequate importance.

Emergency, accidents and disaster plans do not exist, and are not a part of the overall thought or planning process for ITIs. Even day to day running of ITIs does not consider good building management practices to ensure safety and safe and efficient evacuation of people from the premises in case required. ITI trainers and other staff do not have any training on the use of safety equipment or situation management in case of a disaster.

Existing emergency equipment such as fire-fighting equipment is also inadequate. Discussions with staff in Mahad indicated that while fire extinguishers were available, they could not be used for electric fires or any chemical related disasters. This was mainly as understanding on the needs of emergency and firefighting equipment for ITIs at the procurement level, given its varied trades and activities, was limited and only standard fire extinguishers were procured and distributed.

6.1.3 Water Supply, Sanitation and Drainage

6.1.3.1 Issue

Given that ITIs are technical training institutes, they need to have some basic infrastructure, such as sanitation facilities for staff and students, water supply for toilets, for washing up after practicals and for other uses, and proper drainage from toilets, from workshops and from the grounds in general.

6.1.3.2 Observations from the Field

Water supply, sanitation and drainage systems differ between ITIs. While ITIs visited in Assam and Telangana were largely dependent upon groundwater and often had their own tubewells and dugwells, in Maharashtra it was a combination of municipal water supply and groundwater. Some ITIs, such as in Uttarakhand and in the Vidharb region of Maharashtra, there were water scarcity concerns. In Pandakawda the ITI had developed its own water harvest system which was

used to replenish the groundwater and helped assure water for the ITI tubewell. However, this water harvesting system was poorly maintained and had waste dumped in it. In Telangana the ITIs had also installed reverse osmosis systems for supplying drinking water, with the wastewater from the system used to irrigate the gardens.

In general ITIs seem to have drinking water coolers, and open areas where students could wash after workshop practical classes. Many of the toilets visited however did not have readily available water in taps. Therefore, there was limited enclosed space available for post practical training washing if required for girls and female students.

All ITIs had toilets for students and separate girl and boy toilets. Staff toilets were separate. However, in the case of an ITI in Uttarakhand one of the girl toilets had male urinals fitted, and in another ITI in Assam due to structural damage from an earthquake to the girl's toilets they had to share the toilets with boys. This could not only create reluctance among the female students to use the toilets but could also be conflict point for sexual harassment for the girls. Water availability and maintaining of toilets was not always adequate. Therefore, a number of the toilets visited were not very usable. There was also no waste disposal system available in any of the girl's toilets seen. A visit to the VTC in Guwahati also showed similar problems, with the only open girl's toilet in the training center being filthy and unusable.

Sewage disposal from toilets in ITIs varied. While in some cases there were septic tanks, some others were connected to the local sewage system; especially in urban areas. Yet others had their toilet waste disposed directly into open drains.

Along with sanitation management, drainage also seems to have little attention focused on it. Most drinking water coolers had no systems to drain away the spilt water from them. Drainage was also inadequately addressed in many ITIs, with water from various processes or the cleaning taps directly discharging onto the soil. The drains were also used for the disposal of liquid waste and were receptacles of solid waste.

6.1.3.3 Gaps

While most ITIs seem to have adequate drinking water supply, water for toilets has not got adequate attention. Many taps do not have water. Not only this is an issue of personal hygiene, but for girls who might need to wash after a workshop practical, this might be an even bigger problem given that taps used in the garden for post practical washing by the students will not give the any privacy.

Source sustainability in water scare areas, while given some consideration in a few ITIs, such as in Pandakawda, needs further attention. Since most ITIs also have large grounds and any have gardens, water harvesting and water conservation need to be further focused. This may also be of greater relevance for institutes where they have their own water source, such as tubewells. In case of the only water harvesting structure noted – in Pandakawda, the structure was poorly maintained and filled with garbage, and is likely to have resulted in the contamination of the groundwater. To avoid such a situation, proper water harvesting guidelines should be used, which presently seem to be missing.

In general, there is no focus on toilet maintenance, or for ensuring some sanitation facilities are available for the handicapped who might join the ITI. Toilet facilities in the VCT visited was also poor and some of the toilets were unusable.

Presently, there is very limited focus on drainage. Where drains exist they are often used for the disposal of liquid waste from workshops; or as noted in Naugaon, even toilets directly discharged into open drains.

6.1.4 Material Management and Waste Disposal

6.1.4.1 Issue

There are two major issues with reference to material – those of its management and storage and that of waste generation and its disposal. Both of these issues are relevant to the good functioning of an ITI as most ITIs need to procure and store material to be used in workshops, and workshop working results in production of waste. Material procured and used, and waste generated, includes all sorts of material right from rags and paper to e-waste, used and old safety equipment, workshop equipment including sharps and other liquid and solid waste. Construction activities to create waste which needs to be disposed properly. Some of this may also be hazardous material such as asbestos.

6.1.4.2 Observations in the Field

Waste and material storage

The existing waste disposal system requires that waste be collected and stored prior to its disposal though a bidding process. Discussions and visits to various ITIs suggested that there is very limited waste storage space; if at all, allocated. While in some cases waste was found to be kept in a corner of the workshop or in theoretical teaching area, in some others it was found to be dumped in the open. This includes assorted waste streams, including vehicle engines and parts, furniture, empty drums used for diesel and other liquids, electronic items and scrap produced from turner and other trades. Since there is no specific space allocated for different types of waste, much of this was noted to be dumped together and could be a risk in case of disasters such as fire from short circuits etc. Also, as waste does not seem to be disposed regularly but anytime from 6 months to 10 years this creates a greater need for systematic storage of the waste to ensure it does not result in pollution or accident hazards. Furthermore, in case of electronic waste, the legislation mandates that e-waste cannot be stored for more than 180 days. Therefore, any storage of such waste beyond 6 months is in violation of the regulation.

Since many of the workshop activities require material, safety equipment and tools, these are also stored in the ITIs, where available. There is usually a storage facility for most of the material, and as required there is a need to request for the material. A visit to the stores showed that there were varied storage systems adopted. Some ITIs following a systematic storage of all material to ensure it is in good condition, others had a room/store where material was unsystematically scattered. Also, it was noted in at least 1 ITI visited that a few big drums of diesel were kept in the workshop for ease of use. Unsystematic storage of material and large quantities of diesel being stored in the workshop can risk accidents for staff and students who access the areas.

Waste disposal systems

Presently there is no waste management policy or systems in place for ITIs. Discussions at the state level suggest the existence of a system for waste disposal. According to this system all equipment, scrap waste, electronic items, office furniture, transformers and batteries and other major types of waste are to be stored and auctioned either by the state or by the ITIs after inspection by a committee of experts. The expert committees include of officials from the state

level, local experts for specific waste types, and the ITI principal. The committee may also include other experts such as the Regional Deputy Director (RDAT / MSDE) and industrial representatives. This committee is to inspect the waste and ensure it is unusable before it can be disposed. Once the waste is declared as unusable through advertisements in local newspapers and the commissioner office advertisements are placed inviting tenders, and the highest bidder is sold the waste. There are no pre-identified waste traders and the waste is sold to the highest bidder.

In reality, there are a number of different ways that waste is disposed. While some of the waste, especially large equipment is sold through the bidding process, the rest may be disposed locally. Usually bottles and boxes, including plastic bottles that may have containing material of the beautician course and cleaning agents may be burnt or thrown with the regular waste to be collected by the municipality. In the girls ITI in Guwahati some of the more attractive empty cosmetic containers are also be taken home and used by the students. Scrap from workshops, wires and paper was in many cases disposed along with other municipal or town waste.

Burning of waste was also noted in many cases. This included paper, plastics, food wrappers, wire (for material recovery), leaves, cleaning rags and cotton from the workshops and anything else that could be disposed through burning. One of the waste burning sites visited also had some broken asbestos from the roof renovation.

There are no proper systems for the disposal of liquid waste from the workshops. This waste includes coolants, oils and chemical that maybe used for various workshop processes or cleaning. Discussions suggested that they were mainly disposed through the regular drainage system, though in some cases they were also poured into a pit in the ground, specifically made for them, or disposed in the ITI septic tank.

Some of the waste, both liquid and solid was also reused. In Pandakawda in Maharashtra paper waste was used by the dress making course where possible to cut designs. Diesel waste is also often used for cleaning machinery. Electronic waste in the Nizamabad ITI in Telangana was also noted to be cannibalized for the electronics course to the point it was usable.

This concern may be further exacerbated if upgrading activities include can include upgrading equipment. Many machines such as the fitter and turner machines were manufactured in the 1950s and are now obsolete and at times non-functional. Therefore, there is an interest in upgrading machines. This may result in large quantum of waste being created, resulting in further pollution to the environment. There is also no proper waste disposal system for hazardous waste, such as asbestos, which may be removed from old buildings during renovation.

Construction activities are regularly undertaken in ITIs, thereby generating waste. This waste is neither properly stored nor disposed. Construction waste was seen dumped in and near the grounds in many instances. In Pandakawda where there was some repair work for the roof underway, the old asbestos roof material had been dismantled. Although some of the officials involved in the discussion at the ITI knew about the need for special disposal of the asbestos; part of it - mainly broken pieces, was found to be dumped behind the workshop. The disposal of the Asbestos Concrete Cement (ACC) roof was also poor, as it was found dumped along with other waste like papers, garden organic material and packaging material to be burnt.

6.1.4.3 Gaps

While most ITIs have a specified area for material storage, waste storage systems are not well developed and waste is found dumped all over ITIs. This includes in the workshops, in classrooms, corridors and in the open. Also, waste segregation according to type prior to disposal is not carried out and mixed waste streams are stored together. Furthermore, in case of electronic waste, the legislation mandates that e-waste cannot be stored for more than 180 days. Therefore, any storage of such waste beyond 6 months is in violation of the regulation.

Unsystematic storage of material and large quantities of diesel being stored in the workshop. These can become accident risks and an additional hazardous for staff and students who access the areas. Appropriate norms and systems for material storage, and amount to be available for working needs do not seem to be in place.

Waste disposal is unsystematic and there is no waste disposal system for liquid waste. Some liquid waste could be toxic, especially for areas where trades such as those related to the chemical, health and textile industry exist. Much of this is poorly disposed in drains or in the soil and may cause environmental pollution. In the case of solid waste, the only system that is in place, but not always properly followed is disposal of waste to the higher bidder, therefore all sorts of mixed waste is being disposed, and some of this like plastics and used chemical bottles may require better waste disposal systems.

Hazardous waste management is poor and do not comply by existing legislation. This is especially noted in the case of batteries and e-waste as the only criteria identified is that the highest bidder. Equally, as there is no single system being used, in many cases waste such as batteries and plastic material are being disposed in ways that can result in environmental pollution. Also, the disposal of ACC roofing material was found to be inadequate, despite this being declared as a hazardous chemical by the national laws. During field visits it was noted that broken ACC roof sheet were dumped in the compound, some of which were also being burnt along with other garbage. This poor management of asbestos may result in serious health concerns and environmental pollution.

Other construction waste was also noted to be poorly disposed, and there was no construction waste management guidance available.

6.1.5 Other issues

6.1.5.1 Issue

There were a number of other day to day issues identified in the running of the ITIs. These included overall poor system maintenance resulting in the degradation of equipment; lack of systematic management systems and resultant varied management of ITIs not all of which was beneficial to the running of the ITIs; and other external problems to ITIs from the neighborhood.

6.1.5.2 Observations in the field

In general, it was noted that workshops were clean and relatively free of scrap and waste around the machines, as students had to undertake regular cleaning and maintenance both before and after their practical classes. However, due to the expansion of activities in many ITIs, the workshops were cramped and there was a shortage of space with theory classes at times also being held in the workshop. In the Mumbai ITI some workshops were also set up in a vehicle garage due to shortage of space. Despite maintenance, some of the equipment was rusting as was very old or, as in the case of Mahad, had been affected by flood waters. In Garwah, despite the

equipment being relatively new, due to poor building maintenance resulting in leaking workshop roofs, the equipment had started to rust.

The running of ITIs, it was noted was dependent upon individual institute principals and IMC members. Proactive principals and interested private partners did result in better ITI functioning and improved work environment. The availability of better facilities and interested trainers at Nizamabad ITI could be attributed to both a proactive principal and an active IMC member. Individual greening drives and plantation activities in the Delhi Pusa ITI was lead by the principal of the institute, who had converted part of the hard outdoor surfaces to green areas. In Telangana, the ITIs were also involved in state let plantation initiative, where each large ITI was planting at least a hundred trees.

While overall due to the workshop design of old ITIs there was good use of daylight, in Ratnagiri the ITI had also become more energy efficient with the use of solar street lighting. Similarly, the Nizamabad ITI was generating part of its own energy through solar panels. In Nizamabad, students of the electric trade streams were involved in the management and maintenance of the solar energy system of the ITI. However, overall energy efficiency was low in most ITIs, where classrooms were often poorly lit.

Some of the ITIs were also faced with problems due to external reasons. In Nizamabad waste from neighboring areas was being dumped in the ITI premises with the ITI staff and principal having no powers or ability to stop this dumping of waste. In another instance, in Naugaon part of the ITI campus did not have a fence and therefore was used by public as a picnic ground or for vehicle parking. This could result in reduced safety of the ITI and its students.

6.1.5.3 Gaps

Basic guidelines, systems and finances for running ITIs seeming to be insufficient. Also, staff and principals often do not have sufficient training to take up their task adequately. In some cases, as in Garwah, there are no principals and stuff is severely inadequate to run an ITI, despite very proactive staff. Therefore, there are no basic standards and systems that all ITIs follow. This has also resulted in degradation of good quality and relatively new equipment, such as in Garwah and Mahad where the equipment was starting to rust, despite being less than 10 years old.

There is also no disaster management system in place for building and equipment safety. Since ITIs are spread though out the country and many are in disaster prone areas, this puts a risk to both the building and equipment. In many cases the equipment maybe very expensive and difficult to replace, and therefore will impact quality of training of students.

7.2 Impact Assessment

Considering that this program is for improving skills that create a larger pool of skilled and semi-skilled, it is likely to have a very beneficial impact to the country's economy and for those who are likely to be trained in the ITIs. Equally, as there is unlikely to be any big construction activity in this program and only a small set of ITIs from around the country are likely to be taken up under this program, it is unlikely to create any major adverse environmental impact. However, depending upon the type of planned upgrading, existing infrastructure and management systems, and the location of the program some impacts that require to be managed will occur. These, along with benefits from the program and possible impact management actions are discussed below.

Positive Impact	Negative Impact	Remarks (how to translate positive impacts to reality and minimize negative impact)
Result Area 1: Increased Performance of ITIs **Results Area 2: Increased Capacities of State Governments to Support ITIs and Apprenticeship Training**		
Improve understanding of industrial standards and occupational safety, and create standards for safety and good practices in industry shop floor The focus of ITIs is to create skilled and semi-skilled workforce, many of who will work in industries. Well trained workforce, understanding and follow good practices for material storage, will result in reduced accidents and pollution due to poor storage, handling and disposal of material. Improved industrial standards for occupational safety Improved systems for management of work environment Since ITIs handle a number of industrial activities, they also produce a variety of waste. Some of this is toxic or even hazardous. Providing an understanding and practicing good waste disposal while training is likely to result in these standards and systems becoming a part of the students' regular practices once they join the workforce and will have a larger positive impact to the	Focus continues to be on theoretical knowledge over practical application, and practice weak among students Main focus on knowledge of trade, giving inadequate attention to OHS Material and waste management does not get sufficient attention in the education system Inadequate safety at workshop level due to lack of funds for required safety gear Lax practice of safety norms at workshop as not priority Actual waste management practices poor, despite knowledge Inadequate attention to existing norms, standards and regulations for the management of waste Courses are short so emphasis on technical knowledge of the trade with safety given a backseat Space in existing ITIs and workshops, especially small ITIs is constrained, resulting in use of workshop as classrooms, and increased cramping of classrooms and workshop space. High noise levels when theoretical classes and practical work overlap in classes adjusted in	Ensure that course had focus on practical application of knowledge learnt. Occupational Health and Safety to be given as a separate set of lectures for all students Create a module/educate on material management, storage and waste management in each course depending the trade Ensure assured funds for safety equipment and maintenance of safety system in all ITIs Identify nodal officer, from training staff, to be in-charge of safety in ITI and ensure all students and staff are trained and there are regular drills for safety Ensure workspaces and safety exits exist and are not blocked; signage to guide during an emergency is there. Ensure all ITIs have an appropriate waste management system in place, which is clearly articulated and the principal and other members of the staff are aware of it and follow identified disposal plan. Funds for waste management are available, such as for storage and disposal needs.

environment and human health. Modern equipment in place that is more energy and resource efficient, resulting in lowered waste and energy usage. Functional, good conditioned and appropriate equipment resulting in less likelihood of accidents Improved infrastructure, if well designed and executed, will result in better and safer learning environments. Apart from on-job-training, in some of the ITIs the regular maintenance of the building is done by the staff and students, if the trades exist in the ITI. Therefore, the students become aware of regular maintenance and minor construction activities and also further improve their skills in construction activities. Supervision of construction of sites within the institute is undertaking is done by students and their teachers who study the construction trade, as was noted in the Guwahati ITI. If students get appropriate understanding of construction site safety and site management it can ensure a safe construction site and worker safety at construction sites within their campus and in future.	workshops. Higher risk of accidents due to reduced workspace in workshop. Construction of new or expansion of existing workshops without proper design Increased production of waste with new trades with continuing poor waste disposal systems resulting in increased environmental pollution. Higher number of students attracted, but insufficient infrastructure to cater to their needs Large quantities of waste generated in terms of old and obsolete machinery, their ancillaries and raw material and maintenance material specific to the machines Asbestos removal, use in new buildings/wings risking workers, students and ITI staff Construction sites poorly managed resulting in accidents, water stagnation and poor hygiene Poorly designed and constructed buildings, resulting in lower safety standards, poor drainage, lighting, access to disabled students, and risking safety of those using the buildings Not sufficient attention given to comfort in workshop, making it difficult to work in, such as in summers in high temperature areas Clearance of trees and vegetation for construction	Ensure any permission required for waste storage, disposal and discharge of waste is taken as required under the state and national laws. Ensure that principal and responsible staff are aware of legislation for waste storage and disposal. Ensure all courses have a OSH module and specific industrial safety norms Ensure safety equipment as required by the industry are available for workshop training Along with the introduction of new course identification of class room space and required workshop spaces should be made mandatory Theoretical course not to be taught in workshop areas Construction activities to be planned through existing Public Works Department (PWD) systems, and use of qualified architects and following appropriate environmental, safety and other required norms for ensuring safety of students and minimizing damage to the environment Along with the introduction of each course or expansion of course waste and safety management systems need to be identified and their implementation ensured. Ensure that there is sufficient water for trade, cleaning and hygiene purposes. If required supplement water supply

	activities Inadequate attention paid to worker safety, resulting in accidents, injury and environmental pollution at the labor camps and construction sites. Buildings new and old are vulnerable to disasters and risk students, staff and equipment. Focus on course or methods to encourage girls to join courses, but facilities not given adequate attention, reducing their comfort or resulting in lower attendance Business as usual – only look at courses but not building and infrastructure, access and safety for the disabled	with appropriate water harvesting activities. Adequate toilet facilities should be made available. Identify efficient and appropriate waste disposal systems for any waste generated from equipment upgrading activities, create required systems for the disposal of this waste, ensure that principals and staff at ITIs understand the system and follow it. Take any permission required for the disposal of the waste from the relevant departments prior to its removal and disposal Follow national guidelines for removal of asbestos in buildings Ensure no asbestos is used as building material for any new construction Use proper construction safety systems for all construction sites, including worker safety, restricted access to outsiders and provide required infrastructure to workers and their families in construction camps. Clear all construction camps and sites immediately after construction is completed. All building designs to be discussed between users (ITI staff) prior to their construction. Any upgrading should follow required standards for safety for specific use, ensure disability access, be energy efficient and provide

		required infrastructure for users such as adequate toilet and water and washing facilities. Required fire alarms etc. must be included in areas at risk to fire hazards – such as in workshops. If required alternate energy and water sources such as use of solar power, energy efficiency and water harvesting considered. Ensure buildings take into account local weather conditions and provide basic comfort for users As required permission for activities should be taken, such as for tree clearance which is usually from the State Forest Department. As required as compensatory plantation activities in case of need to clear vegetation for construction and to create a better and greener campus. Prior to starting any construction activity, ensure a proper construction waste disposal system has been identified and required permission taken. Ensure, the waste management and disposal system is a part of the contract of the construction consultant. Ensure buildings design consider local disaster at the planning stage. Where old buildings are identified to be vulnerable to a disaster, identify appropriate retrofitting activities to reduce vulnerability.

		Ensure infrastructure for girls and handicapped is adequate – such as proper toilets and washing areas. Ensure all buildings have required handicap friendly with required ramps and other required infrastructure. Workshops should also cater to special needs as required.
Result Area 3. Improved teaching and learning		
Improved knowledge on trades and good practice on the use of machines and systems Improved capacities to manage it is	Concentration only on technical aspects of trades, with insufficient focus on safety, OHS, and material and waste management Inadequate attention on required legislative requirements for different trades, as training just general in nature Inadequate attention on the management of disasters and accidents as most training either on technical skills or institution management	Ensure all capacity building and Training of Trainers (ToTs) include a module on OHS, accident and disaster management Capacity building activities should also provide basic information on legislative requirements for running an ITI, such as various waste related rules.
Results 4: Improved and Broadened Apprenticeship Training		
ITI trainees improve skills and understand working in industrial environment, resulting in overall increased safety standards within industries Good quality apprenticeship resulting in more industry ready trainees understanding modern techniques and working on modern equipment, most of which is likely to be more resource efficient	All industries may not follow good occupational safety standards, risking students Apprentice training may be dependent on individual industries, therefore some may be good, while in others safety standards etc. may be lax, risking students Informal apprenticeship may not have appropriate standards for safety or management of waste etc., resulting in risk to students and environmental pollution, also resulting in poor understanding of appropriate and inappropriate safety and	Improved monitoring of industries and identification of mechanisms to address occupational safety concerns for apprentices Create appropriate systems for grievance and feedback mechanisms for apprentices to report problems faced during apprenticeship, along with awareness on industrial safety requirements for industry hiring them. Working with industrial representatives such as Federation of Indian Chambers of Commerce and Industry (FICCI) and

	waste management activities Any construction and development of infrastructure will result in creation of waste. Digital learning activities resulting in inadequate energy to run courses leading in need to use battery operated systems – without adequate waste management systems Poor waste disposal system from digital learning equipment, resulting in increased e-waste, and its poor disposal Apprenticeship courses only on technical learning, little emphasis on OHS and waste management, resulting in poor understanding and practice among trainees	Confederation of Indian Industries (CII) to enforce improved safety systems for apprentices and OJT for ITI students and graduates Any informal apprenticeship linked to this program, ensure only those supported that follow certain standards for safety and adhere to environment regulation. Increase the use of energy efficient systems, such as energy efficient lighting, buildings used to maximize the use of daylight and ensure comfortable temperatures, identify alternate systems such as solar energy for use in buildings. Identify appropriate waste management systems that are also according to required batteries, e-waste and other legislation, and implement the system. Minimum requirements of courses to be identified and to include OHS and waste management For construction and building related activities see management under Results Area 1.

7. Social Assessment

Social Systems Assessment for the program was carried out through extensive stakeholder consultations and impact assessments.

7.1 Stakeholder Analysis

A stakeholder is defined as an individual/ institution who can influence/ or influenced by the program interventions. Analytical part involves mapping the stakeholders, sharing the 'program' with them, engage in discussions (individually or in a group) and evince a feedback. The stakeholders identified at different levels- national, state and ITI—and their expectations as well as issues and concerns thereof are presented below.

	Stakeholder	Expectations	Issues	Remarks
1. National Level				
	MSDE **(Director of Training)**	• Systems to enhance performance of ITIs – incentives for high performance, performance appraisal for faculty. • Enhance access to labor market and employability of trained youth. • ITIs are more inclusive and reach out to the most marginalized.	• Administration of ITIs is with the state government hence they cannot directly influence performance. • Vacancies at the ITI level are large and reluctance of the state to hire new people.	
	(Director of Apprenticeship)	• Modernizing and expanding apprenticeship training and making better use of on-the-job training (OJT) opportunities • Impetus for industries to provide opportunities to ITI graduates • Incentives for industries to absorb fresher, school dropouts, ITI dropouts • Basic training centers	• ITIs are not offering courses as per the trade needs of the industries • If a large industry is on the IMC panel then largely their interests are forged. Examples of partnerships with small industries are few.	There is a need to create opportunities for women, SC/ST/OBC and physically challenged in apprentice programs.

		for dropouts or freshers which are located in industrial hubs and offer trainings on trades that the industries require.		
	Director Women's training	• Course curriculum to have components on Gender which are addressed through interactive workshops. • Recruit women as instructors in ITIs. • Courses must have mandatory work-experience component so women enrolled get exposure in the real industry/job market and get motivated to develop a professional identity • Enhance the budget for guest faculty so accomplished women from various industries can be invited to give lectures	• A dominant tendency amongst women enrolled for courses is to select options that simply enhance their value in the marriage market and not to actually practice vocation or build careers • Limited exposure to industry and interaction with women who have accomplished themselves in the industry	
	Department of Social Justice and Empowerment	• Proper targeting of stipends for SC candidates. • Seats reserved for SC candidates are filled with SC students	• Mobilization of SC candidates is low.	
	Department of Tribal Affairs	• Tribal Students get admission in ITIs and apprenticeship opportunities. • Proper targeting of tribal students for stipends	• Due to unique cultural conditions and tribals do not like to mix with non tribals. This becomes an issue in terms of their migrating for jobs.	
	Ministry of Minority Affairs	• Inclusion of minorities in ITIs.	• Quality of training in minority ITIs could be	

		• Separate ITIs for minorities in districts which has a majority of minority population.	improved	
	Ministry of Industries	• Strengthening of the ITI system will ensure trained manpower for the industry. • Strengthening ITI partnership with industry	• Lack of funds for ITIs and lack of trained instructors have compromised on training in ITIs.	
	National Mission on Women Empowerment	• Infrastructure of the ITI should be more conducive to women. • Stipend amount for women should increase to attract them to ITIs. • Courses at the ITIs should include more women friendly trades.	• Skill development for women in agricultural areas is largely neglected. • Workplace should be more conducive to women	
	Confederation of Indian Industries	• Increase in the number of apprentices. • More industries will join the apprentice system.	• There are a lot of apprehensions among industries about the new Apprenticeship Act • Lack of awareness about the new Apprenticeship Act	
2. **State**				
	Directorate of Training	• Enhance budget for the state to enable recruitment and maintenance of ITIs. • Improve the governance system of the ITIs. • Help trainees to get training from the industry. • Increase wage employment and self-employment of ITI pass outs	• Instructor vacancy is high • Lack of human resource at the state level to manage the program and • Government unwillingness to create new positions and recruit people. • Stipend of girls need to increase in order to attract them to ITIs. • Placement becomes an issue because students do not like to migrate. • Filling up of vacant positions for trainers.	

			• Training of trainers • Affiliation of ITIs. • Separate ITIs for tribal students are required	
	Regional Directorate for Apprenticeship Training (RDAT)	• In order to make apprenticeship more attractive for the industry, a third party can make arrangements for apprenticeship. • A constant series of workshops to be held with industries to raise their awareness about apprenticeship. • PSUs and IT companies should be encouraged to take in more apprentices. • Strengthening of apprentice system.	• Lack of awareness among industry and students on benefits of apprenticeship program. • Subsidy program for apprentices like the Apprenticeship Prohatsan Yojana (APY) is not successful because of delay of funds. • Number of staff at RDAT is very thin and not adequate for it to cover all its functions therefore follow-up with industry does not happen in time. • How to bring MSMEs into the apprentice system. • Mandatory notice to be provided to all industry for paying of stipend.	
	Local Industry at the state level	• These form an opportunity for apprenticeship and placement for ITI students. • New Apprenticeship Act gives more flexibility to industry to recruit apprentices. • The revised stipend rates are quite attractive for students. • Some industries (Raymonds in	• Apprenticeship is only for engineering trades and very few apprentices are available for non-engineering trades. • Girls do not take apprenticeship opportunities in the industry.	

		Pandagouda) has played an active role in setting curriculum for textile as a trade in ITI.		
3. **ITI**				
	Principal	• ITI courses, teaching methodologies, learning environment is safe and inclusive. • Regular up-gradation of infrastructure and equipment. • ITIs to be flexible to introduce trades as per the local economy. • ITIs offer courses which prepares the graduates for job markets • More flexibility and decision making power of the principal	• Vacancy of position of principals is a major concern in Jharkhand. • Large vacancy of instructors in ITIs. • Very little budget for the ITI to buy consumables. • Financial decision with the principal is very low. • All grievance redress system existing in the ITIs is centered round the principal. • Vacant instructor positions forces ITIs to take instructors on contractual basis which compromises on quality of training. • Autonomy for budget allocations, hiring staff is not decentralized. Permissions and approvals are time consuming • Placement cells in some ITIs are not active. • Power supply to the ITIs is not always regular as a result practical lessons at workshops suffer.	
	Chairperson of IMC/Private Sector Partner	• Local industry should be given more autonomy in running of the ITI. • Trades and syllabus should be more aligned to the needs of the industry. • ITIs with a strong	• Pro activeness of the chairperson of the IMC determines the level of involvement of the industry. • In some cases the contribution of IMC towards the ITI has been limited.	

		private sector partner either in IMC or as PPP partner have the opportunity to raise resources. • PPP ITIs have more autonomy in taking decisions. • With the active involvement if industry some ITIs have been able to generate good amount of income because the PPP mode gives flexibility to the principal.	• PPP ITIs in some states have not done well due to weak private sector partner.	
	Faculty/ Instructors	• Up gradation courses for faculty members • Incentives for high performance • More opportunities for career growth for Contractual faculty • Constant training of trainers.	• Positions vacant for instructors • Contract instructors with very meagre remuneration are filling the vacant positions. • It is difficult to find quality instructors for contractual positions as a result there is a high turn-over of instructors. • Crèches for children will help to attract women instructors. • Lack of training of instructors. The instructors on contract cannot take the two years long CITS Scheme and no long term planning for short term courses for instructors.	
	Students Boys	• ITI certificate gives access to government jobs. • ITI courses gives an opportunity to learn to do a job with one's	• ITI courses are mostly engineering with very few courses for the service industry. • Students enroll for courses that are their second or	

		hands. • Gives them an opportunity to find overseas jobs.	third choice if they don't get admission in the popular and sort after courses, and tend to drop out before completion of the course. • Due to lack of budget there is a limitation of raw materials and consumables that are used to practice one job. • Safety gears are available for students. • Due to lack of counselling students face a shock when they enter the industry. • No module taught at the ITI which would give an overview of rights and entitlement of the workers. • No extra attention given to weak students. • Students drop out as either they find jobs or they are admitted to courses which are not their choice.	
	Students Girls	• Opportunity to learn trades by which they can get a government job. • There are reservations of seats for girls. • Even if they do not get wage income they can take up self-employment. • As an innovative practice, to attract poor students to ITIs a system of paying fees in kind has been initiated which is a great success.	• Despite reservations, large number of seats remain unoccupied or occupied by male students. • Opportunities for wage employment for women are limited. • Women continue to enroll for 'women centric' or courses based on their 'acceptable' gendered roles • Infrastructure like toilets are in very poor condition which deters girls. • Two years long CTS courses makes it difficult for girls to continue as they reach their marriage age by the time they complete the	

			course. • Access to the ITIs is difficult for girls as they have to travel long distances and rely on public transport. • Very few ITIs have hostel facilities for girls. • No proper mobilization and counselling for girls for ITIs. • Crèches for children would help to attract more women. • Very few women instructors. • Scholarship amount given to girls are very low to attract them to ITIs. • There are no committees in ITIs to deal with issues like sexual harassment.	
	ST students	• Reserves seats for ST students help them to get access to ITIs. • ITI helps them to get government jobs. • Some states have ITIs in the tribal areas meant only for tribal students	• No special remedial coaching for weak students. • Trades taught in the tribal ITIs are not in line with the traditional skills of the tribals. • Tribal ITIs are located in remote areas which are difficult to access. • Hostel facilities are not available in all tribal ITIs. • Scholarship amount for ST students is very low to cover their transport and/or accommodation. • Placement of tribal students in factories is not sustainable as they drop out due to lack of adjustment with the working hours and work culture of a factory.	

			• Special counselling for tribal students not practiced. • Jharkhand lacks special ITIs for tribals.	
	Minority Students	• In areas which has large minority population there are separate ITIs catering to minority students. • Helps the students to get jobs in the Middle East	• The faculty may not be coming from the same community. • Quality of infrastructure is always not very good. • Very few ITIs for minority students making the ones difficult to access.	
	Students with disabilities	• CTS courses are useful to get government jobs. • More opportunities for students with disabilities to enter ITIs.	• Infrastructure not suitable for students with disabilities. • Safety gears not available. • No instructors trained to teach students with disabilities. • No special efforts made to place students with disabilities. • Instruction materials are not available for students with visual disabilities.	

7.2 Issues Arising Out of Stakeholders' Consultation

The stakeholders' consultation carried out in different parts of the country brought out a whole range of issues for the ITI system in the country relating to inclusion and exclusion, vacancies at different levels, involvement of private sector, placement, apprenticeship and others.

7.2.1 Inclusion

As per government norm there should be reservation for women and SCs, STs and OBCs in all education institutes of the country including the ITIs. The percentage for reservation of seats for women is fixed to 30 percent in all states but that of SC and STs, it varies from state to state as per the population of SC and ST in the states.

7.2.1.1 Women

As per government norm there is an overall 30% of reservation for women in ITIs. As observed during the field visits in the ITIs across different states do strive at fulfilling this target. But this

thirty percent is not seen across all the trades in the ITIs. Presence of women in mainstream engineering trades is almost negligible. Women are mostly present in non-engineering trades like dress making, COPA, surface ornamentation etc. Thus leading to a gendered segregation where there are some trades which have all male students there are others which have all female students.

In order to attract women to ITIs a number of women ITIs exist in the country. But it was seen that women ITIs offer only these non-engineering trades. In many cases like the Women's ITI in Nizamabad in Telangana more than 50 percent of the seats were filled by men because it was difficult to mobilize women. There are several reasons for such skewed participation of women in ITIs. Some of the important ones are as follows:

- Social role of women: In Indian society women have a traditional role of being at home. Hence any occupation that requires long hours of working outside home is not popular among women. As a result, trades like dress making, beautician and others are taken up by them as these trades give them an opportunity to work from home in their own enterprise. Lack of market relevant trades for girls' results in their drop-outs more as compared to boys. This point was brought out clearly by ITI Principal at Gondpipri in Maharashtra which is a Tribal ITI. Only a small percentage of women who pass out of ITIs do their own enterprise as they get married and their reproductive role takes a priority.
- Mobilization and Counselling: It is seen that the ITIs do not make special efforts to reach out to women and hold counselling sessions with them on prospects of ITI training for girls. Therefore, attempt should be made to have mobilization and counselling of girls at schools to make them aware of ITI training and job prospects.
- Duration of the course: The engineering courses are mostly of two years duration. Therefore, by the time they complete the course they reach the average marriage age in India (18 years) which deters them against choosing these courses.
- Infrastructure: Infrastructure in ITIs in terms of toilets for girls, residential facilities etc. are very poor. Though there are separate toilets for girls in ITIs these are very badly maintained with irregular water supply making the facilities unhygienic for use. Similarly, very few ITIs have residential facilities for girls as a result only the girls in nearby areas can attend the ITI. In rural and semi urban areas this lack of separate hostel for girls have a negative impact on admission of girls in ITIs.
- Transportation: Public transport is the only way by which one can reach the ITIs. Even ITIs in the remote areas have no transportation system of its own. This to some extent deters women to come to these institutes if they are located at a distance from their homes. Give an idea of distances.
- Instructors: It was seen that most of the instructors in engineering trades in the ITIs were men. This could be one of the reasons why women are not present in engineering trades. Though there are some women instructors in modules like employability skills, mathematics and others, there numbers are far too few.

- Stipend: The amount paid as stipend is very little to attract anyone for the course. In Assam it is as less as Rs. 125 per month too little to cover even the transport cost to reach the institute. Moreover, the amount is not regular.
- Security of employment: Women prefer regular employment with regular working hours. Hence it was seen that even in areas where women were taking up engineering trades like wiremen, electrician, diesel mechanic and others they had specific government jobs in mind like with the state electricity boards, railways etc. In case they do not get government jobs they rather prefer to be self-employed where they can work from home.

7.2.1.2 Schedules Castes

As per national norm overall 18-20 percent of seats are reserved for SCs and other backward castes. However, depending on the population of SCs and backward castes in a particular state, the state has the power to increase the percentage of reserved seats. For example in Haryana which has a substantial percentage of OBCs and SCs one ITI in each district of the state has a special wing for SC and OBC students where 75 percent of the seats are reserved for them.

As per our observation, most of the seats reserved for SCs are not filled and later are filled by either OBC students or students from the general category. SCs occupy only 8% of the total seats in the ITIs against the reservation of 11 percent. One of the reasons for this is the extreme poverty and backwardness of SC population in the country which is visible in terms of their poor education attainment at the secondary level. OBCs on the other hand are more privileged and therefore occupy more than 33% of seats in the ITIs against the national norm of 25% reservation

7.2.1.2 Tribals

As per 2011 census, 8.2 percent of the total population of the country belong to Scheduled Tribes. As per norms overall 7.6 percent of seats in ITIs are reserved for ST students. However, actual reservation of seats for ST varies from state to state depending on the ST population in that state. States like Punjab and Haryana have no ST population whereas states like Mizoram and Nagaland has about 95% ST population.

Apart from reservation of seats, in some states there are special ITIs for tribals only. The seats of these ITIs are not fully occupied by ST population and a certain percentage (15-20 percent) are occupied by non tribals as well. In order to attract more tribals and strengthen inclusion in the ITIs the Government has established tribal ITIs in some of the tribal districts where there is more than 75% reservation for tribals. However, this is not uniformly followed for example, in Jharkhand there are no tribal ITIs.

As per our observation it was seen that the quality of the tribal ITIs were generally observed to be inferior to the general it is in terms of infrastructure, equipment and even existence of trained instructors. One of the reasons for this is that the tribal ITIs are generally located in the remote areas where normally instructors do not like to go as a result they seek to be transferred. The tribal Departments of the states pays stipend to the students admitted in

ITIs. However, the amount of stipend varies from state to state. In Maharashtra the Tribal Department pays a stipend of Rs. 500 per month to Tribal girls for residential courses and Rs. 600 per month for non-residential courses.

In Maharashtra there is unique program known as *Ashram School ITIs* for tribals. These ITIs are located in the Ashram residential schools for the tribals and cater to only girls. The location of the ITI within the girls' school campus gives a level of "comfort" for the ITI students. Thus it is easy for them to mobilize students from nearby areas as the environment is "non-threatening". As a result, these Ashram School ITIs are able to achieve admission of girls.

Lok Seva Kendra is another interesting innovation of Government of Maharashtra for ITIs located in the tribal areas. Under this scheme the ITIs are used as a common facility for the local youth who have received ITI training to use it as a production center with a payment of nominal fees. Though conceptualized as for the ITI students to take up self-employment with very little capital cost, the scheme has not been very successful due to lack of proper implementation.

7.2.1.3 People with Disabilities

As per norm 2% of seats are reserved for people with disabilities. However, as per the observation of the team these seats normally go vacant or are filled by students of general category. The reasons for this is as follows:

- Infrastructure: One of the important reasons for lack of participation of people with disabilities is the infrastructure of the ITI which is not suitable to address the special needed of the people with disabilities. In none of the ITIs visited during the assessment one could see existence of any ramps or railings. In most ITIs classrooms were held in upper floors where it is difficult for people with orthopedic disabilities to access.
- Learning materials: The teaching learning materials are also not conducive for people with disabilities as hardly any material is available in braille.
- Lack of training of trainers: Instructors at the ITIs also lack any training to deal with people with disabilities.
- Placement: Placement of candidates with special needs is very difficult. It is only seen in some hotels which under their CSR have engaged a few people in housekeeping. In this case the candidates were mobilized and trained by an NGO working with people with disabilities trying to give them a dignified life. Within the government system it is very difficult to mobilize and place such students.

