

Chapter 5: Environment Management Framework

Based on the review of national standards, field assessment and consultation with stakeholders, an EMF has been developed for the project. The various issues identified during the primary survey and the issues emerging through the discussions with the various stakeholders have been used as the basis to evolve the EMF.

The **key issues** that emerged during the assessment are:

- 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.

The proposed framework includes a useful set of measures to minimize and mitigate the likely environmental, health and safety concerns during construction/ up-gradation, operation and maintenance of ITIs.

The EMF comprises of the following components:

COMPONENT A: Good practices for up-gradation of ITIs.

COMPONENT B: Implementation arrangements for compliance with national standards/ norms

COMPONENT C: Framework for better campus environment management

COMPONENT D: Environmental, health and safety concerns in the curriculum

COMPONENT E: Institutional arrangements for implementation, monitoring and supervision

COMPONENT F: Budgetary requirements for EMF implementation

COMPONENT G: Training, capacity building & public disclosure policy

COMPONENT H: Documentation of good practices

COMPONENT A

GOOD PRACTICES FOR UP-GRADATION OF ITIs

Environmental impacts of upgrading an ITI will depend on the nature and number of new trades, polluting if any, additional space requirement and renovation. The increase in the number of students will put additional pressure on the existing infrastructure including the workshops, laboratories and other amenities like toilets, drinking water, hostels etc. This also implies additional instructors and teaching staff. Such concerns are important because many of the ITIs are already under pressure and have limited resources to hire additional staff and upgrade the facilities.

Therefore it is recommended that the proposed up-gradation of ITIs should be preceded by a thorough assessment of their existing infrastructure and human resources. assessment would be done by the PWD before proposing any up-gradation works.

During up-gradation of an existing ITI, the following environmental good practices need to be incorporated into the proposal:

1. Location/ Site conditions
2. Site Layout and design
3. Site development
4. Building materials
5. Building and site services
6. Waste management
7. Building maintenance and housekeeping
8. Occupational health and safety

- Improve infrastructure to support additional students – eg, toilets, drinking water, classrooms, workshops
- Academic Schedule not to clash with existing class schedules
- Include environmental concerns in curriculum
- Facilities should not get overloaded.

1. LOCATION/ SITE CONDITIONS

The location of the ITI in the regional and local landuse context is an important factor that affects the environmental conditions of the site. ITIs are like mini-industries and they have the potential of polluting environmentally sensitive ecosystems. Also, ITIs are hub of activities with potential of health and safety risk to students and staff if the surroundings of the site are potentially hazardous.

Hence, during up-gradation of an ITI, the location needs to be assessed for any environmental concerns and proper mitigation measures need to be taken.

- Good connectivity to habitation, industries & public transport
- Mitigate damage to sensitive locations
- Avoid hazard zones
- Respect site topography

1.1 ASPECTS TO BE ENCOURAGED:

- Ease of access from surrounding towns/ villages/ habitation areas
- Good connectivity to industries
- Good connectivity to highways and public transport nodes

MEASURE:

Any obstacles causing inconvenience to students and staff for reaching the ITI like, road linkages, distance from railway station/ bus station, improper river crossing, etc. should be brought to the notice of the State Project Implementation Unit in the audit report.

1.2 ENVIRONMENTALLY SENSITIVE LOCATIONS:

If the ITI campus is located within 100 m distance of any environmentally sensitive locations like:

- Protected/ declared forest area
- River/ Pond/ Lake/ any surface water body
- Coastal zone
- Mangrove areas
- Bio-diverse zones

- Wildlife sanctuary/ tiger reserves
- Desert oasis ecosystems
- Mountain ecosystems
- Ground water exploited/ polluted zones

MEASURES:

There should be adequate measures proposed to prevent or reduce impact on the sensitive ecosystem due to the ITI activities. Following are the activities that need to be monitored to prevent damage:

1. Approach road and parking areas
2. Waste water disposal
3. Consumption/ withdrawing of water
4. Air emissions from laboratories
5. Noise from the laboratories and other activities
6. Disposal of solid and hazardous waste

1.3 POTENTIALLY HAZARDOUS LOCATIONS:

If the ITI campus is located within 100 m distance of any of the following potentially hazardous locations like:

- River flood plain
- Steep slopes prone to landslides
- Cyclone, tsunami prone coastal areas
- Earthquake prone zones
- Municipal/ Hazardous waste disposal site
- