

Executive Summary

Environment Management Framework

Background

Skilled workers are the pivotal factors in any growing economy. In a globalised and highly competitive economy, it is necessary for a nation to supply good quality and cost effective products in the market for sustainable growth. In India, traditionally, the Industrial Training Institutes (ITIs) are the main centers that produce skilled workforce for different trades.

In order to modernize and develop high quality vocational education and training systems in the country, the Director General of Employment and Training (DGE&T), Ministry of Labour & Employment (MoLE), Govt. of India, has initiated a process to upgrade about 500 ITIs to the level of "Centre of Excellence (COE)". The first 100 ITIs are being upgraded through domestic resources, while the remaining 400 ITIs are proposed to be taken under the project, viz., 'externally aided project for reforms and improvement under Vocational Training Service rendered by the Central and State Governments'.

Purpose of Environmental Management Framework

Planning, development and management of the ITIs may involve some important environmental obligations. An Environment Management Framework would be a helpful tool in preventing or overcoming these unseen hurdles at any stage. For developing an institute, EAEMF would also serve as decision-making tools, ensuring that the project design would result into an environmentally sound and sustainable reality. The DGE&T engaged professional services of CEPT University, Ahmedabad to undertake an environmental assessment and prepare an Environment Management Framework (EMF) with the following main objectives:

- a. Expand/augment the existing good practices;
- b. Incorporate environmental principles during location/siting, design, construction, operation and maintenance of the ITIs and;
- c. Integrate industry-specific environmental, health, and occupational safety issues as well as demand-driven industry-specific environmental issues relevant for international benchmarking of the industries in the curriculum for the improved vocational education system.

Methodology Adopted

In this context, the EA/EMF covered review of standards, statutory and other provisions; assessment of existing situation through site visits and consultation with various stakeholders; documentation of current practices and; preparation of an Environment Management Framework.

A detailed desk review was conducted for various relevant acts, rules, manuals, standards and guidelines at the national level, to have a comprehensive idea of the mandatory as well as suggestive measures that can be incorporated in the EMF. The review of these relevant documents included those related to Site Selection and Planning, Construction, Environmental legislation, Occupational health and safety, Best Practices including EMS and EHS and Operational Policies of the World Bank. As a part of the field assessment, the exiting coverage of environment, health and occupational safety issues in the present course curriculum was also reviewed.

A relatively small, but credible set of samples 19 ITIs (Table E-1), was taken up for site assessment of the existing situation. Samples were selected on the basis of different criteria. These included parameters pertaining to geographic location/siting (urban/ rural/hilly/coastal/flood prone); climatic conditions (hot/humid/arid/warm); polluting nature of trades/pollution potential (chemical, plastic, hospitality, civil, P&M, automobile); and status of the ITI (whether upgraded to COE or not). The site examinations included interviews with the ITI management, current students and recent graduates about their opinion on the key issues.

Table E-1 : List of ITIs covered in the Field Assessment

S.No.	ITI	Location	Climate	Trade
1	Morigaon, Assam	Plain/Rural	Humid, Sub-tropical	Civil
2	Guwahati, Assam	Urban	Humid, Sub-tropical	Civil
3	Durgapur, West Bengal	Urban	Tropical Wet & Dry	Instrumentation
4	Shamshi, Kullu	Hilly	Cold, Cloudy	Electrical
5	Bikaner, Rajasthan	Plain/Urban	Arid	Electrical
6	Solan, Himachal Pradesh	Urban	Cold, Sunny	Electronics
7	Vizag, Vishakhapatnam	Urban	Hot, Humid	LET&F
8	Cuttack, Orissa	Coastal	Warm & Humid	P & M
9	Ankleshwar, Gujarat	Urban	Hot & Dry	Chemical
10	Gandhinagar, Gujarat	Urban	Hot & Dry	Information Technology
11	Panaji, Goa	Coastal	Warm & Humid	Hospitality Management
12	Pusa, Delhi	Plain/Urban	Semi Arid	Automobiles
13	Hissar, Haryana	Plain/Urban	Semi Arid	Fabrication
14	Karnal, Haryana	Plain/Urban	Semi Arid	Leather
15	Pondichery, Tamilnadu	Rural	Warm & Humid	Plastic Processing
16	Ambarnath, Mumbai	Urban	Warm & Humid	Refrigeration & A.C Maint.
17	Dadar, Mumbai	Urban	Warm & Humid	Apparel Sector
18	Mahd, Maharashtra	Urban	Warm & Humid	Chemical
19	Coimbatore, Karnataka	Urban	Warm & Humid	Upgraded - P & M