7.2.1.4 Minorities

In order to attract the Minorities to the ITIs the government has special ITIs for the Minorities in districts which have substantial minority population. Two ITIs were visited by the team which were specifically for minorities. These included Government ITI Mumbai and Govt. ITI Bodhan in Nizamabad in Telangana. In both the places admission of minority students were not seen as an issue as the classes were full. In Bodhan it was noticed that students travelled substantial

distance (40 km in some cases) to reach the institute. Girls were over whelming in the Mumbai ITI. However, it should be noted that the ITIs for minorities were not the best ITIs in the district in terms of rating. Minority students who have scored high marks prefer general ITIs.

7.2.2 Vacancy

In all the Directorates visited during the assessment, key positions are vacant as a result officials are burdened with multiple responsibilities. This has led to over burdening of the existing staff. In Assam all five positions of Deputy Directors are vacant at present. Their work burden is shared by one Joint Director and one Assistant Director. As a result of this regular monitoring of the ITIs becomes a problem by the Directorate staff.

Apart from the Directorate, on an average thirty percent of position of instructors are vacant in all ITIs. In some ITIs (Women's ITI Nizamabad under PPP) all the positions of instructors are vacant. In such cases the Directorate has appointed instructors on a contractual basis giving them hourly/daily rates with no other benefits. As a result, these instructors appointed in contractual basis get as low as Rs. 5500/- in some cases (Assam). This is a serious problem as good quality of trainers are not available in the system which in the long run affects training quality.

In this regard it should be noted that apart from instructors there is also a large vacancy of officials at the Directorate level. (In Assam none of the five positions of Deputy Directors are occupied). This means each person at the Directorate performs multiple functions thereby compromising on the time and quality of each activity.

7.2.3 Curriculum

The present curriculum of the ITIs has a component on employability very little component of soft skill as a result the students who pass out of the institute lack basic skills on work readiness which is a big disadvantage. As a result employers complain that ITI students work culture and discipline resulting in irregular attendance in work.

7.2.4 Training of Trainers

The instructors in ITIs have two training programs – a long term under CITS and other short term trainings. The long term program is a residential program for one year held at select locations of the ATIs. Due to large number of positions vacant for instructors, states can hardly spare their instructors for long term training. Short term training on specific trades are held by the ATIs where even the instructors on contractual basis can also participate. But these trainings are ad hoc and without any human resource development plan at the central or state level the instructors are not able to take full advantage of these programs.

A few large private sector companies like Mahindra and Mahindra have taken the initiative of organizing training of instructors in Maharashtra. They organize short term courses for instructors which are mostly around changing their mentality, getting them familiarized with latest machines, safety requirements in industry, quality management systems, preventive

maintenance and schedule maintenance training. This is held every year through a six days training module. The state of Maharashtra is very proactive and have also tied up with industries like Godrej to help them in instructors' training in a long term MoU. Other larger industries in the state are also partner in the same.

7.2.5 Involvement of Private Sector

Active involvement of private sector in various capacities has very positive impact on the ITIs. This is visible in terms of availability of equipment and machinery in PPP ITIs as well as training quality and placement. Even in ITIs which has an active Institute Management Committee where the private sector partner takes interest there is a positive impact in the quality of teaching in them. Women's ITI in Nizamabad which is set up in a PPP mode the equipment and other materials that are available for trainees are far better than the ones which do not have a private sector as a partners.

Moreover it is seen that the ITIs based on PPP program have more administrative autonomy and it takes less time for the principals to start a new course in the institute or get any new equipment for the institute. The In ITI workshop in Mallapally in Hyderabad that has been renovated by Maruti India Limited number of girls working as motor mechanic is higher.

The Ajmal Rural Technology and Demonstration Centre in Naugaon in Assam is a private ITI with limited number of trades. But they have latest equipment and are able to hire qualified trainers. As a result, the quality of training provided by them is very high where the students are also placed in jobs overseas. This attracts students to this ITI even if it means that they have to pay a high fee.

In ITI Pandakauda in Maharashtra the ITI chairperson played a critical role in designing of course curriculum and syllabus for textile and got it affiliated in NCVT.

7.2.6 Placement

As reported by the Directorate officials in the states on an average only 30% of students who pass out of ITIs are placed in jobs. However, there is hardly any systematic tracking in ITIs or at the state level. Mostly ITI students prefer government jobs in the railways or in the PSUs.

Placement of girls is low mostly because girls prefer to go for self-employment or pursue higher education in polytechnics as ITI training is also an avenue for girls who have dropped out in Grade 10 to obtain certification to attend higher education. In remote areas of Ghadchiroli, the girls who pass out of ITIs prefer to work from home as opportunities for wage employment is very few. Due to lack of public transport and other security reasons, self-employment is the best opportunity for them.

Placement among tribals is lower compared to non tribals. One of the reasons for this is that tribal youth lack confidence to mix with others. Tribals have their own language and food preferences which are distinct from non tribals and in a factory environment where same food is served in a canteen they find it difficult to adjust. The tribals are tied to their land and do not like

to migrate out for work. Principal of ITI Chandrachur pointed to several cases where the candidate refused jobs as it required them to re locate to another city. Several anecdotal details are given by teachers and principals where one batch of tribal students when they went to work in a factory returned after six months as they had problems of adjustment.

7.2.7 Apprenticeship

As discussed above, apprenticeship is one of the key strategies for skill training. Percentage of students who actually had the chance to have apprenticeship training varies from state to state. In Maharashtra almost 90% of pass outs from ITIs were able to get apprenticeship opportunities in large and small establishments. In Assam apprenticeship opportunities for students were few in number partly due to lack of industrialization of the state. Some of the issues of apprenticeship as observed during the assessment and discussion with stakeholders are as follows:

- *Inclusion:* Inclusion of women is one of the basic social concerns for apprenticeship program. Very few women are taken in as apprentices. One of the reasons for this that the trades which are most common among women do not have much opportunities for apprentices (dress making and beauty care). Apprenticeship is mostly taken for engineering trades where participation of women is very little. Another important reason for lack of women in apprenticeship is that in factories women normally do not like to work in late shifts. Hence large industries do not employ women at all because that would mean taking care of their safety and providing for transport, crèches and other facilities.

  Students from remote areas have difficulty in finding apprenticeship due to lack of industrialization in these areas. Yavatmal ITI in Amaravati region of Maharashtra had been the only CoE on Textiles and had been funded under VTIP Project of the World Bank. But students who pass out of this ITI do not find apprenticeship in the textile industry. Similarly, students ITIs located in Ghadchiroli area (remote tribal ITI in LWE area) do not have apprenticeship opportunities. Even states like Assam which do not have a large number of industries apprenticeship is very low.

- *Lack of awareness and information*: There is a lack of awareness among industry on the apprenticeship Act and their obligations. Large PSUs like Indian Oil Corporation, were not aware of the number of apprentices that they can have each year and trades under which they can take apprentices.

  Stipend: After the amendment to the Act in 2014 when the stipend amount was raised small industries have been careful in taking apprentices. As per the norms 90% of the minimum wages comes to almost Rs. 9000/- in most of the states. Small establishments are not willing to pay that amount as they are able to get young people to work on the job at a fraction of the cost
- *Apprenticeship Prohotsan Yojana*: This is a Scheme of the Central Government where 50 percent of the apprentices in the MSME sector are paid 50 percent of the stipend amount by the government. The Scheme has not been very successful due to delay of

release of funds by the center as a result of which students at times get the stipend only after they finish doing the apprenticeship.

7.3 Impact Assessment

STRIVE is a national programme that would fund a number of activities at the national, state and ITIs. About six hundred ITIs throughout the country is expected to receive support under the project. In order to ensure that the program has positive impact and the negative impact is minimized certain caution needs to be followed. The main issues under STRIVE are on inclusion, infrastructure, apprenticeship, lack of trainers and trainers training and strengthening of curriculum.

Positive Impact	**Negative Impact**	**Remarks (how to translate positive impacts to reality and minimize negative impact)**
Result Area 1: Improved Performance of ITIs Results Area 2: Increased Capacities of State Governments to Support ITIs and Apprenticeship Training		
- Improvement in training quality. - Trades in the ITIs will be more relevant to the market. - Training as per industry requirement. - Availability of modern equipment in ITIs. - Technology will enable good quality training to reach all ITIs even in remote and far flung areas. - Technology will also encourage women to take up trades which were traditionally not taken up by women. - Standardization of training would take place because of use of technology.	- Performance based incentivization may lead to marginalization of those ITIs who are more focused on inclusion of backward castes and communities as well as women. - Lack of power and connectivity in the remote areas may make it difficult for technology to reach these areas.	- Inclusion of an NGO at the state level will help in mobilization and increased participation of women and backward communities. - Have social inclusion as a criterion for incentivization of ITIs. - Introduce more non-engineering trades in ITIs to attract women. - ITIs to be more flexible and trades to be introduced which are more relevant to the local economy and the industry in the area.

Result Area 3. Improved teaching and learning		
- More number of trained instructors available for training. - Instructors will be trained to teach PWD - Rationalization of remuneration for permanent and contractual instructors.	- Since there is a large vacancy of instructors in the system there will always be a gap. - Technology may not be able to reach remote areas.	- Fill all vacancy for instructors. - Have more women instructors. - More number of short training programs for instructors will be more relevant. - Roping in industry for training of trainers.
Result Area 4: Improved and Broadened Apprenticeship Training		
- Lead to a well trained workforce in the country that will engineer growth. - Trainees will be exposed to industry environment. - Industry will be able to meet its manpower requirement. - Will increase mobility among industry. - Overall quality of training will be strengthened. - Apprentice clusters and modern apprentice system will include the unorganized sector in apprenticeship training.	- Students from areas/states with little industrialization will not get equal opportunities for OJT or apprenticeship thus further marginalizing them. - PWDs will be further marginalized.	- Incentivize industry to have more women as apprentices in different trades - Engage with Non-Governmental Organizations (NGO) to mobilize women - Software industry and PSUs should be encouraged to take in more women as apprentices. - Awareness raising of industry on apprentice act. - Apprentices system to be strengthened so that industry does not use them as cheap labour only with no liability for insurance and other accident benefits. - Improve the module on employability and work readiness to make it more focused on industrial needs.

		- Different strategies should be implemented for giving opportunity to tribals in apprenticeship programs. - Engage with NGOs to mobilize PWD. - For women emphasis should be given on self-employment.

8. Assessment against Core Principals

Core Principle 1 *Environmental and social management procedures and processes are designed to (a) promote environmental and social sustainability in the program design; (b) avoid, minimize, or mitigate against adverse impacts; and (c) promote informed decision-making relating to a program's environmental and social effects*

Applicability
Core Principle 1 in terms of environment and social management is one of the key principles of service delivery.

The ITIs are both study areas and have workshop where students are trained to join the industrial workforce. Therefore, workshop activities result in the production of a variety of waste, and can also be prone to accidents if good safety practices are not followed. Equally, as this is a national wide program, the existing infrastructure is also vulnerable to various locally specific disasters in the country.

Government of India and State government's policy framework is seen as adequate for attaining social sustainability. The reservation policy of the Government of India in terms of ITI seats is essential for enrolment of women and youth from SC and ST communities. The state governments, depending on the demography of the state, has separate reservation policies of SCs and STs. Apart from reservation of seats, there is an incentive (stipend) system for women, SC and ST youth in the ITIs. This amount however varies from state to state. Stipends are also provided for youth from the Minority community.

Strengths
National policies, regulation and other legislation for environmental management are well defined. States usually also have state specific environmental standards and legislation. Therefore, clearly defined environmental systems, regulations and standards exist. India also has

specified codes and standards for construction activities that cover all major identified safety requirements, including those for various disaster vulnerable areas such as earthquakes and cyclones. Industrial standards that promote quality for products and safety in industries are defined though the Bureau of Indian Standards (BIS). This includes a number of processes and products that are of relevance to the ITI training activities, such as for leather goods, food hygiene and electronics.

In case of construction activities, the PWD norms and standards are to be followed, and are supposed to guide for various local needs such as building strength in earthquake prone areas, which are well defined by BIS.

Institutional systems identifying environment procedures and legislation to be followed in the country is well defined. States have their own environment and pollution control department or directorate, who can be contacted for permits or any clarifications. In case of wildlife both divisional and state level officials exist. For pollution control there are identified laboratories in each state that are overall in charge for pollution control and monitoring of pollution management.

The legal framework that lays down the reservation policy of the government is well defined and is being implemented in all the states to various degrees. Apart from that there are separate ITIs for women, separate wing for SC population in some states and separate ITIs for STs in districts that has a substantial percentage of ST population. Apart from these, there are a few ITIs catering to the minority population in the districts that are dominated by them.

Gaps and Risks

Presently, there is little exchange between the Department of Skills and Employment and the Department of Environment or the State Pollution Control Board. Discussions in the states suggest that there are no permissions taken for discharge of waste from the ITIs, or to identify processes for management of various waste streams as mandated by the existing environmental legislation.

No standard waste management systems and processes are in place for the ITIs. Therefore, waste management is variable and in many cases very poorly disposed, including toxic and hazardous waste like batteries and chemical containers. Inadequate attention to sanitation and drainage also is resulting in water stagnation, poor hygiene in the area and possible pollution.

Building design to cater to disasters is presently inadequate. At Nalbari in Assam and Mahad in Maharashtra due to floods ITI buildings were damaged. In case of Mahad even the equipment had been affected. Similarly, in Uttarakhand the risk of erosion and landslide damage to buildings may be of concern to many of the ITIs.

In practice there are a few issues in terms of inclusion of women. Seats reserved for women are not filled by them and in most cases the vacant seats are filled by candidates from general categories. Even in the ITI some trades are exclusively taken up by women thereby which the ITI is able to meet the required criteria of 30 percent reservation as per government norm. Women only ITIs also admit boys as they find it difficult to fill all the seats by women candidates. The Women's ITI in Nizamabad had almost 50 percent male students. The quality of the ITIs for women are poor compared to the general ITIs. These ITIs have less number of

teachers and have limited number of trades. Even placement of women is low compared to the men.

The tribal ITIs are mostly located in the tribal districts in the remote areas. The quality of these ITIs is lower than that of the general ITIs in terms of equipment, infrastructure and trained instructors. It was pointed out that tribals have difficulty in continuing in jobs as they are unable to mix with the general population. No special effort is made on the part of the ITI to bridge this gap. The ITIs for minorities are also seen to be of lower quality than general ITIs in terms of equipment and infrastructure.

The ITIs are very poorly equipped in terms of inclusion of people with disabilities (PWD). There are no special courses offered to them, neither infrastructure suited to their needs nor instructors trained to deal with students with disabilities.

Core Principle 2

Environmental and social management procedures and processes are designed to avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program

Applicability

ITIs are spread throughout the country, and include a variety of ecological zones. Some of these may be more environmentally sensitive. The ITIs also produce waste some of which is hazardous or toxic, which requires to be disposed, which unless done properly would result in environmental contamination.

Strengths

Existing environmental legislation at the national and state level and the identified processes and procedures suggested are designed to avoid, minimize or mitigate adverse environmental impacts. These are to be followed by all agencies, organizations and establishments in the country. National, state and divisional officers are available for supporting enforcement of environmental legislation. For archeological sites, national and state laws and departments provide required guidance and permits for existing sites listed by them and for any chance finds. Therefore, in there are clear systems in place systems in place to avoid, mitigate any adverse impacts on natural habitats and physical cultural resources.

Gaps and Risks

Discussion at the state level clearly stated that there are supposed to be a waste disposal system in place for various waste types. Most equipment, metal waste and a majority of the waste from the workshops is to be stored in an identified place and disposed though a tender after inspection and identification as scrap by the state department and specialists locally hired for this inspection. However, the interpretation at the implementation level is varied. This risks creating pollution, becoming a hazard and environmental toxicity. The lack of awareness of disposal of

hazardous and toxic material, its use and disposal and legislative requirements was noted. Some poor practices included burning of empty plastic containers, disposal of batteries though the highest bidder without any check on whether or not it was a licensed vendor as required under the law, and dumping of broken asbestos roofing material in the ITI premises.

The program has a component on upgrading that may include the building and equipment. Considering that most of the equipment noted in the ITIs visited, and discussion with the ITI teachers, principals and other state level officials identified obsolete equipment as a hindrance to imparting adequate skills for a number of the mechanical trades, new equipment and machines may be purchased under the program. However, presently the waste management procedures are poor this may also result in larger quantum of poorly stored and disposed waste and environmental pollution or accidents due to poor waste storage.

Construction and upgrading of the building may also result in the need to remove and dispose existing roofing material made of asbestos. Also, as was noted in Guwahati's girls ITI asbestos was still being used in some of the new constructions as roofing material. While under the World Bank funding no asbestos can be used and would need to be ensured.

Core Principle 3

Environmental and social management procedures and processes are designed to protect public and worker safety against the potential risks associated with: (i) construction and/or operations of facilities or other operational practices under the Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and, (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazard

Applicability

The program includes options for upgrading buildings, and therefore construction activities may be undertaken and may also result in the production of a variety of waste that requires carefully handling. Similarly, construction would need labor and appropriate construction labor management along with site management and waste disposal.

Workshop floors train students for industrial activities and processes. Therefore, there is a lot of heavy equipment and activities that create a higher risk of accidents and injuries than other academic or training centers may have.

Strengths

There are clear PWD standards for building and construction which are to be followed by ITIs for any construction activities. NDMA and BIS guidance exists for hazardous prone areas. Equally, experience for undertaking construction in areas prone to hazards and disasters, such as earthquakes and coastal areas prone to cyclones exists. Therefore, experts and knowledge and technical know-how already exist in the country. Discussions in Assam also noted that the government plans that all future construction should be earthquake proof.

The existing course curriculums of mechanical trades have a short section on safety, especially handling of tools and basic safety gear to be used. This is the first chapter of the course. Therefore, basic knowledge on safety in the workshop is being imparted.

Gaps and Risks

Overall there is a shortage of funds for maintenance of existing infrastructure, resulting in many ITI buildings being in poor shape. Without adequate maintenance funds, even if any new construction ensures local hazards are addressed in the design, they may in the future become vulnerable to local hazards. Equally, in the present program design there is insufficient clarity on how existing buildings vulnerability to local hazards and disasters is to be addressed. Visits to ITIs identified a number of buildings damaged by disasters. In Assam cracks were noted in the Naugaon ITI building due to earthquakes, the Nalbari ITI had sunken floors due to floods. In the Mahad ITI of Maharashtra while some of the equipment was rusted due to floods, which was subsequently filled in with earth, though no further action to reduce vulnerability of the buildings to floods was undertaken.

The use of PWD construction standards and systems should ensure a basic standard that meets quality criteria while addressing local vulnerabilities. However, in practice this might not always happen as was noted in Pandakawda where the building was constructed in sections had faulty joints and gaps between the ceilings. This fault, despite many complaints from the Pandakawda ITI had not been repaired. Therefore, ensuring quality despite PWD standards and systems being used may not be ensured.

Presently, construction sites are not necessarily ensuring workers' safety or facilities, especially where construction camps are required. This was noted in Uttarakhand where basic safety norms were flouted and facilities were not available for the construction workers or their families.

Safety in the ITIs needs improvement, in many cases wires were found hanging, diesel barrels kept in the workshop for easy access, blocked or insufficient exits in the workshop, waste and equipment stored in passageways and inadequate or old and expired fire extinguishing equipment. Furthermore, staff and students are inadequately acquainted with safety equipment and procedures. In the workshop, few students were found using safety gear and if safety gear was available it was often old and damaged.

The apprenticeship program is important to ensure that students get experience to work in industries, improve their skills and make them come up to required industrial standards. All industries that employ a minimum of 40 people are mandated by law to have apprentices and therefore by law a majority of industries in the country need to take ITI graduates for apprenticeship. However, discussions suggest that not all industries follow appropriate safety norms. Therefore, apprentices in such industries may be vulnerable to industry related risks.

Core Principle 4

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.

Applicability

The program does envisage some construction of new civil works – buildings, sheds, workshops etc. which does require lands, requirements of which are likely to be much smaller relative to other development projects. The initial enquiries reveal that lands are available sufficiently in each state on the campus of government ITI s or that of the office of the directorate of employment and training. So, acquisition of private lands involuntarily is not necessary. In a few cases, lands could be secured through either purchase of lands on willing buyer-willing seller and on a negotiated price or through voluntary donations. In any case, it does not warrant securing 'the' piece of land. Thus, it provides flexibility in terms of the choice of location. Given this situation, of lands required being quite small and that it is not necessary; most cases government lands are available, and that a particular piece of land is not required, there is no need for involuntary land acquisition. However, securing lands shall abide by the following rules so as to ensure that the process is not only voluntary but also that no one is affected adversely. This core principle is not applicable for the environment.

- The land in question must be free of squatters, encroachers, share cropping or other claims or encumbrances.
- The facilities requiring land should not be site specific.
- This should not result in any physical relocation.
- This should not result in restrictions on accesses and transit.
- Voluntariness shall be ascertained by the DTE and duly documented. Under any circumstances, the land user will not be subjected to any pressure, directly or indirectly, to part with the land.
- The Department shall ensure that there shall be no significant adverse impacts on the livelihood of the household donating the land.
- Land transfers in donations / purchases will be complete, land title will be vested in the Government; and
- Provision will be made for redressal of grievances (ROG) if any.

Processes and Instruments

Voluntariness in the case of donations/ purchases.

Department shall conduct enquiries as deemed necessary, to understand the land user's 'interest'/ 'motive' behind the offer to donate land for the scheme.

Department shall also assess adverse impacts (if any) on the household of the donor as a result of parting with the land.

A certificate to this effect that they are satisfied of the 'voluntariness' and that if will have no impact on the livelihood will be prepared and signed by the Director, ET .

Certification in the case of government owned lands.

Director, ET, shall certify that the land is free of encroachers and squatters and no negative impacts envisaged.

Strengths

Securing lands will be easier, quicker and does not result in significant negative impacts.

Gaps and Risks

A directive capturing the rules governing securing lands should be prepared by MSDE and shared with all the implementing entities and put in place a mechanism for monitoring of the same. Key risk relates to inadequate monitoring.

Core Principle 5

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.

Applicability

India is a country with great diversity not only of geography but also in terms of economic endowments and social status. As a result, there are some communities living in some area who are more privileged than others due to geographic, economic and social exclusion. Some of the dimensions of *exclusion* are as follows:

- *Geographic or spatial exclusion.* Some people are excluded because of where they live. In rural areas, exclusion of physically 'remote' areas is common; these areas tend to have poor connectivity, infrastructure and services, and may have low resource potential.

- *Economic exclusion.* It is usually seen that a poor and the marginalised lack of access to resources, labour markets, credit, other forms of 'capital assets' and services. The poor lack of education and marketable skills and hence continue to be excluded from labour markets.

- *Social Exclusion.* Social Exclusion in India occurs in several dimensions – Caste, Ethnicity, Age, Religious Community, Gender and Disability[9]. In India, caste and gender have historically been the two axes of stratification responsible for the major inequalities in access - in as diverse areas as education, health, technology, and jobs. Scheduled Caste persons, in addition to being excluded from property rights, have also been denied rights to education resulting in high dropout rates, poor-quality education, and discrimination. As a result, there are large gaps in literacy rates and education levels between children of SCs and those of

[9] P. Radhakrishnan, Globalisation and Exclusion, the Indian Context, Global Asia, Vol 4 No. 1

other castes. This has further affected their access to skill training which requires a minimum level of education.

In the context of the skill training for employability caste based exclusion is extremely significant as in India certain occupations are caste based and skills are handed down over generations in the family. Occupations like carpentry, plumbing, blacksmith, masonry etc. which are in demand in the modern economy are restricted to certain castes. As a result, one sees that there is apathy for skill training in these traditional occupations among people.

- *Gender* based exclusion in the labor market is very predominant in India as it continues to be one of the countries where labor force participation is extremely low (about 31%). While male participation is high, female labor force participation (FLFP) has been dropping at an alarming rate. According to data from National Sample Survey Organisation (NSSO), FLFP fell from a high point above 40 per cent in the early to mid 1990s to 29.4 per cent in 200405, 23.3 per cent in 2009-10 and 22.5 per cent in 2011-12. Data further suggest that in some communities, notably upper caste Hindus and Muslims, there may be a stigma attached to women working outside the home especially if it involves work considered 'menial' which increases family and societal pressures to drop out if the men in the household are earning enough to foot the bills.[10]

  In addition, women in the labor force continue to face pay inequity, occupational segregation and gender discrimination. Cultural stereotypes regarding appropriate occupation for women continue to affect training institutes as well as industry in terms of available training courses for women and availability of jobs for them.

- *Tribals:* One notable group on the periphery of economic and social progress are the tribal groups (or 'Adivasis'). These people have been identified by the constitution as 'scheduled tribes' (ST).[11] There are an estimated 84 million tribal persons, which accounts for around eight percent of India's population of 1.2 billion. The tribal situation in the country presents a varied picture: some areas have high tribal concentration while in others they form only a small portion of the total population. While the statistics vary across and among STs, the best-available data reveal the following. Overall, in a review of poverty and development progress in India, STs show the slowest pace of improvements in a range of areas.[12] The proportion of STs population among the rural population living in poverty is high. It is about 15% — double that of their share in the total population of India.[13] Tribal people also fare

[10] Rupa Subramaniya, Why Female Labour Force Participation in India is Low, Business Standard, March 2016.

[11] There are 645 distinct tribal groups recognized as STs in India. More than half the population are concentrated in the states of Madhya Pradesh, Chattisgarh, Maharashtra, Jharkhand, and Gujarat (the 'central belt' of India). A second belt starts from the north, and comprises Jammu & Kashmir, Himachal Pradesh, Uttarakhand to the seven states in the north eastern region. The third is the southern belt with some STs in the south Indian states, as well as islands of Andaman & Nicobar and Lakshadweep.

[12] Das, M. 'Poverty and Social Exclusion in India', Presentation at the TFESSD Seminar, Oslo: http://siteresources.worldbank.org/INTUNITFESSD/Resources/1633731-1307643226089/Olso-TFESSD-SocialExclusion-Das.pdf

[13] GoI, Report from the 11th Five Year Plan. http://planningcommission.nic.in/plans/planrel/fiveyr/11th/11_v3/11v3_ch4.pdf

badly in respect of human development indicators such as health and education.[14] The tribal peoples' poorer education and health indicators are attributed in the first instance to poverty, which in turn, is a result of them being physically isolated, concentrated in remote hilly and forested areas suffering from poor accessibility and practicing mostly subsistence agriculture, often dependent on forest produce. The net result is that poverty among tribals is often intergenerational: they often pass on poverty to the next generation.[15] It is also in tribal and forested areas of India where there are instances of conflict persisting, which has further impeded development.

In response to the unique challenges faced by the STs, the Government of India (GoI) has undertaken a number of measures over the years. The Constitution of India recognizes the diversity of STs across India as well as other complex problems in terms of geographical isolation, socio-economic backwardness, distinctive culture, poor infrastructure facilities, language and religion, exploitation by various groups, and so on. In response, five broad categories of safeguards[16] are provided: (i) social – chiefly related to abolishing of un-touchability; (ii) economic – chiefly provision of fifth and sixth schedule areas; (iii) educational and cultural – reservations in educational institutions; (iv) political – provides for reservation of seats in legislature; and (iv) services – reservations in appointments or of posts in public employment. Thus India has both protective provisions to safeguard tribal people from social injustices, as well as developmental provisions to promote their educational and economic interests. Further, administrative provisions under the Fifth and Sixth Schedules give special powers to the state for the protection and governance of tribal areas and reservation provisions ensure due representation in legislative bodies and government jobs. The introduction of Panchayats Extension Act to the scheduled areas (PESA) was enacted by the Indian Parliament on Dec 24, 1996. This Act offers a provision for greater local control over resources and decision making to the tribal people through institutions like Gram Panchayat and Gram Sabha

The Fifth Schedule consists of districts in the states of Andhra Pradesh, Jharkhand, Chhatisgarh, Odisha, Telangana, Himachal Pradesh, Madhya Pradesh, Gujarat, Maharashtra and Rajasthan which are dominated by tribal population. As per the constitution each of these states is supposed to form a Tribal Advisory Council. The Constitution further provides that it shall be the duty of the Tribes Advisory Council to advise on such matters pertaining to the welfare and advancement of the Scheduled Tribes in the State as may be referred to them by the Governor.

The tribal majority regions of North East India, is the part of the Sixth Schedule of the Indian constitution. It has a set of legal provisions are designed especially for tribal majority regions in the North Easter hills of India. The Schedule provides for the constitutions of Autonomous District Councils (ADCs) under which all the tribal chiefs and headmen were placed. The idea was to provide a democratic voice to the tribal structures within the modern state.

[14] UNDP (2012), UNDP in India, http://www.undp.org/content/dam/india/docs/UNDP_in_india_2012_final_artwork.pdf

[15] Mahapatra, R. 'Why poor rural tribals will remain poor for generations' http://infochangeindia.org/poverty/books-a-reports/why-poor-rural-tribals-will-remain-poor-for-generations.html

[16] GoI, Tribal Constitutional Safeguards and Protective Measures for Tribals, http://ncsc.nic.in/files/ncsc/new6/261.pdf

Despite special position given to them under the constitution, tribals face discrimination in terms of health and education facilities. One of the reasons for this is that these areas are largely remote and are located in the hilly areas or areas covered by forests. Thus remoteness and serious institutional constraints exclude them both spatially and socially. Dispersed hamlets of the tribal areas makes it administratively difficult to monitor these areas. Education attainment has improved among tribals but still continue to be very low compared to the non tribals. Low voice of tribals in central decision-making and their alienation from land and forests are central to their continued exclusion from progress and development.

- *Minorities:* Five religious communities viz. Muslims, Christians, Sikhs, Buddhists and Zoroastrians (Parsis) have been notified as minorities under the National Commission for Minorities (NCM) Act- 1992. The data on religious minorities for 2011 Census has not yet been released. However, as per 2001 Census, the percentage of religious minorities in the country was reported to be nearly 18.4% of the total population. Muslims form the largest minority population in India (13.4%) followed by Christians and Sikhs.

  A wide variety of policy initiatives and programmes have been launched by successive governments to promote the economic, social and educational development of the minority communities in India. However, while the Muslims have no doubt made some visible progress, the perception remains that the economic and educational gap between the Community and the rest of the population in the country.[17] In terms of literacy status Muslims are much worse compared to other minority groups.

  Compared to the overall population of the country, higher percentage of Muslim population lives in urban areas. However, the participation of Muslims in education in urban areas is much lower than the general population. In case of girls, 50.5% of Muslim girls living in urban areas are not literate. Only 6.2% of Muslim girls have attained secondary education in urban areas. Work Participation rate among the Muslims is also lower than that of national average. (National average 39.1%, Muslims 31.3%). Muslim women are overwhelmingly self-employed (engaged in home-based work). Sewing, embroidery, *zari* work, *chikan* work, readymade garments, *agarbatti* rolling, *beedi* rolling are some of the occupations in which Muslim women workers are concentrated. Their work conditions are characterized by low income, poor work conditions, absence of toilet and crèche facilities, lack of social security benefits like health insurance and the absence of bargaining power.

- *Differently abled:* Disability has always been looked down upon by the society and the differently abled persons are not yet been included in the mainstream despite different legislations.

The ITIs form the main backbone of technical training in the country and it seeks to improve the conditions of the poor and vulnerable groups. Therefore, if impacts are not well-managed it is possible that vulnerable groups could be negatively impacted.

[17] Social, Economic and Educational Status of Muslim Community of India, Government of India (Sachchar Committee) Committee Report, 2006

The investments under the programme are targeted to select ITIs in the states keeping in mind certain performance based criteria in terms of outcome. Hence it is important to address the issue of indigenous people and inclusion at the time of preparing the criteria for selection of the ITIs for the program. Attempt should also be made to address the issue of gender in the ITI level as well as in the industry for apprenticeship.

Strengths

Certain affirmative actions have been used as a strategy by Government of India for inclusion of women SCs and STs in education and training institutes. These are in form of reservation of seats in these institutes and providing a small stipend to them. The ITIs also certain percentage of seats reserved for women SCs and STs. This percentage varies from state to state given the percentage of SC and ST population in the state.

Apart from ITIs reservation of seats, there are special ITIs for women and STs. These expect to provide dedicates space for training for students who have difficulty in attending regular ITIs due to economic and social exclusion.

Further, the World Bank supported VTIP Project had shown some positive impact on gender relations and examples of women taking up nontraditional trades[18] if there is an enabling environment. Several legislative measures are also in place providing for grievance redress processes and inclusion of women in the labour force.

Some states have interesting initiatives to include vulnerable population like tribals. Maharashtra, in partnership with the Department of Tribal Affairs ITIs are opened in Ashram Schools which are residential schools for tribals. This is an interesting strategy for inclusion. Similarly, the *Lok Seva Kendras* in Maharashtra provides an opportunity for "learning by doing" in remote tribal areas where there is less industrialization and opportunities for apprenticeship is limited.

Gaps and Risks

It was generally seen that ITIs in the remote areas especially the tribal areas lack infrastructural facility to provide quality training to the tribal youth.

The stipend that is provided for SCs and STs is too small. Moreover since the amount is only disbursed once in six months, it becomes extremely difficult for poor students to commute to the ITIs if they are located at a distance.

Lack of hostel facilities for women and lack of transport specially discourages women to take up courses in the ITIs.

ITIs only cater to some basic engineering trades like Fitter, Turner, Machinist, etc. This marginalizes women as they are not interested in taking up such trades which traditionally

[18] What will Enable More Girls to Become Technicians?, A World Bank Study 2014.

belong to men. Moreover, women prefer to work from home than going to factories. Thus ITI training does not appear to be attractive to women.

The ITI does not provide a conducive infrastructure and environment for the girls as most of them lack hygienic sanitation facilities, hostel accommodation, women instructors and any grievance redressing system especially on issues of sexual harassment. These marginalize them further making the ITI one of the last options for girls after completing school.

Large vacancy in the Directorate has led to ignoring monitoring of social issues. Moreover, there is almost 50% vacancy for instructors. This has a negative impact on the quality of training. In the remote areas, the absence of instructors is even more acute.

The apprenticeship system is used is used as a channel to get cheap labor by the industry and there is no commitment from the employer or any liability in terms of insurance and accident coverage. Women face further marginalization in apprenticeship training as women are not encouraged by the industry as apprentices.

Core Principle 6

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 India, commonly known as Left wing Extremism (LWE) areas. However, the program will not result in exacerbating conflicts. Rather, special interventions will be planned for developing appropriate skills in such areas, thus contributing towards harmonious development. LWE areas characteristically suffer from inaccessibility (remote area due to forests, rugged mountains, inhospitable mountains, extreme climate) making the region rather excluded, but are beset with the strength of separate social identity of its population (predominantly inhabited by tribals). Inaccessibility of an area inhibits economic development and causes a sense of relative deprivation among the population. At the same time, large scale migration from these areas is impeded by the people's attachment to their ancestral lands, thereby insulating the area from social transformation. Due to lack of the state's penetration into these inaccessible areas, the population develops a strong sense of social/ cultural identity. This in turn is very helpful to the insurgents as it provides them an opportunity to attract the target population by providing higher social control. Left Wing Extremism areas in India include about 100 districts spread across 10 states – Andhra Pradesh, Telangana, Bihar, Chattisgarh, Maharashtra, Jharkhand, Odisha, Madhya Pradesh, Uttar Pradesh and West Bengal. The List of districts in affected by LWE are given in Annexure 4.

In order to holistically address the LWE problem in an effective manner, Government has formulated National Policy and Action Plan adopting four pronged strategy in the areas of security, development, ensuring rights & entitlement of local communities and management of public perception. The focus of the Government currently is to address security, development

and governance deficits in 106 LWE districts. Of these, higher focus is on 35 severely affected LWE districts spread in 7 States. Major areas of development intervention are in the spheres of: security related infrastructure, road connectivity including bridges, GIS mapping, school, post offices, health facilities, mobile towers, PDS services and other security related activities. Two important skill training programme are targeted specifically to the LWE areas. One is a Scheme under DGT which is to set up Skill Development Centres in the ITIs of these areas and other is a short term training programme called Roshni under Ministry of Rural Development.

Strengths

The DGT has a special program of funding LWE area. The Scheme attempts increase of access of skill training for employment for the youth of these areas. The scheme was formulated in 2011 to create Skill Development infrastructure in 35 districts closer to the people of left wing extremism (LWE) affected districts. The objective of the scheme is to establish one ITI and two Skill Development Centers (SDCs) in each of 35 districts and to run demand driven vocational training courses both long term and short term to meet the requirement of skilled manpower of various sectors of economy in and around these areas, on the one hand and on the other, provide youth opportunities of decent livelihood.

Of the LWE states, Chhatisgarh has enacted legislation, providing for Right to Skill Training as an Act. The right entails any person between the ages of 15 to 45 years who demands for a training in skill development would be provided the same by the State government within 90 days. If a skill provider is situated outside the district, then the district authority has to provide residential facility to the youth. This right has implications for a state like Chhatisgarh which has about seven districts affected by left wing extremism. Therefore, it would be beneficial for STRIVE to dovetail its investments with these initiatives of the central and state government.

Gaps and Risks

The ITIs in the LWE areas are normally low performing with very poor employment outcomes. Hence ITIs from these areas may be left out from the scope of this program, thus creating further exclusion and increasing social conflict. So, separate criteria should be developed for ensuring inclusion of ITI s in LWE districts.

9. Consultation and Disclosure

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

9.1 Consultation and Disclosure relating to the ESSA

9.1.1 Consultation during the ESSA

The process of development of the ESSA included multiple consultations: formal and non-formal (structured workshops, small group discussions, individual meetings), and at various levels

(national, state, district). The list of consultations is provided in Annex II. The multiple stakeholders consulted include the following:

- MSDE and its associate agencies: Consultations were primarily through meetings during the program preparation missions, but also through follow-on focused meetings.
- Directorate General of Training: who shoulders responsibility for managing all the ITI s throughout the country.
- State Departments and State Skill Development Missions: Consultations were through individual meetings with the bureaucrats holding key leadership positions in the SSDMs (for example, the Secretaries of the parent Department and the Directors of the SSDMs) and through small group/individual meetings with the key staff of the SSDMs.
- Allied Government Departments: Consultations were held with the relevant Government departments (e.g., the Public Works Department, SC & ST Welfare Department, etc.) through their participation in state level consultation workshops as well as through individual meetings.
- Training Providers and Trainees: Consultations were held with over 21 ITI s- training providers through- consultation workshops and/or meetings at the ITI s. Discussions were also held with trainees at the training centers visited.

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

9.1.2 Consultation on the Draft ESSA

A national consultation workshop and a regional consultation workshop was organized to share the findings of the ESSA with the key stakeholders and to invite suggestions on the recommendations. The stakeholders included the key national agencies, the training providers, related national and state government departments, industry representatives, and development partners.

9.1.3 Disclosure of Final ESSA Reports

The draft ESSA was disclosed on World Bank InfoShop and on the MSDE website prior to the consultation. Subsequently a consultation workshop shared the findings and invited feedback from a larger audience including ministry & state officials; government & private ITIs; industry & industry associations; as well as a development agency The final ESSA is also disclosed on the World Bank InfoShop and on the MSDE website.

A complete list of participants for the consultative workshop is presented in annex 13.

9.2 Arrangements for Consultation, Disclosure and Grievance Redress relating to Program Activities during implementation

9.2.1 Consultation and Disclosure Processes.

Consultations and disclosures will continue throughout the implementation phase. Essentially, DGT will hold bi annual consultations with the state departments on overall planning and progress review if required. State departments, in turn, will hold quarterly meetings with ITI s and discuss: choice of programs, strategy, number of programs to be conducted, place, nature and extent of mobilization and counselling as well as the difficulties and deficiencies if required. ITI s, in turn will consult the local level stakeholders to ascertain their expectations and the issues and concerns thereof. Progress reports will be disclosed on a quarterly basis through websites of MSDE and the associated institutions. Protocols for the conduction of TP level meetings and reporting will be developed during implementation.