Some important parameters that were assessed during the field survey include location and site planning; accessibility; building design and maintenance (particularly materials used, ventilation, lighting, fire safety); drainage/water logging; provision and maintenance of basic facilities (water, sanitation and waste disposal); repair work practices; availability of class room and laboratory/workshop space per student; resource consumption (energy and water) and; over-all ambience and cleanliness in the campus.

A structured questionnaire was used by a team of experts consisting of qualified and experienced planners, architects, engineers and geographers. The research team was divided into three groups and these groups visited selected ITIs, to investigate the key environmental, health and safety issues.

Key Findings

The major environmental issues, as identified from the field survey and consultation process with various stakeholders, pertain to:

- a. Poor site planning and design issues (location/site planning/accessibility/design)
- b. Lack of proper maintenance of buildings and associated services
- c. Improper resource consumption issues

- d. Lack of environmental augmentative measures
- e. Issues pertaining to compliance with the national standards/guidelines

The review of legal provisions, codes and guidelines revealed that while some provisions are being largely adhered to (such as built-up space available per student), some other like siting (location in flood prone areas), use of appropriate construction material, fire safety, access requirement for physically challenged and provision/use of safety gear need attention.

The review of the existing curriculum revealed that even though the course contents has been revised recently, the content and coverage of EHS issues is not sufficient. The industry-level consultation exercise at various locations also highlighted the need for an improved curriculum with national or global norms of occupational health and safety and environmental management practices.

Consultation with Stakeholders

Consultation with various stakeholders was carried out as a part of the EA/EMF exercise through interviews, formal and informal discussions. The stakeholders consulted at the local level include ITI management (Principals, Faculty and other staff); current students; recent graduates; senior and middle level managers/representatives of the industry. The draft EMF recommendations were also presented in a national level workshop organized during January 2007, where the officials of DGE&T, World Bank, concerned state directorates and the representative of national level industries associations such as CII and FICCI participated. Based on the feedback received during this workshop, the draft EMF report was revised.

Environmental Management Framework

Based on the review of national standards and field assessment, an EMF has been developed for the project. Appropriate measures have been suggested and developed in the Environment Management Framework (EMF) to minimize and mitigate the likely adverse environmental impacts associated with the project.

The EMF prepared for the project comprises of the following components:

- a. Framework for Compliance with the existing national standards/norms
- b. Framework for upgrading/construction activities
- c. Frame work for better campus environment management
- d. Institutional arrangements for implementation and compliance monitoring
- e. Budgetary requirements for EMF implementation
- f. Public disclosure policy

The framework provides a useful set of measures, which would help in preventing, minimizing and/or managing various environmental, health and safety concerns faced during construction, operation and maintenance of ITIs. This includes: (a) measures for Campus Environmental Management; (b) inclusion of environmental, health and occupational safety aspects in the curriculum and; (c) Documentation of good practices to promote awareness, knowledge and ensure wider recognition of environment management practices related to design, construction, maintenance and operation of ITIs.

Institutional Arrangements

The DG E&T, MoLE will assume the overall responsibility for adequate maintenance of the personnel and resources required to supervise, monitor and implement EMF.

Management of environmental aspects in the project shall be addressed by adopting the arrangements as suggested in Table E-2.