9.3 Grievance Redressal System

A credible Grievance Redress System is essential to promote transparency and accountability in the system. Two ways in which Government of India promotes transparency and accountability in its operations:

- Right to Information (RTI)
- Grievance Redress System (GRM)

The existing institutional arrangements provide good underpinnings for improving transparency and accountability of the Program. At the Ministry level, the Chief Vigilance Officer who reports to the Secretary, MSDE is responsible for the vigilance function together with the Grievance Officer. In general, the vigilance function of line departments is fulfilled by a chief vigilance officer at the state level and vigilance Committees are also established at the Block, District and GP levels with various degrees of effectiveness. Modus Operandii in respect of RTI and GRM are described below.

Right to Information (RTI)
The declaration of Right To Information Act (2005) set the stage for the transparency in the functioning of the government and its various agencies. Under this Act, access to information from a public agency has become a statutory right of every citizen. This Act attempts to provide access to information to ordinary people do not have much information about how decisions are made and how public resources are utilized. In MSDE and DGT, there is a to file RTI applications/first appeals online along with payment gateway. For speedy disposal of RTI cases a list of officers and appellate authority subject wise is given in the portal. The State governments also have their own RTI system where one person in the department is designated as the point person to answer any questions that come through RTI. At the ITI level normally one person (usually the principal) is designated to deal with all quarries under RTI.

DGT has proactively made a lot of information on its Schemes and funding public on its website for greater transparency. One Public Information Officer is appointed to answer RTI related questions. The states have also tried to make the system transparent by having a section on RTI on the state website. Information about ITIs and Schemes are also posted on the website which is updated from time to time. Apart from that each State Directorate has a designated point

person to answer to RTI quarries about ITIs relating to the Schemes, courses, opportunities etc. At the ITI level the implementation mechanism of RTI is not uniform. The larger ITIs located in the urban areas receive more RTI quarries than the ones located in remote areas. Hence in larger ITIs the system is more transparent with one person (usually the principal) who is in charge of answering all the questions. In these ITIs records are also properly maintained. However, smaller ITIs do not have any system for RTI and they hardly get any RTI quarries.

Grievance Redress System

Grievance Redress in any institution is important as it gives transparency to the system and makes it accountable. For the purpose of STRIVE, system grievance redressal at four levels:

- National
- State
- ITI and
- Industry

There exists currently an effective system to address and manage complaints, at the national level which allows for the identification and tracking of Program related complaints. As per Government of India Guidelines all grievances received from the public as well as employees are required to be redressed by the Ministry / Department / Organization concerned arising from the work of Ministries / Departments / Organizations in Government of India. The Guideline further mandates that a person of a rank of Joint Secretary should head the grievance redress system at the Ministry. At the national level grievances can be raised by State DETs, ITIs and individual students. The grievances raised by the states usually include project related issues like delays in disbursement of funds etc. Some issues are also faced at the ITI level like non receipt of admit cards of students before examinations etc.

National

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States

As per Government norms all states have institutional mechanisms for grievance redress. At the state level it is normally a person of a rank of a Director who deals with these issues. ITIs, Principals, Instructors, Students can raise grievances at the state level.

The issues raised by ITIs are mainly operational around fund constraints, lack of instructors etc. Issues raised by ITI principals and instructors are mainly on postings, transfers and other personnel related issues. Records are maintained at the state level in files on these issues together with the noting on action taken.

ITI level

ITI Guidelines lays down elaborate guidelines on who can form a grievance redress committee and the entire redressal mechanism. It lays down clearly that a complaint has to come in a written form and proper register should be maintained for all complaints. Each complaint would be looked into first by the instructor and then, if not satisfied, taken up to the principal.

The assessment pointed out that at the ITI level the grievance redress process that is practiced is rather inadequate. If any student has any complaint, the first point of appeal is the instructor. These complaints are generally verbal with no written documentation on the complaints. If the instructor is not able to solve a problem he/she brings it up to the principal and not the aggrieved party.

Since raising of grievance means bringing it up to the instructor directly, seldom any grievance is raised because the students are inhibited to bring it up to their instructor or principal.

Committee Against Sexual Harassment in line with the Visakha Guidelines of the Supreme Court, is either absent or dormant in most ITIs. During our interaction with the ITIs it was pointed out that such incidents "do not occur" within the ITI and it has never come forward. If it ever does, then a Committee for sexual harassment will be formed. One ITI in Uttarakhand reported a case of sexual harassment which was dealt by the faculty. ITI Karnal has a Committee Against Sexual Harassment and the names of the members of the Committee are displayed on the wall.

Industry Level

At the industry the process of grievance redress for the apprentices is as per the system in the particular company. Thus bigger companies with a structure has provisions for grievance redress whereas smaller enterprises hardly has that facility. Thus it was seen that the apprentices did not have any insurance of social protection cover while they are serving as apprentices and there are no points of appeal for them. Thus grievance redress depended on the individual initiative of the human resource (HR) person in the industry.

The program recognizes that: grievances in the tribal and conflict areas could be quite different from that of the other areas; and that, it may not be possible for the people in these areas to air their grievances freely. So, special efforts will be made as a part of the Institutional Development Plan (ISP) each ITI is expected to develop.

10. Recommendation and Action Plan

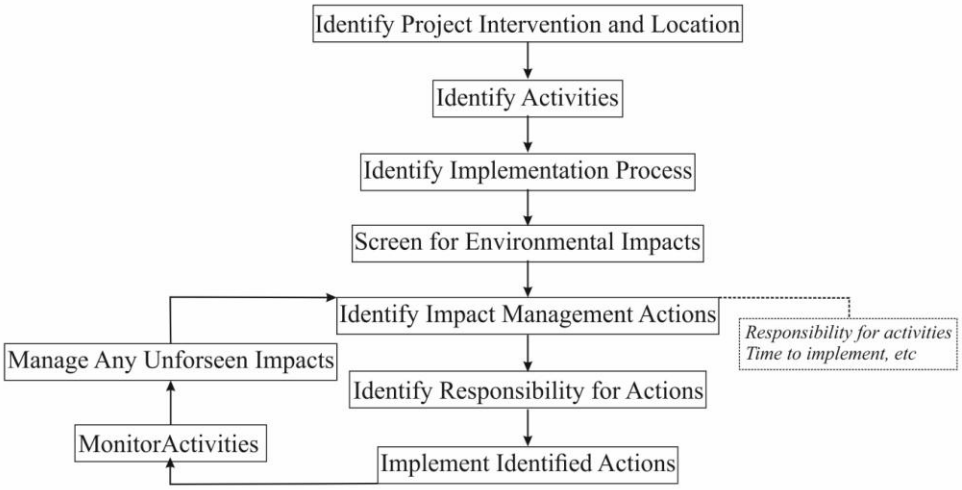
10.1 Environment

The activities under this program are expected to have low to moderate environmental impacts, with most of these impacts localized to the ITIs. Overall the management of the system and individual ITIs, is dependent on those in-charge and their interest and desire to be proactive. Some ITIs, have undertaken a number of good initiatives such as solar power generation, water

recycling and trying to construct green buildings. Nonetheless, there are possibilities for improving processes and systems to create a greater positive impact through the running of ITIs.

To ensure compliance to required environmental standards, there is a need to identify a standard process that may be used, regardless of capacity and interest of individual ITI staff members and principals. Such a process is suggested in the Fig alongside. This process includes the use of a screening matrix to help identify impacts, and is available in Annex 8.

Fig: Environment Management Process



Apart from screening and identification of impacts, there are number of areas that need to be addressed to further improve environmental management in ITIs. Key areas to be addressed are discussed here, along with possible actions to support implementation.

Key Area: Institutional System
Issues: ITIs have a well-defined institutional management structure, and also have a monitoring system in place; and is mainly geared towards to the everyday running of the institutes. At the State and National level there are also well developed environmental management institutional systems. Therefore, there are systems that can be used to manage required environment issues at the individual institute and state and national levels. Nonetheless, there are areas for further improvement and are discussed here. • Presently, environmental management is not comprehensively addressed, and is dependent on individual efforts, resulting in environmental concerns not well addressed. Monitoring of environment parameters at the state and national level too is presently limited, and only on a few waste management concerns. Therefore, a robust monitoring system and management that includes key environment issues needs to be in place. • Quality of apprenticeship is dependent upon individual industrial standards. While large industries responsive to their customers may have well developed apprenticeship systems that includes OHS and a comprehensive waste management system, smaller industries may not have similar systems. Therefore, a robust system that addresses waste and OHS as a part of the overall apprenticeship system may be considered.
Key Area: Infrastructure and management and system developed, water supply, sanitation and drainage

Issues: Basic infrastructure is available at most ITIs, with water supply assured at most institutes; with some even undertaking water harvesting to supplement their supply. ITIs also have sanitation infrastructure available. However, these and other infrastructure needs to be further enhanced to improve the learning environment.

- Disaster and accident preparedness; through the use of alarms, fire extinguishers, escape passages and other systems, is presently limited in ITIs. There is a need to identify safety needs for each ITI and create required infrastructure to ensure safety of all present at the it is, including clear labeling and access to escape routes.
- Water supply, sanitation and drainage require more focused attention at all ITIs. While, as mentioned water is usually available at ITIs, supplementing water sources, especially where there are water shortages should consider water harvesting and water efficiency and recycling where feasible.
- Maintenance of toilets and availability of adequate toilet facilities for all students is required, especially for girls. All toilets must have running water and for girls they should also washing spaces in case required after practical classes. Similarly, appropriate water supply and sanitation infrastructure will also need to be ensured for both male and female apprentices at their place of training.
- Drainage at ITIs would also need more attention. This should include waste from toilets, drinking water coolers, workshops and overall campus drainage. Similarly, areas for storage of solid and liquid waste, prior to its disposal should be clearly identified for ITIs, and should be both secure from spillage and pollution, and have restricted access to ensure safety.
- Standard designs are used for development of infrastructure, however based on local needs, workshop activities and student needs designs could be modified to ensure handicapped access, safety and also clean and green environments. Annex 8 and 11 provide some guidance on green buildings and sustainable landscapes.

Key Area: Safety and Learning

Issues: Considering the ITI education imparts education on many mechanical courses, a basic module on safety exists. A number of workshops visited also had, though often in limited numbers, safety gear to use during practicals. Further improvements on issues of safety can be considered and are discussed here.

- Construction site management needs to be enhanced. All construction sites need to be properly managed, to minimize the possibility of accidents, and for required labor safety equipment. Waste from construction activities needs to be properly stored prior to disposal to minimize any risk to those on the campus. Construction worker safety and construction site management needs to be improved. All construction sites and labor camps should follow existing safety and construction site related regulations, ensure labor has required safety gear and facilities like toilets are available.
- Modules to create awareness on safety of individual mechanical courses are taught at the beginning of the first semester, but overall understanding of OHS is still limited, and requires further reinforcement. Also, as a part workshop activities course gear and safety equipment to ensure all students and staff can follow safe working practices need to be regularly checked to ensure that they are in order, sufficient quantity and quality and being used. This will also help address a concern identified by some industries, such as Dr. Reddy's who found ITI graduates with inadequate knowledge on safety and following risky behavior. In order to make the students industry ready, reduce the

chances of accidents and create safer work spaces appreciation courses on OHS could help improve understanding among students. Some suggestions to this affect are given in Annex 9 Further trade specific additions and other concerns identified could be added to this to develop a comprehensive OHS understanding for students. Similarly, staff training on OHS and disaster management and emergency handling would also help improve the safety standards in the ITIs.

- Safety at industries are dependent upon individual industry systems. Therefore, while in many and often larger industries, apprentices learn about and practice good safety practices, this is not the case for all apprenticeships. Therefore, basic standards for all apprentices may support ensure a base level safety standard at all industries participating in the apprenticeship program.
- Awareness on existing environment related legislation is limited, both at the state and at the ITI level. The result is regulations are presently not being adequately followed, such as batteries and e-waste regulations. Therefore, awareness on required environment regulations can be enhanced.

Key Area: Waste and material management, hazardous waste

Issues: As a part of the teaching requirements at ITIs, material procurement and the disposal of waste is regular activity. The ITIs and their corresponding State Directorates have material procurement and waste management systems identified.

- While waste management systems exist, they are generally very basic in ITIs, resulting in inadequate management of waste and compliance to existing waste related regulations. The state Directorates therefore should design a waste management system that address waste, pollution and creates healthier campuses; and ensures compliance to existing regulations. Also, waste minimization can be considered as a part of waste management.
- In case of hazardous waste and materials, such as batteries and cleaning agents with acid, separate collection and disposal systems should be developed, adhering to existing legislation on hazardous waste must also be consulted to identify what is considered hazardous waste. This will ensure reduced risks of pollution and injury.
- While some ITIs have well developed material and safety gear storage systems in place, such systems should be extended to all ITIs, to ensure workplace safety and a safe study environment.
- Construction waste management also need to be enhanced, and ITIs should ensure all constructions follow government guidelines and legislation. Construction site and waste management plan should be developed for any construction activity undertaken in an ITI.
- Asbestos should not be used as building material as it is carcinogenic in nature. Where asbestos already exists and may require to be handled, such as in old building roofs under renovation, its handling and disposal should be according to Government of India norms.
- Please see annex 10 on solid and liquid waste management for suggestions.

To ensure a basic understanding of safety and ensure appropriate implementation of material, waste and other required environmental standards and adherence to existing legal environmental framework, suggested program actions are given below.

Action	Timeline	Responsibility	Completion measurement
Environmental management systems in place and functioning in ITIs	Starting within 6 months of program start, and continue through program duration	State level Directorate, ITIs	Trained ITI nodal environment staff in place and required environment legislations followed and waste management and safety systems functional, including construction management. Required water supply, sanitation and drainage systems in place and functional, including handicapped friendly access As required, water harvesting and conservation and water saving systems in place. All ITIs to have basic safety equipment like fire extinguishers and alarms, in working order, and appropriate signage for escape routes. A nodal person from ITI staff trained to manage in case of an accident or disaster.
Students aware of and practice good safety norms in ITI	Start with first semester of each course, and repeated 6 monthly appreciation course.	State level Directorate, ITIs	Students use safety gear in workshop, and have been clearly articulate OHS measures and use required measures in their day-to-day working. . Overall safe study and work environment exists at ITI.
Apprenticeship enforce good OHS and waste management standards	Beginning of apprenticeship and repeat every 6 months	Industry clusters	Apprentices articulate good OHS measures and practice it. Proper waste management systems in place and functional, in smaller industries, in case not already there.

10.2 Social

The ESSA throws up a number of issues which have a bearing on the functioning and performance of ITIs as well as apprenticeship programs in India. Some relates to inadequacies inherent in the institution (ITI) such as poor infrastructure, non-availability of instructors, quality of the temporary staff, whereas others relate to the socio economic and cultural system as a whole, all of which renders ensuring ‘inclusion’ and ‘equity’ a challenge. Key recommendations to this effect include the following:

1. **Market Scoping**. A fixed / regular menu of trade options decided from above would not suffice. Location specific market scoping as part of the developing the ISP should be undertaken to unearth the skill requirements corresponding to local priorities as well as employment potential within and outside the country.
2. **Institutional Development**. Staffing and other equipment as well as consumables and infrastructure are essential. Corresponding to the trades chosen, full time regular qualified and trained staff should be available in requisite number in each of the institution. Institutional Management Committee (IMCs) are to be revisited and formed anew/ afresh and made fully functional with an explicitly drawn mandate and a set of powers.
3. **Strategy for Inclusion as part of ISP**. As a part of the overall Institutional Development Plan, institutions should detail out the strategy for conduction of market scoping, institutional strengthening, outreach, quality maintenance and upgrading, concurrent monitoring and mentoring including psycho-social counselling, training of trainers etc., linkage with industries for placement and roping them as resource persons/ agencies and post passing out tracking. ISPs should specify the incremental increase in enrollment and passing out, the institute would achieved in respect of SC/ STs, Women, OBCs, Differently abled and other Minorities. Arrangements should be made for creation of and continuous updating of disaggregated data on these lines. Means as well as resources required to achieve these self-driven targets also should find a place in this plan.
4. **Outreach strategies.** At present very few ITIs make special efforts to reach out to the community as a result people who know about the course through friends and relatives enroll for the same. It is suggested that a more creative mobilization strategy should be designed which will enable the community to understand the courses offered and future career progression. This could include convening local political and other leaders as well as prospective students' parents to the institute and give them a detailed tour. This meeting can also have participation by the local industries, and other business houses/ associations.
   - **4.1** In the fifth schedule areas, UMP should be preceded by consultations with tribal leaders at village as well as district levels and other agencies as well as departments. Bi-annual monitoring through local participation (tribal leaders and parents) is also recommended. Residential hostel facilities would boost, especially, women participation in the Fifth Schedule Areas.
   - **4.2** In the Sixth Schedule areas, apart from the tribal leaders and government agencies, consultations should be held with Autonomous District Councils (ADC).
5. **Women Participation.** Women normally are offered courses like cutting-sewing etc. which has limited little relevance in the labor market. So, encouraging it is, as a part of their IDP, to launch new market oriented courses will go a long way to promote women development. The state may consider reimbursing transport charges for all women candidates. All Program ITIs should have separate toilets for women with water connection.
6. **Introduction of Vishaka Guidelines.** As per law all ITIs should have a committee against sexual harassment. This is not presently followed. The program should facilitate this.

7. **Stipends**. Different departments of the government offer stipends for women, SCs and STs and Minorities. The stipends for SC, ST and Minorities, are quite low and disbursements are not on time. State may plan how to facilitate and ensure disbursements in time.
8. **Left Wing Extreme Areas**. Institutional Development Planning is critical to the success of skill development in these areas. Two pronged interventions are recommended: one, providing external help for the development of institutional plan; and two, reviewing of these plan by an expert committee towards ensuring that courses offered are purposeful, and that infrastructural facilities as well as trainers are adequate and appropriate.
9. **Apprenticeships.** The host industries perceive the ITI trainees in an altogether rather negative way. Questions are raised about their attitude, discipline, work ethics etc., So, ITI during training should plan for special efforts at organizing corporate counselling and prepare the students for their next phase of life.

14. Action Plan

Action	Who will do	Time line	Completion Measurement
Inclusion. All ISPs to include a plan for inclusion of vulnerable groups.	ITI, State Directorates and and DGT	As part of Performance-Based Grant Agreements to be signed with ITIs	ISP prepared at ITI level with strategies laid down for enhancing inclusion, mobilization, placement and apprenticeship opportunities for women, SC , ST, Minorities, Differently Abled Persons.
Conflict. LWE areas. Provide External Help for developing Institutional Strategic Plan (ISP); and review by an expert committee	DGT	Within a year of effectiveness	Skill development program initiated as per the ISP.
Functional MIS. Setup and compile with continuous updating of disaggregated data pertaining to SC, ST, OBCs, Women, Minorities and PwD.	State Directorates and DGT	Ongoing	ToR for tracer studies to include requirement for disaggregation of data pertaining to SCs, STs, OBCs, women, minorities and persons with disabilities.

Annexure

Annexure 1

List of ITIs visited

Name of the ITI	State	Criteria which it fulfills
Women's ITI Guwahati	Assam	• Women's ITI • Located in the urban area • North East India
Govt. ITI Guwahati	Assam	• Urban ITI • CoE • North East India
Govt. ITI Nalbari	Assam	• Semi urban ITI • Small ITI • PPP • North East India • Vulnerable to disasters
Govt. ITI Naugaon	Assam	• CoE • North East India • Vulnerable to disasters
Pvt. ITI Ajmal Rural Technology and Demonstration Centre	Assam	• Private ITI • North East India
Vocational Rehabilitation Centre for PWD	Assam	• Institute for Physically handicapped • North East India
Govt. ITI Mumbai	Maharashtra	• ITI located in the urban area • Western India
Govt. ITI for Minorities, Mumbai	Maharashtra	• ITI for Minorities • Western India
Govt. ITI, Ratnagiri	Maharashtra	• PPP • CoE • Coastal area • Western India
Govt. ITI, Malad	Maharashtra	• CoE • Chemicals • Western India

		• Vulnerable to Disasters
Tribal ITI for Girls, Kamacheru	Maharashtra	• Girls ITI • LWE Area in Ghadchiroli • Western India
Tribal ITI, Gondpipri	Maharashtra	• Tribal ITI • Western India
Govt. ITI Pandakawda	Maharashtra	• Tribal ITI • CoE • Textiles • Western India
Govt. ITI, Nizamabad for girls	Telangana	• Women's ITI in a Minority Area • South India
Govt. ITI for Minorities, Bodhan	Telangana	• Minorities • Rural ITI • South India
Govt. ITI Mallapally	Telangana	• CoE • ITI located in urban area • South India
TSSDS ITI Tamar	Jharkhand	• ITI was PPP run by TATA, now a private ITI, run by the TATA Steel Skills Development Society • Eastern India • Rural ITI • LWE affected area
Govt. ITI Garwah	Jharkhand	• ITI in a remote area • Rural ITI • LWE affected area • Eastern India
Tribal ITI	Jharkhand	• Private ITI, run by Tribal Welfare Society • Radiology courses • Rural ITI • Eastern ITI
Government ITI, Roshnabad,	Uttarakhand	• PPP

Haridwar		• ITI in the foothills
Government ITI, Vikasnagar	Uttarakhand	• Hilly area • Rural ITI • Northern India
Government ITI, Dehradun	Uttarakhand	• Urban ITI • Mixed population • Northern India
Govt. ITI Women, Dehradun	Uttarakhand	• Women ITI • Urban area • Northern India

Annexure 2

List of People Met

Categories	Name	Designation
Officials at National Level		
	Mr. R.P. Dhingra,	Director Training, DGT
	Mr. Lahiri,	Director Apprenticeship Training, DGT
	Ms. Upma Bhatia,	Director Women's Training, DGT
	Ms. Alka Sharma,	Jt. Director, NVTI, NOIDA
Officials at State Level		
Assam	Mr. A. K. Sahariya	Director, Employment and Training
	Ms. Mousumi Sen,	Joint Director, Training
	Mr. Batthakur,	Assistant Director Training
	Mr. Kajal Kumar Saha	Project Manager, Tool Room and Training Centre, Guwahati
Maharashtra	Mr. Dayanand Maheshwaran	Director, Education and Training
	Mr. Vijay Mahajan	Deputy Director, Training
	Mr. Yate	Joint Director, Amaravati Region
	Mr. Suryavanshi	Joint Director, Nagpur Region
	Mr. Nilay Hande	Deputy Regional Director,
	Mr. Nitin Junonkar	Dist. Vocational Education and Training Officer, Chandrapur
Telangana	Mr. Naik	Director, Employment and Training
	Mr. S.K.V Nagesh	Jt. Director, Training
	Mr. Raja	Assistant Director, Training
	Mr. T.L.V.N Rao	Director, ATI, Hyderabad
	Mr. J.D. Masilamani	Joint Director, ATI, Hyderabad
	Mr. S. Suryanarayana	Joint Director, ATI Hyderabad
	Mr. Vidyanand	Deputy Director, ATI, Hyderabad
	Mr. M.R. Gajre	Regional Director, RDAT, Hyderabad
Jharkhand	Rakesh Kumar Singh	Special Secretary, Department of Labour, Employment, Training and Skill Development Director, Employment and Training, Employee State Insurance Scheme, Rachi
	Budh Deo Thakur	Join Director, Labour Employment and training Department, Rachi
	Anju Agarwal	Additional Director, Labour Employment and training Department, Rachi

Uttarakhand		
Principals and Faculty of ITIs		
Assam	Mr. Krishna Bania	Govt. Women ITI Guwahati
	Mr. N.H. Majumdar	Govt. ITI Guwahati
	Mr. Dipu Dutta	Govt. ITI Nalbari
	Mr. P.K. Das	Govt. ITI Naugaon
	Mr. Musharrif Hussain	Private ITI, Naugaon
	Ms. Debasree Bhattacharya	VRTI, Guwahati
Maharashtra	Mr. Lone	Tribal Ashram School ITI, Khamenchuru
	Mr. Sushil Bujde	Govt. ITI, Gondpipri
	Mr. Sanjay Taywande	Govt. ITI Pandagauda
		Govt. Women's ITI Nizamabad
		Govt. Minorities' ITI Bodhan
	Mr. S. Raja	Govt. ITI Mallapally
	A R Sable	Vice Principal and I/C Principal, Govermetn ITI, RAtnagiri
	G J Shivkal	Principal, Government ITI Mahad
Jharkhand	Mr. Rashid	Government ITI, Rachi + 7 more
	Mr. S P Sharma	Principal TSSDS Private ITI, Tamar
	Sumit Sarkar	Placement Officer, TSSDS Private ITI, Tamar
	Brijmohan Ram	Teacher and acting principal, ITI Garwah
	Hermon Thithio	Teacher, ITI Garwah
	Vikrant Kumar Singh	Teacherl, ITI Garwah
	Kaushal Kishor	
Students Met		
Assam	Geeta Chhetri	
	Jyoti Shah	
Maharashtra	Sarita	
	Sumita Namdev	
	Ashwin	
	Vanmala	
	Reshma	
Apprentices from ITIs		
Maharashtra		
	Suhel Shautak Vahoo	Finolex Pipes, Ratnigari
	Chandan Ravindra Bushankar	Finolex Pipes, Ratnigari
	Dattaprasad Shrikunt Kamat	Finolex Pipes, Ratnigari
	Rohan Namdevc Surve	Finolex Pipes, Ratnigari

People met in Industries for Apprenticeship		
Name of the Industry	**Name of the Person**	**Designation**
Indian Oil Corporation, Guwahati	Mr. J. Barpujari	Executive Director
	Mr. S. Chakrabarty	Chief Human Resource Manager
Emami Industries, Guwahati	Mr. Deb Kumar Nandy	General Manager, Operations
Mahindra and Mahindra, Nagpur	Mr. Suresh Pandilwar	Manager, ER and D
3Raymond UCO Denim Pvt. Ltd. Yavatmal	Mr. Nitin Srivastava	Works Director
	Mr. Prashant Dighe	Head HR
Bajaj Steel Industries, Nagpur	Mr. Anup Kubde	HR Head
Sagar Automobiles, Nagpur	Mr. Parag Sagar	Owner
Raddison Blu, Nagpur	Mr. Rakesh Sharma	Training Manager
Rane Engine Valve Ltd, Hyderabad	Mr. G. Rangnath	Head Operations
	Mr. S. Baskaran	Asst. Manager HR
Dr. Reddy's Lab, Hyderabad	Mr. G. Muralikrishna	Director Human Resources
	Mr. Bhaskar Sivva	Manager, Facility Management
Finolex Pipes, Ratnigari	T K Kakade	General Manager, HRD and Factory Maneger
Finolex Pipes, Ratnigari	Sagar J Chivate	Manager, Administration and Industrial Relations

Annexure 3

List of Schedule Areas

Fifth Schedule

State	Areas
Andhra Pradesh	Vishakapatanam, East Godavari, West Godavari, Adilabad,Srikakulam, Vizianagaram, Mahboobnagar, Prakasam (only some mandals are scheduled mandals)
Jharkhand	Dumka, Godda, Devgarh, Sahabgunj, Pakur, Ranchi, Singhbhum (East&West), Gumla, Simdega, Lohardaga, Palamu, Garwa, (some districts are only partly tribal blocks)
Chattisgarh	Sarbhuja, Bastar, Raigad, Raipur, Rajnandgaon, Durg, Bilaspur, Sehdol, Chindwada, Kanker
Himachal Pradesh	Lahaul and Spiti districts, Kinnaur, Pangi tehsil and Bharmour sub-tehsil in Chamba district
Madhya Pradesh	Jhabua, Mandla, Dhar, Khargone, East Nimar (khandwa), Sailana tehsil in Ratlam district, Betul, Seoni, Balaghat, Morena
Gujarat	Surat, Bharauch, Dangs, Valsad, Panchmahl, Sadodara, Sabarkanta (partsof these districts only)
Maharashtra	Thane, Nasik, Dhule, Ahmednagar, Pune, Nanded, Amravati, Yavatmal, Gadchiroli, Chandrapur (parts of these districts only)
Odisha	Mayurbhanj, Sundargarh, Koraput (fully scheduled area in these threedistricts), Raigada, Keonjhar, Sambalpur, Boudhkondmals, Ganjam, Kalahandi, Bolangir, Balasor (parts of these districts only)
Rajasthan	Banswara, Dungarpur (fully tribal districts), Udaipur, Chittaurgarh, Siroi (partly tribal areas)

Sixth Schedule

State	Schedule Areas
Assam	Bodoland Territorial Council
	Karbi Anglong Autonomous Council
	Dima Hasao Autonomous District Council
Meghalaya	Garo Hills Autonomous District Council
	Jaintia Hills Autonomous District Council
	Khasi Hills Autonomous District Council
Tripura	Tripura Tribal Areas Autonomous District Council
Mizoram	Chakma Autonomous District Council
	Lai Autonomous District Council
	Mara Autonomous District Council

Annexure 4

List of Left Wing Affected Districts

State	District
Andhra Pradesh	1. Anantapur 2. East Godavari 3. Guntur 4. Kurnool 5. Prakasam 6. Srikakulam 7. Visakhapatnam 8. Vizianagaram
Telangana	9. Adilabad 10. Karimnagar 11. Khammam 12. Medak 13. Mehboobnagar 14. Nalgonda 15. Warangal 16. Nizamabad
Bihar	17. Arwal 18. Aurangabad 19. Bhojpur 20. East Champaran 21. Gaya 22. Jamui 23. Jehanabad 24. Kaimur 25. Munger 26. Nalanda 27. Nawada 28. Patna 29. Rohtas 30. Sitamarhi 31. West Champaran 32. Muzaffarpur 33. Sheohar 34. Vaishali 35. Banka 36. Lakhisarai 37. Begusarai 38. Khagaria

Chattisgarh	39. Bastar 40. Bijapur 41. Dantewada 42. Jashpur 43. Kanker 44. Korea (Baikunthpur) 45. Narayanpur 46. Rajnandgaon 47. Sarguja 48. Dhamtari 49. Mahasamund 50. Gariyaband 51. Balod 52. Sukma 53. Kondagaon 54. Balrampur
Jharkhand	55. Bokaro 56. Chatra 57. Dhanbad 58. East Singhbhum 59. Garhwa 60. Giridih 61. Gumla 62. Hazaribagh 63. Koderma 64. Latehar 65. Lohardagga 66. Palamu 67. Ranchi 68. Simdega 69. Saraikela-Kharaswan 70. West Singhbhum 71. Khunti 72. Ramgarh 73. Dumka 74. Deoghar 75. Pakur
Madhya Pradesh	Balaghat
Maharashtra	77. Chandrapur 78. Gadchiroli 79. Gondia 80. Aheri
Odisha	81. Gajapati

	82. Ganjam 83. Keonjhar 84. Koraput 85. Malkangiri 86. Mayurbhanj 87. Navrangpur 88. Rayagada 89. Sambhalpur 90. Sundargarh 91. Nayagarh 92.Kandhamal 93.Deogarh 94.Jajpur 95.Dhenkanal 96. Kalahandi 97. Nuapada 98. Bargarh 99. Bolangir
Uttar Pradesh	100. Chandauli 101. Mirzapur 102. Sonebhadra
West Bengal	103**.** Bankura 104. West Midnapore 105. Purulia 106. Birbhumi

Annexure 5

Details of the ITIs visited

State	Name of the ITI	Details
Assam	Govt. Women's ITI Guwahati	The ITI has courses on Secretarial Practice, Basic Cosmetology, Electronic Mechanic and Draftsman Civil. Overall 80% placement. It has a MoU with Lakme on Beauty and Wellness course. The course where there is a tie up with Lakme placement is 100%. It has a small hostel with limited capacity given to students on first come first serve basis.
	Govt. ITI Guwahati	The ITI runs popular courses like Fitter, Turner, Mechanic, Electrician etc. Though 33% seats are reserved for women, these are not filled and then subsequently occupied by men. Women prefer to take trades like Cutting Sewing and Surface Ornamentation courses. Women are not encouraged to take courses which would give them jobs in the industry. The ITI does not have any elected committee for grievance redress. Even Committee Against Sexual Harassment is not there. They have a MoU with Hundai where the industry has renovated the workshop and has given equipment and study materials. There is also an understanding that students who pass out of this course would get a preference in recruitment. Overall placement in popular trades is about 90%. But placement of women is very low.
	Govt. ITI Nalbari	The ITI is on PPP. The IMC pays for the consumables used in the workshop. It is a very small ITI with only a few trades. It has a MoU with Toyota in which the industry supplies body parts and other equipment for the ITI. Placement rate is very poor (less than 50%).

	Govt. ITI Naugaon	This ITI had been funded under the World Bank VTIP Project. It has twelve trades and is one of the oldest ITIs in the state. Women normally do not take up any engineering trades. Presently only in trades like sewing and IT women are present. There is a small boys' hostel with about 50 seats. The hostel for girls exist but it is not functional. Average placement is about 60%. It has a MoU with Tata Motors which supplies equipment and machine parts to the ITI.
	Ajmal Rural Technology and Demonstration Centre	ITI run by a private Trust. It has about four engineering trades. Fees for the courses are very high (between Rs. 8000 to Rs. 25,000). But they guarantee placement in the Gulf. The faculty has industry training. It is fully residential with hostel facilities for all students. They do not take in women in the institute.
	Vocational Rehabilitation Centre for PWD	The institute is meant for People with Disabilities. It has five trades. Instructors not trained to teach students with special needs. They conduct job fairs where a number of companies participate but the overall placement is very low.
Maharashtra	Govt. ITI for Minorities, Mumbai	Location of the ITI is of great advantage. Girls are in large numbers in trades like COPA. Girls are also present in engineering trades like Electrician and Wireman. Being in Mumbai the placement rate is very high.
	Govt. ITI, Ratnagiri	Located in a coastal area, a large ITI it has made efforts to link to local industries such as Finolex, and therefore sends apprentices there regularly. Only some of the faculty have received any training in the recent years.
	Govt. ITI, Malad	Located on the edge of Maharashtra's industrial belt near the coast, there is an advantage for students for placements. However, for girls, who take up courses like chemical laboratory assistant, placement is still mainly limited to PSUs.

	Tribal ITI for Girls, Kamacheru	This is a Tribal Ashram School ITI for girls. It is a small ITI with only 28 students. Only two courses – Dress making and Cutting and Sewing are offered. Since there are hardly any employment opportunity in the area, students who complete training are usually self- employed. Mobilising students for this ITI is not easy and instructors have to counsel the parents of the families in order to admit them in the ITI. The ITI also has equipment to teach course on Electrician but due to lack of instructors, the course is not held.
	Tribal ITI, Gondpipri	This is a tribal ITI in the tribal district of Ghadchiroli. It runs all the popular courses like Fitter, Electrician, Motor Mechanic, Wiremen and Cutting Sewing and Dressmaking It has a small hostel for boys but it has no hostel for girls. Though 30% seats are reserved for girls in all courses, girls who get admission in engineering trades drop out within a few months. Girls usually opt for course like cutting and sewing and dressmaking. Drop out rates are also high among girls as there are no hostels and also trades like cutting and sewing and dress making have little opportunity for employment or apprenticeship. Being located in the tribal area, they have to spend time in mobilization. Usually they go to the village and hold mobilization events ten to fifteen days before admission. As tribal students are not comfortable to migrate out of their area, the placement rate is very low about 30%.
	Govt. ITI Pandakawda	This ITI is supported under the World Bank VTIP Project and is the only ITI in the country which has Textile as a trade. This is a tribal ITI and 75% of seats are reserved for tribals. Apart from textile other regular engineering trades like Welder, Diesel Mechanic, Electrician, Electronic are also taught. It also has some non- engineering trades

		like Fashion Technology, Hair and Skin Care, IT and ICT. As CoE has been discontinued the Textile trade has been broken down to Weaving Technician, wet Processing and Spinning Technician. However there are no students in these courses because of lack of instructors. Its industry partner Raymond play a very active role in the ITI. It not only helped in preparation of the curriculum of each of the trades in textile, it also helped in purchase of right equipment and trained the instructors. There are a substantial number of girls in this ITI in engineering trade like electrician, welding and electronic mechanic. One of the reason for this there is a girls' hostel run by the tribal department for the ITI.
Telangana	Govt. ITI, Nizamabad for girls	Nizamabad is a Muslim dominated district in Telangana. Though this is a girls ITI, 50% of the seats are filled with boys as otherwise they will go vacant. This ITI is run on PPP and through a dynamic principal and cooperation of IMC it has been able to generate Rs. 97 lakhs. This has helped the ITI to modernize its workshops and buy consumables which is otherwise difficult for a small ITI to manage from limited resources. It has an intake capacity of 400 students and it has no hostel facility. Girls have joined trades like electrician and some of them have also taken up apprenticeship and are now in Hyderabad. It has a special course on Solar Power with the electrician course. It has its own small solar power plant by which 20% requirement of the total energy of the ITI is generated by solar power. The ITI mobilises students through a number of ways including advertisement in print and electronic media. In order to attract women to join the ITI as students as well as instructors, the ITI has an informal crèche where one can bring their your children.
	Govt. ITI for	This ITI is reserved for Minority students in

	Minorities, Bodhan	Nizamabad. It is a small ITI with only five traditional engineering trades. There are only four women in COPA. The ITI and no hostel facilities. Students come to this ITI from a great distance (sometimes even 50 km). The placement rate of the ITI is very low. Mostly students go for higher admission in Polytechnic
	Govt. ITI Mallapally	This is the largest ITI in Telangana in terms of number of students. It has an intake of about 725 students out of which 33% are reserved for girls. The seats reserved for girls are also filled by girls as the ITI is in Hyderabad. It has a MoU with Maruti. Maruti has provided with equipment and also an instructor from the company comes to the ITI twice a month to take special classes. It has compulsory industry interface for 60 days which is very successful in giving the students an orientation to the industry.
Jharkhand	TSSDS ITI Tamar	This is a relatively well run ITI with great emphasis given to safety including wearing safety and management of waste. It is linked to the TATA waste management system. Most students at the ITI stay in the hostel. There is a hostel for boys, with girls being accommodated in the staff area. Most staff also stay on the premises. Teaching staff come from NTTF, to whom the TATA's have outsourced the teaching. As there is a hostel, despite being in an LWE affected area where there are frequent *bandhs*, studies are not affected. This ITI is a very highly rated ITI, with all seats taken up and there is a competition for each seat. Placement of students in very high, around 100% as the NTTF placement officer links to relevant industries and helps with placement of students.
	Govt. ITI Garwah	This is a remote ITI in a rural area, without any hostel facility. There is no public transport available to any place near the ITI. Therefore, students may have to walk up to half an hour to get to the ITI if they do not have their own transport. Presently, there are no girls at the ITI, though there were 2 girls in the previous year. Most students come from other towns, and therefore they may take 2-3 hours to get to the ITI.

		There has been no Principal present at the ITI since 2013, though there was one for the ITI till 2015. Presently, the post of the Principal is vacant. While there are 8 faculty deputed at the ITI, only 4 were present, as the ITI is remote and therefore even faculty do not want to join this ITI. The existing trainers seem to be considerably stretched due to the lack of staff resulting in them not being able to pay sufficient attention to students as they need to teach 2 batches simultaneously. There is considerable concern of safety due to the remoteness, and lack of onsite living facilities as it is an LWE affected area. Remoteness has also resulted in very limited internet access; only dial up access, which is hampering studies and day-to-day running of the ITI. The staff attend regular short training courses. The ITI was under renovation, and seem to have been neglected previously resulting in very poor maintenance.
	Pvt. ITI Ranchi	The ITI has recently shifted it's premises, and was still being set up. However, the present building design did not show any concern towards safety. No students were visible at the ITI, and were supposed to be on holiday as the exams had just finished.
Uttarakhand	Government ITI, Roshnabad, Haridwar	Only 7% enrolment are girls. Some girls student have to travel from far which takes anywhere from 35 – 45 minutes to reach using public transport. Difficulty in travelling and travelling in late hours acts as barrier for other girls in the community to join. No gender harassment committee in the ITI. Women specific trade are few in this ITI.
	Government ITI, Vikasnagar	Girls enrolment is more than 20% and more in the soft trades like Draftsman, hospital housekeeping etc, very few in hard trade like fitter, turner etc. Most of the girls are local or neighbouring areas except a few who come from outside (including from Jaunsar tribal region). The major barrier for more girls to join is safe accommodation at Vikasnagar to continue study. Even those who are local, face transportation problem. Most of the girl students feel that women specific trade e.g.