Table E-2 : Institutional Arrangements for the Project

Level		Composition	Key Tasks / Responsibility	Remarks
Central Level	NPIU	One Deputy Director Level Officer to be designated as Nodal Environment Officer.	<ul style="list-style-type: none"> Over-all responsibility for implementation of EMF. Disclosure of Documents. ToR Preparation for appointment of Consultant/s. Organize capacity building/training programmes. Organize cross-learning workshops. Publication of Green News Letter. Establishment and operation of Environment Challenge Fund. Interaction and co-ordination with industry representatives and other stakeholders. Reporting and documentation. 	Responsible for organizing and coordinating all Environmental Management Activities related to the project at the NPIU Level.
		One full-time consultant to be designated as Nodal Environ. Specialist.	<ul style="list-style-type: none"> Assist Nodal Environment Officer in all of the above listed tasks. Site supervision and monitoring to check EMF compliance. Train and sensitize SPIUs and ITI staff on Environment Management Aspects. 	Initial appointment i for one year; term to be extended, if required
		One Deputy Director Level Officer – IDP Officer for Curriculum Development	<ul style="list-style-type: none"> Over-see, review and monitor development and integration of environmental awareness/ management concepts in the curriculum revision. Co-ordinate with Nodal EO and other concerned stakeholders on matters pertaining to curriculum revision. 	Trade Committees to review and certify the adequacy of revised curriculum w.r.t. integration of EM aspects
		One short term consultant to be designated as Training Specialist.	<ul style="list-style-type: none"> Undertake Training Needs Assessment. Prepare Training Plan. Develop Training Material. Conduct Training Programmes for Master Trainers/Instructors and Others. 	Feedback from the NPIU, SPIUs, Trainees and stakeholders from the Industry.
State Level	SPIU	One ADT Level Officer to be designated as State Environment Officer.	<ul style="list-style-type: none"> Screening of projects. Over-all responsibility for implementation of EMF and compliance of contractual obligations. Supervision and monitoring of EMF compliance at the ITI level. Reporting and documentation on EMF compliance to NPIU. Interaction and co-ordination with industry representatives and other stakeholders. 	Responsible for organizing and coordinating all Environmental Management Activities related to the project at the State Level.
		Short term consultant/s for specific jobs (Environ. Expert; Civil Engineer; Architect etc.)	<ul style="list-style-type: none"> Undertake/assist Nodal State Environment Officer on allotted tasks (as per the scope of work defined in the Terms of Reference). 	Hiring/out-sourcing, if required on case to case basis for specialized work.
Local Level	ITI	Principal	<ul style="list-style-type: none"> Implementation of EHS measures as identified in the EMF including EMS. Environment awareness campaigns. 	Responsible for all Environmental Management Activities at the Institute Level.

Additionally, services of an Environmental Auditor will be procured for independent EMF compliance review. This review will be conducted at the end of second and fourth year of project implementation using a good/well defined representative sample.

Training and Capacity Building

A robust training and capacity building plan would be required to ensure effective implementation of Environmental Management Framework on the ground. Some key elements for capacity building in this regard are summarized in Table E-3.

Table E-3: Key Elements of Capacity Building Plan

Training Module	Level	Key Areas to be Covered	Duration	Target Group
Module 1.0	<ul style="list-style-type: none"> Awareness 	<ul style="list-style-type: none"> Environmental Issues Basic Concepts of EMF Legal Requirements Communication Strategies Public Disclosure 	½ day to 1 day	DG E&T officials and State Directors
Module 2.0	<ul style="list-style-type: none"> Awareness Knowledge 	<ul style="list-style-type: none"> Environmental Issues Basic Concepts of EMF Legal Requirements Communication Strategies Environmentally sensitive layout and design Green Building / Eco-Housing concepts Environmental Augmentative measures Green Construction Management 	2 days	Officials of the State Directorate; Master Trainers/ Instructors
Module 3.0	<ul style="list-style-type: none"> Awareness Knowledge 	<ul style="list-style-type: none"> Environmental Issues Basic Concepts of EMF Legal Requirements Green Construction Management EHS aspects in Campus Management 	2 days	ITI Principals, Heads /Faculty and Associated staff

Budgetary Provisions

Budgetary provisions to facilitate EMF implementation have been summarized in Table E-4.

Table E-4: Over-view of Budgetary Provisions for EMF Implementation

S. no.	Level	Total Budget Provision (in INR)	Purpose
1	DG E&T / NPIU Level	74,24,400	Staffing, Capacity Building and Related Expenses; Publication of News Letter; Best ITI Challenge Fund.
2	State Directorate / SPIU Level	4,50,000	Specific short term consultancy requirements and Env. Training
3	ITI Level	50,000	Environmental awareness and related activities

Note

- Expenditure for environmental training will be covered under over-all training budget of the project.

- Provision of features like ramps, garbage collection facility, fire safety arrangements, provision of Personal Protective Equipment etc. has not been included here. These will be covered as a part of the institute-level civil works/IDP proposals/equipment procurement component (as appropriate). The detailed checklists on incorporation of planning/design aspects will clearly identify such specific requirements.

Key Recommendations

Some key suggestions provided to improve the quality of living and working environment in an ITI campus include:

A. Campus Environment Management Measures

- (i) Improvement of campus environment through provision/maintenance of better sanitation, drainage, water, power, first aid, personal protective equipment (as relevant to specific trades), waste collection and disposal arrangements, proper storage of hazardous and inflammable materials/chemicals and barrier free access for students with disability.
- (ii) The campus environment management plan may also consider landscaping and tree plantation for overall aesthetic improvement.
- (iii) Use of appropriate and environment-friendly materials in civil works.
- (iv) Use of environment-friendly construction technology.
- (v) Adoption of safe construction/repair practices.
- (vi) Top-soil stripping, stacking, preservation and re-use, where new construction would be taken-up under the project.
- (vii) Promote environmental augmentative measures like re-use/recycling of materials; rain water harvesting, electricity saving devices etc.
- (viii) Design of services and buildings/or a part thereof (if necessary) to achieve maximum efficiencies etc.

B. Integration of Environment Management Aspects in the new curriculum/syllabus being developed by CSTR

C. Awareness generation on environmental management aspects through the documentation and disclosure of 'good practices'.

Depending upon the activities proposed in the Institutional Development Plan (IDP), the appropriate measures as suggested in the EMF would apply on a case to case basis. The major EMF recommendations have been categorized as follows:

- (i) Short Term Actions: (a) National level training and capacity building for effective environmental management; (b) Development trade-specific EHS course contents; (c) Implementation arrangements for environment management at the DGE&T and State Directorate level; (d) Planning, implementation and supervision of measures suggested in the EMF and; (e) Reporting and Documentation.
- (ii) Long Terms Actions: (a) Integration of Environment Management Aspects in the new curriculum; (b) Setting-up of an Best ITI Fund for the ITIs to be upgraded; (c) Initiation of "ITI- Green Newsletter" for experience sharing.

Involuntary Resettlement and Related Issues

The project would not finance any major civil works but anticipates the construction of some extensions or additional facilities at existing institutions on land that is

already in their possession. Consequently, no land acquisition or involuntary resettlement is expected.

To ascertain this, a site review will be conducted by the State authority as part of all civil works preparation to ensure that (a) legal title to the site is clearly in the name of the institution or relevant authority; and (b) that the site is free of encumbrances, including squatters and encroachers, and that no one would incur a loss of residence or livelihood as a result of the proposed construction. In the event that any proposed construction site houses or provides livelihood to any person, an alternative site without any encumbrances would be sought and used.

Disclosure of Documents

The EMF report (English version) along with this executive summary (English and Hindi versions) has been uploaded on the DG E&T website (www.dget.nic.in). An advertisement was placed in the newspapers (one each in English and Hindi Daily) for public information in this regard. These documents have also been sent to the State Directorates.