		Fashion designing, Computer operator, HR assistant etc will help improve enrolment.
	Government ITI, Dehradun	No major incidence of gender harassment reported. Minor issues as and when reported are dealt at the class teacher/ Instructor level. Many students come from various parts of Dehradun and use own/ public transport and face the inconvenience – feel that the ITI should have its own Bus for girls and that may help improve girls enrolment. Girl students from outside feel that many girls from their community/ village may like to join provided there is a safe accommodation available.
	Govt. ITI Women, Dehradun	Being girls ITI, all students are girls. Most of them from local Dehradun area and nearby places. About 15%- 20% from outside. The major barrier from outside being safe accommodation as there is no hostel facility. Most of the students use public transport and feel that an institute bus may help more girls from neighbouring areas can join the ITI. Most of the girl students feel that women specific trade that has market demand e.g. Fashion designing, HR assistant etc will help improve enrolment.

Annexure 6

Courses Conducted in the ITIs Visited

State	Name of the ITI	Courses
Assam	Government ITI Guwahati (Kamrup)	Draftsman Civil Draftsman Mechanical Electrician Electronics Mechanic Fitter Machinist Mechanic (Motor Vehicle) Mechanic Refrigeration and Air-conditioning Mechanic (Tractor) Mechanic Diesel Mechanic Radio and TV Photographer Plumber Sewing Technology Stenographer and Secretarial Assistance (English) Surface Ornamentation Technics (Embroidery) Turner Welder Wireman
	Government Women's ITI Guwahati	Basic Cosmetology (Hair and Skin) Draftsman Civil Electronic Mechanic Secretarial Practice (English) Short Courses Hair and Skin Lakme Hospitality, Coffee Café Day Women's Simulator Driving, Tata Motor
	Government ITI Nagaun	Draftsman Civil Electrician Fitter Machinist Mechanic (Motor Vehicle) Mechanic Diesel Sewing Technology Stenographer and Secretarial Assistance (English) Surveyor Turner Welder

		Wireman
	Ajmal Rural Technology and Demonstration Centre, Hojai	COPA Electrician Fitter Plumber Wireman
	Government ITI Nalbari	Electrician Fitter Stenographer and Secretarial Assistance (English)
Haryana	Government ITI Karnal	Carpenter COPA Draftsman Civil Electrician Electronics Mechanic Fitter Foundryman Machinist Mechanic (Motor Vehicle) Mechanic Refrigeration and Air-conditioning Mechanic (Tractor) Mechanic Diesel Painter General Plastic Processing Operator Stenographer and Secretarial Assistance (English) Stenographer and Secretarial Assistance (Hindi) Turner Welder Wireman
Delhi	Government ITI Pusa	Carpenter COPA Draftsman Civil Draftsman Mechanical Electrician Electronics Mechanic Fitter Foundryman Instrument Mechanic Machinist Mechanic (Motor Vehicle) Mechanic Refrigeration and Air-conditioning Mechanic (Tractor) Mechanic Diesel

		Mechanic Radio and TV Painter General Plastic Processing Operator Sewing Technology Sheet Metal Worker Stenographer and Secretarial Assistance (English) Stenographer and Secretarial Assistance (Hindi) Surveyor Tool and Die Maker (Dies and Moulds) Tool and Die Maker (Press tools, Jigs and Fixtures) Turner Welder Wireman
Jharkhand	Government ITI Garwha	COPA Draftsman Mechanic Electrician Electronic Mechanic Fitter Information Technology Mechanic Motor Vehicle Mechanic Diesel Turner Welder
	TSSDS Private ITI	Electrician Fitter Turner
	Tribal Private ITI	Electrician Fitter Health Sanitary Inspector Mechanic Diesel Physiotherapy Technician Radiology Technician Welder
Maharashtra	Tribal Ashram School ITI, Khamcheru	Cutting and Sewing Technology Surface Ornamentation Technology
	Tribal ITI Gondpipri	Cutting and Sewing Technology Dress Making Electrician Plumber Welder Wireman
	Govt. Minority ITI Mumbai	COPA Electrician

		Electronics mechanics Mechanic Diesel Plumber Sewing Technology Welder Wireman
	Govt. ITI Pandharkawada, Yavatmal	Basic Cosmetology Carpenter Draftsman Mechanical Driver cum Mechanic Electrician Electronics Mechanic Fashion Design and Technology Fitter Information Communication Technology Systems Maintenance Mason Building Construction Mechanic (Motor Vehicle) Mechanic (Auto, Electrical and Electronics) Mechanic Diesel Mechanic Radio and TV Sewing Technology Spinning Technician Textile Mechatronics Textile Wet Processing Technician Weaving Technician Welder Wireman
Telangana	Govt. ITI Mallapally	Carpenter COPA Draftsman Civil Electrician Electronics Mechanic Fitter Foundry man Instrument Mechanic Machinist Machinist Grinder Mechanic (Motor Vehicle) Mechanic Refrigeration and Air-conditioning Mechanic Diesel Mechanic Radio and TV Plastic Processing Operator Sewing Technology Sheet Metal Worker Stenographer and Secretarial Assistance (English) Turner

		Welder
	Minority Govt. ITI Bodhan	COPA Draftsman Civil Electrician Fitter Mechanic Motor Vehicle Mechanic Diesel
	Govt. Women's ITI Nizamabad	COPA Draftsman Civil Dressmaking Electrician Electronics Mechanic Information Communication Technology Systems Maintenance Mechanic Diesel Office Assistant cum Computer Operator Stenographer and Secretarial Assistance (English)
Uttarakhand	Vikasnagar ITI, Vikasnagar	Draftsman Civil Electrician Fitter Hospital Housekeeping Office Assistant cum Computer Operator Wireman
	Dehradun Yuvak ITI, Niranjanpur, Dehradun	Draftsman Civil Draftsman Mechanical Electrician Electronics Mechanic Fitter Instrument Mechanic Machinist Mechanic (Motor Vehicle) Mechanic Refrigeration and Air-conditioning Mechanic Radio and TV Painter General Plumber Stenographer and Secretarial Assistant (English) Stenographer and Secretarial Assistant (Hindi) Turner Welder Wireman

Annex 7

Standards and Legislation

Listed below are standards and regulations, other than those that have already been discussed in the environment regulation section in the document, and may need to be referred to as a part of program activities, curriculum development etc.

There are a number of Bureau of Indian Standards (BIS) standards that are applicable to the program. These include standards for construction in hazard prone areas and for building standards for educational centers and are listed below. Along with the BIS standards identified below, there may also be state specific building standards which may need to be consulted.

- IS 456: 2000 Plain and Reinforced Concrete – Code of Practice (reaffirmed 2005)
- IS 875: Part 3: 1987 Code of Practice for Design Loads (other than Earthquake) for Buildings and Structures - Part 3: Wind Loads (reaffirmed 2003)
- IS 800: 1984 Code of practice for general construction in steel (reaffirmed 2003)
- IS 8237: 1985 Code of Practice for Protection of Slope for Reservoir Embankment (reaffirmed 2002)
- IS 10635: 1993 Freeboard requirements in embankment dams – guidelines (reaffirmed 2003)
- IS 11532: 1995 Construction and maintenance of river embankments (levees) – guidelines (reaffirmed 2005)
- IS 12094: 2000 Guidelines for Planning and Design of River Embankments (Levees) (reaffirmed 2005)
- IS 12169: 1987 Criteria for design of small embankment dams (reaffirmed 2002)
- IS 1893 (Part 2): Elevated and Ground Supported Liquid Retaining Structures, (Part 3): Bridges and Retaining Walls, and (Part 5): Dams and Embankments
- IS 4326: Earthquake Resistant Construction
- IS 13920: Ductile Detailing of Reinforced Concrete Structures
- IS 13827: Earthen Dwellings
- IS 13828: Low Strength Masonry Structures
- IS 13935: Seismic Strengthening of Structures
- IS 14496 (Part 2): 1998 Guidelines for the preparation of LHZ maps in mountainous terrain: Part 2: Macro Zonation
- IS 14458: Guidelines for Retaining Walls for Hilly Areas. Part 1: Selection of the Type of Walls. Part 2: Design of Retaining/Breast Walls. Part 3: Construction of Dry Stone Walls
- IS 14680:1999: Guidelines for Landslide Control
- IS 14804:2000: Guidelines for Siting, Design and Selection of Materials for Residential Buildings in Hilly Areas
- National Building Code (NBC) 2005
- IS 8827 – 1978: Recommendations for Basic Requirements of School/Educations Buildings (reaffirmed in 2006)
- IS 7662 – 1974: Recommendations for Orientation of Buildings
- IS 14435 – 1997: Code of Practice for Fire Safety in Educational Institutions
- IS 9963 – 1987: Recommendations for Buildings and Facilities for Physically

- Challenged
- IS 2440 – 1974: Guidelines for Daylighting of Buildings

There are also standards for hazardous chemical handling standards that would be relevant for ITIs that use any of the chemicals identified as hazardous chemicals in the hazardous chemical regulations of the GoI. The BIS occupational health and safety standards would also be a good reference point for planning for occupational health and safety standards for all ITIs and modules to address the issue.

This apart, there are also a number of BIS standards for hazardous chemical handling, occupational health and safety standards and standards for various industries such as the Leather, Tanning Materials and Allied Products; E-learning; Reliability of Electronic and Electrical Components and Equipment; Food Hygiene, Safety Management and other Systems; and Dentistry.

Annex 8

Environmental Screening Checklist

An illustrative list of checklists has been developed for all major activities identified through this ESSA. These are to be used as a part of the screening process for program activities. Further checklists, if require for other activities identified subsequently under this program may also be developed.

A: Areas of Activity

Please identify all major activity heads likely to be undertaken as part of program activities

Activity	Yes	No	Further action if Yes
Construction/renovation			Please refer checklist B, E
Modernization and upgrading of learning/ new equipment			Please refer checklist C, D, E
Waste generation, management and disposal			Please refer checklist D
Introduction of new courses/upgrading of syllabus			Please refer checklist C
Capacity creation of staff, trainers			Please refer checklist F

B: Construction Management

Planned Activity	If yes, suggested actions
Construction site management	Refer to MoEF guidelines and regulations for construction and demolition and construction projects for guidance on all aspects of construction site management. Limited site access Sites properly planned with material and waste storage appropriately done
Hiring of labor	Appropriate water supply and sanitation system for use on construction site Comply by labor laws
Labor camp developed	Development of labor camp with appropriate sanitation, water supply and energy supply Comply to labor laws
Clearing vegetation at construction site	Compliance to forest, tree and other required legislation Identify, plan and undertake compensatory plantation activities
Pollution from site	Appropriate timing of activities to limit problems from noise Appropriate measures to reduce soil, water and air pollution Appropriate measures to reduce dust pollution at site and from transportation of material
Waste management	Refer to MoEF guidelines and regulations for construction and demolition and construction projects for guidance and required fee and levies.

	Identification of waste disposal system prior to starting work Taking required permits etc prior to starting work Post construction site, labor camp etc cleaning up and waste disposal Encourage efficient use of material to reduce waste generation, including reuse of material at ITI where possible
Accident management	Restricted entry to construction site Emergency first aid available at site Identification of appropriate hospital and other required facilities
Raw material sourcing	Sand, earth etc sourced only from legal mines
Design of building	Local laws and building bylaws complied by

C: Learning: Safety and OHS

Planned Activity	**If yes, suggested actions**
Identification of new syllabus	Theoretical knowledge of safety practices clearly a part of syllabus according to trade needs Module on OHS included in all syllabus
Learning and practice of safety	Adequate safety equipment at workshop to ensure safe practices in place Repeat of theoretical classes prior to workshop practical classes starting for first time Safety equipment to be worn by students at workshop OHS drills and practical training part of regular schedule in all ITIs, and all for students

D: Waste Management

Planned Activity	If yes, suggested actions
Waste generation	Identification of legal requirements for different waste types Required permission for storage and disposal taken Appropriate disposal systems identified Identification of appropriate measures to minimize waste generation
Hazardous waste	Identify hazardous waste, according to law and comply with its storage, disposal etc needs
Waste storage	Identification of restricted area for storage of waste, away from possible impact from weather Segregation of different types of waste Labeling of waste Appropriate storage of liquid waste, containers etc Identification of do's and don'ts for waste storage – such as no storage in corridors, workshops, open areas and classrooms
Institutional level waste management	Identification of waste monitoring and management system
Garden, organic and other compostable waste generated	Compost and other appropriate waste disposal system identification, where practical and possible

E: Safe and Good Learning Environment

Planned Activity	If yes, suggested actions
Building construction design	Identify appropriate green building parameters to incorporate in design, as practical Handicapped ramps etc available as required designed and built Use of green building material where practical
Basic infrastructure	Building water supply, sanitation and drainage system development according to legal requirements, activities and classes to be undertaken, estimated number of students and staff – gender segregated Identification of maintenance system for all infrastructure
Hygiene	Identification of appropriate washing places for girls and boys separately Appropriate waste disposal system for toilet waste Sanitation infrastructure for the handicapped available
Lighting and energy	Identification of appropriate green building norms and application as appropriate Use of energy efficient lighting and other equipment
Water	Use of water efficient systems where possible Water harvesting and conservation as practical
Safe building	Identification of all escape paths, label and keep clear Installing of safety equipment like fire-fighting equipment and fire alarms First aid available in campus Maintenance, upgrading and updating of all safety equipment in place

Planned Activity	If yes, suggested actions
Training of trainers	Module on safe use of equipment and workshop safety Module on OHS Module on safe material and waste management
Principal and management staff	Module on OHS Module on safe material and waste management Module on building safety and its management Module on environmental regulatory needs Module on monitoring systems to ensure compliance to identified regulations and other good practices, including management of WATSAN infrastructure
Point person in-charge of safety in ITI	Module on OHS Module on emergency management and management in time of disasters

F: Monitoring, Training and Management

Annex 9

Occupational Health and Safety, Suggestions for Training Module

This module has been adapted from the IFC Environmental, Health, and Safety (EHS) Guidelines General EHS Guidelines: Occupational Health and Safety (OHS). Contents discussed here could be used to guide develop a basic module for OHS. Training should consist of basic hazard awareness, site- specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Any site-specific hazard or color coding in use should be thoroughly reviewed as part of training activities. The issues covered under the training could include,

- Knowledge of materials, equipment, and tools
- Known hazards in the operations and how they are controlled
- Potential risks to health
- Precautions to prevent exposure
- Hygiene requirements
- Wearing and use of protective equipment and clothing
- Appropriate response to operation extremes, incidents and accidents
- Basic first aid in case of an accident

Apart from basic occupational training and overall awareness each course is also expected to have specific training modules appropriate to their area of learning.

Those who are expected to undertake first aid and emergency management, need to be identified an appropriate training to discharge their responsibilities also need to be given to them.

All staff and trainees in the ITI must be familiar with personal protective gear. The table below can be used as a guide on the different types of gear available and their use.

Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation.	Safety Glasses with side-shields, protective shades, etc.
Head protection	Falling objects, inadequate height clearance, and overhead power cords.	Plastic Helmets with top and side impact protection.
Hearing protection	Noise, ultra-sound.	Hearing protectors (ear plugs or ear muffs).
Foot protection	Falling or rolling objects, pointed objects. Corrosive or hot liquids.	Safety shoes and boots for protection against moving & falling objects, liquids and chemicals

Hand protection	Hazardous materials, cuts or lacerations, vibrations, extreme temperatures.	Gloves made of rubber or synthetic materials (Neoprene), leather, steel, insulating materials, etc.
Respiratory protection	Dust, fogs, fumes, mists, gases, smokes, vapors.	Facemasks with appropriate filters for dust removal and air purification (chemicals, mists, vapors and gases). Single or multi-gas personal monitors, if available.
	Oxygen deficiency	Portable or supplied air (fixed lines). On-site rescue equipment.
Body/leg protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration.	Insulating clothing, body suits, aprons etc. of appropriate materials.

A. <u>General System Management</u>

- Surfaces, structures and installations should be easy to clean and maintain, with no hazardous substances accumulated in the area.
- Floors should be level, even, and non-skid, and clear from material and equipment obstructing the way, and spills must be cleared away immediately.
- Heavy oscillating, rotating or alternating equipment should be located in separate area, and isolated from other parts of the workshop.
- Standard Operating Procedures (SOPs) should be developed for project or process shut-down, including an evacuation plan. Drills to practice the procedure and plan should also be undertaken regularly.

- The space provided for individual worker, and overall, should be adequate for safe execution of activities, including transport and interim storage of materials and products.
- Passages to emergency exits must be unobstructed at all times. Exits clearly marked and visible in total darkness, and in number and capacity to be sufficient for safe and orderly evacuation of maximum number of people present at any time. There should be a minimum two exits from any work area.
- Buildings must have appropriate facilities designed and built for disabled people, such as ramps and hand-rails.
- The workplace should be designed to prevent the start of fires through the implementation of fire codes applicable to planned activity in the area.
- There should also be adequate fire detectors, alarm systems, and fire-fighting equipment, which are well maintained, in working condition and readily accessible. *Lavatories and*
- There should be adequate natural lighting in the building, with artificial illumination provided as required, and emergency lighting available.
- All vehicles should be parked in demarcated area, and not obstructing pedestrian areas.
- Covers should, if feasible, be installed to protect against falling items
- Measures to prevent unauthorized access to dangerous areas should be in place
- Appropriate ventilation and fresh air should be available in rooms workshop.

- The temperature in the building should be at a level appropriate for the purpose of the facility, and comfortable for working in.
- All hazardous substances need to be clearly labeled, with their properties, or temperature or pressure, should be labeled as to the contents and hazard, or appropriately color coded.
- Hazardous material should be stored in a safe place, with restricted access and according to requirement of the hazardous material, such as temperature and moisture requirements.

B. Physical Hazards

- Noise levels must be within limits appropriate, and based upon legal needs for an educational area.
- In jobs where there is continuous high level of noise, appropriate protection should be ensured to minimize risk of damage to hearing. Required protection gear should be available and used.
- Ensure there are no loose wires or live wires hanging in the buildings. In case any are identified, appropriate repair activities must be taken up immediately.
- Checking all electrical cords, cables, and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage of the portable hand tools
- Double insulating / grounding all electrical equipment used in environments that are, or may become, wet; using equipment with ground fault interrupter (GFI) protected circuits
- Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas
- Appropriate labeling of service rooms housing high voltage equipment ('electrical hazard') and where entry is controlled or prohibited
- To reduce risk of injury to eyes in activities that can potentially injure the eyes, such as welding and chemical based activities, machine guards or splash shields and/or face and eye protection devices, such as safety glasses with side shields, goggles, and/or a full face shield. Specific Safe Operating Procedures (SOPs) may be required for use of sanding and grinding tools and/or when working around liquid chemicals. Frequent checks of these types of equipment prior to use to ensure mechanical integrity is also good practice.
- Use protective clothing in workshops, including appropriate shoes and head protection.

C. Chemical Hazards

Chemical hazards may impact either by single acute exposure or chronic repetitive exposure to toxic, corrosive, sensitizing or oxidative substances. They may also occur due to uncontrolled reaction, including the risk of fire and explosion, if incompatible chemicals are inadvertently mixed.

- Replacement of the hazardous substance with a less hazardous substitute
- Implementation of engineering and administrative control measures to avoid or minimize the release of hazardous substances into the work environment keeping the level of exposure below internationally established or recognized limits
- Maintaining levels of contaminant dusts, vapors and gases in the work environment at concentrations below those recommended by national standards for air quality, and within levels that do not cause any adverse health effects.
- Minimized handling and exposure of dry powdered materials by using (i) enclosed

operations, (ii) local exhaust ventilation at emission / release points, (iii) ensure activities not taking place in area where there is a wind or breeze, amongst others appropriate actions for the activity.

- Storing inflammables material away from ignition sources and oxidizing materials.

Annex 10

Guidance Note for Solid and Liquid Waste Management

There is an assortment of waste that is generated in ITIs from different activities and sources. This is both in the form of liquid and solid waste. Therefore, there is a need for a sound solid and liquid waste management system to be in place to address concerns of waste and to ensure proper waste management. This annex provides some basic guidance for the management of different types of waste. Further guidance can be sought from the existing legal procedures as identified by the MoEF. Equally, recently the Government of India has brought out guidelines for construction and demolition waste, which should be referred to for any construction, renovation and refurbishment activity that may be taken up by the ITIs under this project.

References and further reading can be taken from the documents listed here, which have also been used for development of these guidelines. These are, Department of Water and Energy, NWS Government, 2009, Liquid Trade Waste Regulation Guideline, Sydney, Australia; UNEP, 2007, E-Waste Volume 1, Inventory Assessment Manual, Osaka Japan; Alemayehu Essayas, 2004, Solid and Liquid Waste Management, Ethiopian Public Health Training Initiative, Jimma University and USAID, Addis Ababa, Ethiopia; CPCB, MoEF, 2008, Guidelines for Environmentally Sound Management of E-Waste, New Delhi, India; MoEF, 2016, Construction and Demolition Waste Management Rules, 2016, Government of India, Delhi, India; MoEF, and, Manual and Norms for Environmental Clearance of Large Construction Projects, Government of India, New Delhi, India. Department of Environment and Environment DG, European Commission, 2003, Preparing a Waste Management Plan, A Methodological Guidance Note, European Topic Centre on Waste and Material Flows, European Commission.

A. Initiation Planning

- Identify the different types of waste generated and their quantum
- Identify applicable regulations and ensure norms, standards and procedures are followed as identified by the regulations.
- Identify systems required to be put in place to follow existing standards and norms
- Identify further systems that may be required to create a more sustainable and appropriate waste management system.
- Identify monitoring and management systems to ensure
- Develop a waste management plan for all waste identified. This should include both solid and liquid waste.
- Identify costs and financial implications for ensuring appropriate waste management system and assure finances.
- For all construction and demolition waste use the guidelines and legislation guiding the management of such waste.
- For all e-waste, use MoEF guidelines (mentioned in this annex above) and follow the e-waste regulations for its collection, storage and disposal.

B. Solid Waste Management

- Prior to any new activity starting as a part of the planning process identify the waste that may be generated, both temporary and long term waste concerns, and develop a plan for it.
- On the campus create appropriate waste disposal system – including dustbins at strategic locations, for disposal of waste
- Create awareness and appropriate IEC material for ensuring everybody is aware of the waste disposal system and uses it
- Assign staff for overseeing waste management system and train all those who need to handle the waste, including providing and using of safety and protection gear
- In classrooms create education among students on the waste disposal system to ensure that they know about it and follow it
- Identify all waste that can be reused, recovered or recycled and possible ways in which this waste may be recycled, recovered or reused and identify processes and implement them, where practical.
- To the extent possible try and implement good material management plans so as to reduce generation of waste.
- Identify compostable and biodegradable waste and appropriate composting activities and the disposal of the compost.
- For any hazardous and toxic waste identify appropriate and separate system to ensure no contamination takes place while storing, transporting and disposal of the waste.
- Put up signs indicating any hazardous or toxic waste area to reduce the possibility of accidents.
- Identify a waste cleanup and accident plan of toxic and hazardous waste.
- Storage of waste should be done to ensure safety of the campus, good waste management both according to the law and to ensure there is no environmental pollution. Access to waste storage should be limited. An inventory for the waste should be kept. No waste should be stored in the open, unless that is the best practice and required by law.
- Ensure that no waste is dumped in low lying areas, in waterbodies etc. In case of any accidental dumping, clean up immediately.
- For all batteries, e-waste, plastic waste and others where there is a need for licensed vendors, only use legitimate vendors as identify by the legal requirements.
- Where, such as in e-waste, there is a time limit for storage period prior to disposal, ensure that waste is disposed in time.

C. <u>Liquid waste management</u>

- For all liquid waste (other than sewage such as from toilets, kitchen and laundry) identify quantum and type and ensure that required legislation needs such as permits are clearly identified and required legislative needs met.
- For liquid waste, drains for disposal and required connection to sewage system or alternates like septic tanks should be considered. Appropriate permits and cess should be paid and required connections taken.
- Where septic tanks and other similar systems are used for disposal of toilet waste, identify appropriate cleaning and disposal system and monitoring system to ensure that there is no contamination' of soil or groundwater. Ensure all identified disposal system has a sound design that considers groundwater levels, soil type and load of waste.

- Kitchen grey water may be recycled for irrigation after appropriate filtration etc.
- For waste not to be disposed through sewage system identify appropriate alternate systems, and where recovery and reuse is possible, such as for oil and grease for machine maintenance recover and use the waste accordingly.
- Ensure that drains for storm water are built according to requirement and are only used for storm water and not for disposal of other liquid waste or solid waste.
- If possible, storm water drain discharge for irrigation or dispose such as to ensure no water stagnation or waterlogging is created.
- In areas where grease may be disposed in the drain, ensure that grease arrestors are in place and cleaned regularly.
- To ensure that no solid waste, toxins etc enter liquid waste disposal systems and drains, sweep and clean all areas when dry before any water is used for cleaning spaces.
- Where there is likely to be some chemical and other toxins in the liquid waste, identify if pretreatment is required and develop required pretreatment system.
- Car washing and other mechanical motor activities must not dispose their waste in drains directly, and alternate interceptors should be developed and pretreatment done before the waste is disposed in the places drainage/sewage system.
- Storage of chemicals should be done in a manner that is avoids spills and leaks. In case of any spills and leaks, use dry cleaning methods to clean up the area.
- In case of chemical laboratory and other chemical industry and dye industry courses, liquid would need to be disposed after pretreatment. Any chemicals that could be discharged in the sewage system should be neutralized before disposal. Where housekeeping involves cleaning of sinks used for chemicals, use plenty of water to ensure dilution of chemicals that may enter the drains.
- Liquids from the beauty courses like solvents – such as nail polish removers, must not be disposed in drains. If a number of solvents are used for different activities and courses, collect and pretreat all of them before disposal in any sewage system.
- Grinding liquid waste would need pretreatment prior to disposal in the drainage and sewage system.
- In case there are a number of different activities which generate liquid waste, a solid settlement tank, if appropriate, may also be considered as a part of the pretreatment activities, to ensure no solids are disposed in drains.

s

Green Buildings Guidance Note

This Annexure provides basic guidance on green buildings which can be used along with existing guides and manuals on green buildings to plan, construct and manage infrastructure. There is further guidance on green buildings provided http://www.grihaindia.org/ the Graha Council website which provides guidance on development of green buildings and does green building rating. This section has used the Graha 2015 manual, along with City of Cape Town Smarty City Handbook, A guide to green building in Cape Town 2012 to develop this guidance note.

A. Site Identification and Planning

- Where possible use of greyfield or brownfield areas should be preferred. Avoid greenfield areas where possible.
- Where brownfield sites are being used, ensure appropriate rehabilitation is undertaken to avoid any health or contamination concerns to the users of the building.
- Site plan to conform to local bylaws, planning norms and master plans.
- Identify design and strategies to promote natural features or incorporate them in design. To the extent possible avoid vegetation clearance.
- Where possible and practical compact structure over a sprawl should be considered.
- Consider natural drainage paths to avoid flooding and waterlogging
- Identify designs appropriate to local weather conditions to minimize discomfort, while maximizing use of natural light and other weather factors.
- Incorporate features to make them barrier free, handicapped and pedestrian friendly, to the extent possible.
- Consider building orientation to ensure comfort in both summers and winters, ventilation and maximization of natural light while reducing noise and vibration.
- To the extent possible identify building material that has lower impact on the environment and energy efficient. Avoid toxic materials like asbestos. Where possible use locally available materials and more environmentally friendly materials, such as CFC and halogen.
- To the extent possible try and ensure design incorporates reuse of existing building and demolition material when remodeling or building over greyfield site. Use fly ash and other waste material for building activities where practical and available.
- Undertake landscaping both to make a friendlier and better study environment and as a way to reduce the impact of summer heat.
- Where possible use weather resistant materials for outdoors to reduce frequent replacement
- Try and use standard dimensions to avoid cutting and wastage of material
- Where clearance of vegetation cannot be avoided, plan for compensatory plantation activities. To the extent possible for both compensatory plantation and landscape plantation use locally appropriate species and those that are likely to be good for overall biodiversity in the area.

- Identify appropriate measures for indoor comfort, such as appropriate acoustics, lighting and temperature.
- Ensure appropriate safety systems identified and planned according to planned use of the building.
- Design systems to ensure good indoor air quality, and minimize concerns of pollutants, fumes, vapor and odor from activities carried out in the workspaces etc.
- Identify appropriate building and facility maintenance system, so that there is minimal need for overhaul, renovation and repair and resource wastage.

B. Construction Phase

- Take measures to limit the erosion of top soil by using erosion control measures.
- Try and stockpile soil where excavation occurs to reuse it later. Where possible keep aside soil dug out for other landscape purposes and not dispose it as waste.
- Avoid soil compaction, such as by heavy machinery, and where required rehabilitate the soil
- Manage construction sites to minimize contamination occurs to soil, air or water resources.
- If curing of new walls etc is required ensure that drainage is appropriately provided and that water wastage is minimized. Where possible reuse water.
- Try and use sustainable plantation forest products where wood is required, if available and easily accessible
- Minimize pollution from vehicles used to transport material. For example, ensure all material is covered and secured during transportation.
- At construction site minimize noise and fumes and contamination to the environment tis minimized. Some measures to ensure this could include vehicle parking is properly identified, sites are well planned with material and waste storage properly regulated, diesel generators are well serviced and there is adequate water supply and sanitation for workers is available as required.
- Avoid construction activities in high wind periods. Where there is a likelihood of dust generation consider using sprinklers to reduce dust in atmosphere.
- Put temporary barriers up around construction site to reduce dust flying outside the construction site.
- Ensure spill prevention systems in place for material like bitumen and diesel. Also identify appropriate clean up in case of any spills.
- Provide appropriate facilities for construction workers, as required for those hired for the work. This may include labor camps and basic infrastructure, safety equipment for working and first aid.
- Post construction undertake required rehabilitation of construction sites, labor camps etc. Ensure any waste and toxic material are disposed of as required under the applicable law and also in a way safe to human beings and the environment.

C. Energy Management

- Use solar passive design – that uses ventilation, natural light, shading, glass etc. to ensure minimal use of energy.

- Identify all energy requirements, and appropriate energy efficient systems, such as those with BEE energy star rating.
- Use of insolation material to reduce energy expenditure such as in very hot or cold climates, while ensuring the material is environment friendly. Use of recyclable material for insolation may also be considered, to reduce further burden on the environment and lower costs.
- Identify systems to generate and use renewable energy, and develop and use such systems.
- Avoid the use of 'up-lighting', excessive lighting and defused lighting to reduce light pollution.

D. Water Management

- Identify and use water efficient systems
- For gardening and landscaping activities, avoid watering in high noon and times of high evaporation or wind.
- Avoid plantation that requires excess levels of water, such as exotic palms, especially in arid and semi-arid areas. Use methods like mulching to reduce water usage for landscaping.
- Use low flow fixtures and water efficient devices in the campus.
- Minimize hard surfaces while supporting permeable surfaces, to support natural recharge of groundwater – along with ensuring that all surfaces are garbage and waste free.
- Where hard surfaces exist do not allow hose down to clean the surface. Identify more appropriate alternate systems for cleaning and maintenance.
- Avoid using drinking water for non-drinking purposes.
- Undertake water harvesting where appropriate, and identify appropriate maintenance for such systems to ensure there is no contamination of water/groundwater, and it does not cause any other adverse health impacts.
- Where possible identify ways to reuse water, such as use of grey water for landscaping activities.
- Identify appropriate maintenance system to avoid wastage through leakages etc.
- Identify appropriate drainage systems and disposal of waste from drains and toilet facilities.

E. Material and Waste Management

- Identify appropriate systems for the storage and disposal of waste, and avoiding of pollution and other concerns from poor management and disposal waste.
- Ensure all legal requirements for waste generated in the facility are met.
- Identify ways to minimize waste and recycle as much waste as possible.
- Identify waste segregation systems for all waste type, to reduce waste and ensure appropriate disposal of different waste types. This waste, to the extent should be segregated at source of generation. Therefore, appropriate waste receptacles should be available throughout the campus, as required.
- Develop composting system and use of compost and manures produced through composting, for all biodegradable waste.

- Identify separate and clearly marked areas for toxic and hazardous material and waste and systems to manage these materials and wastes appropriately.

Annex 12

Sustainable Landscape

Considering that most ITIs have large open spaces and unconstructed areas, there is an opportunity to create an overall healthy environment. Where ITIs already have a large number of trees, especially native and old trees the area may be preserved. However, cleared open spaces around buildings can be further developed to improve the overall environment sustainable landscaping. This annex therefore suggests possible ways to create such a landscape, that balances aesthetics with the environment and a green campus. Sources referred to and that might be good references for planning sustainable landscapes are, http://www.totallandscapecare.com/sustainable-landscaping-guidelines/, http://www.extension.umn.edu/garden/landscaping/design/module1.htm, http://www.bhg.com/gardening/landscaping-projects/landscape-basics/green-landscaping/, http://in.usgbc.org/resources/sites-rating-system-and-scorecard.

A. Introduction

Sustainable or green landscapes could be considered as a part of the overall campus design when undertaking renovation and extension activities; as they would save on time, money and energy to build and maintain. They should mainly support native species of plants, creating green spaces that reduce air, soil and water pollution, while making the area more hospitable for local biodiversity, and practical for the use they are meant for. They can also be seen as healthy recreational spaces.

B. Basic Principles for Designing

- Consideration of landscaping should take into account (i) functionality, (ii) maintainability, (iii) environmentally soundness, (iv) cost effectiveness,s and (v) visually pleasing in this order. Therefore, first it must consider functionality then the ability to maintain it etc. However, all these factors must be considered while designing the landscape to identify an appropriate balance.
- The actual use of the area must be considered – which near the building may include recreational activities, and in areas of high heat a cooling effect, while not blocking natural light.
- Activities done should not do anything to harm the environment or degrade it. Therefore, plantation, management of existing drainage systems etc. must consider that what is good for the environment.
- Use of a precautionary approach while identifying the landscape activities should be considered. Where there is a possibility of any activity resulting in adverse impact to either human or the natural environment identify alternatives, including doing nothing.
- Design considering economic, environmental, and cultural conditions and to the local, regional context.
- Consider existing benefits of preserving existing environmental resources to reap their ecosystem services. Conserve resources in a sustainable manner and where possible regenerate damaged ecosystem services.

C. **Development and Management**

- Prior to starting the designing activity, some basic information should be collected on the planned use of the area – including the use of pathways, parking requirements, pedestrian walking areas, requirements for the handicapped and movement of any heavy machinery etc. Based on these criteria overall allocation of space for different activities and a basic plan can be created using the other criterions identified. Therefore, a comprehensive assessment of the area and needs will need to be undertaken prior to starting any design and planning activities for the identified land.
- Pedestrian walkways should be developed based upon number of pedestrians normally expected to use the area at a time.
- The landscape design activities should be undertaken after identifying the overall ecosystem and weather conditions of the area and species appropriate for the area based on the findings.
- The design should try and maximize water conservation by reducing the need for irrigation. Where possible use of rain water and water harvesting can also be considered alongside with appropriate plantation and other water conservation measures and reuse of grey water. Ensure that design does not increase soil erosion, and create excessive runoff.
- In dry, arid and semi-arid areas, appropriate local vegetation and other landscape tools may be considered, for example, rocks, boulders etc. to add to the visual appeal without changing the ecosystem and also creating landscape that requires excessive moisture.
- Identifying alternates to impervious surfaces to increase water recharge and reduce runoff may be considered.
- While undertaking landscape planning, local fauna should also be considered. Therefore, if certain bird species that are found/native to the place prefer certain habits, preference to such plant species may be considered.
- Alien and invasive species should not be promoted, and to the extent possible local flowering and other species can be considered instead.
- Other material – benches can also preferably be made from natural and local material that has a low impact on the environment. Do not use material like wood from endangered tree species. Material conservation through use of demolition and other waste materials and reduction of greenhouse gas emissions can be criteria in while designing the landscape.
- Since the ITI is an educational institute with hostel or canteen facilities in many cases, biodegradable waste may be produced from these facilities and other sources. Therefore, awareness on waste segregation can be promoted alongside to ensure all biodegradable waste is composted and used as manure for the landscape itself.
- Regular maintenance systems, such as for plantation, mulching, watering must be identified at the planning stage, to ensure the success and good management of the landscape.
- Soil conservation and improvement along with water conservation though processes like increased organic content in the soil may also be considered.
- Incorporation of preexisting natural features such as undulating topography, rocky areas and waterbodies could be considered as a part of the overall landscaping plan.
- While identifying plants consider the amount of light available, water needs and availability, the existing soil type and function of the place where they are to be planted, as some of the important components. Aesthetic concerns like form, structure, color and

seasonality may also be considered, especially as these green spaces are likely to be used by the ITI staff and students and therefore should also appeal to them.

- While identifying plants other fauna and flora of the area must also be considered. While some insects, which are likely to be pests may be attracted to certain plants and may therefore, require alternate plants/foliage used. Also, other pest concerns should be identified to ensure appropriate plantation plan that minimizes use of pesticides, inorganic fertilizers and other inorganic agrochemicals. The use of Integrated Pest Management actions and techniques may be used instead.
- Another criterion for identification of the vegetation should be the local fauna and flora that might be a part of the local ecosystem. Plant species that are habitats and hosts, nesting or feeding species may be planted to encourage and shelter local ecosystem.
- Where possible reuse existing vegetation.
- Reduce light pollution, and only use as much lighting as possible. Lamps and garden fixtures with light should be focused over defused and not facing upwards. Use energy efficient lighting systems.

Annex 13

List of Workshop Participants

The workshop participants included the following:

Organization	Name	Designation
Jija Bai Women ITI	Vijay Kumar	Principal
ITI Pusa Road	Lokpal	Principal
Don Bosco Tech Society	Fr. George Mathew	Principal
IAMR Group of Institutions	Dr. Sanjeev Layek	Dean, Associate Professor
IAMR Group of Institutions	Sachin Kumar	Associate Professor
TATA Motors	Swati Jha	Asst. Manager, Skill Development and Training Institute
Siemens	Manmohan Singh Koranga	CSR Manager
Diakin	APS Gandhi	GM - Training and Development
Laghu Udyog Bharati	Anju Bajaj	National Secretary
NTPC	Manmohan Singh	Sr. Manager, Badarpur Division
IGPCL	Sunil Kumar	
Air India	Sumeer Kohli	Officer
UNDP	Simone Clement Chauvet	
UNDP	Reemi Kurian	Apprenticeship Specialist
CII	Neeta Pradhan Das	Director - Skill Development
FICCI	Praveen Manikpuri	Deputy Director –Skills Development
DEFT	P.S.Banerjee	
Directorate of Training, MSDE	Amar Kumar	Asst. Director
Directorate of Training, MSDE	Rajesh Meena	Asst. Director
Directorate of Training, MSDE	Swati Sethi	DD - Projects
Directorate of Training, MSDE	RP Dhingra	Director Projects
Govt. of Assam	Rituraj Bora	Direcor, Employment & Craftsmen Training
Govt. of Telangana	S. Raja	Dy. Director, DTE
Govt. of Odisha	Ajay Kumar	Dy. Director, DTE&E

Govt. of NCT of Delhi	Dr. Suman Dhawan	Department of Training & Tchnical Education
Govt. of Haryana	Narendra Kumar	DIT
Govt. of Haryana	Anita Dutta	DIT
Govt. of NCT of Delhi	O.P. Shukla	Director
Govt. of Maharashtra	Dr. Vijay Mahajan	DVET
Govt. of Madhya Pradesh	K.C. Jain	Joint Director
The World Bank	Muna Meky	Senior Education Specialist
The World Bank	Madhusree Banerjee	
The World Bank	Raadhika Gupta	Consultant
The World Bank	Kunal Datt	Consultant, Skill Development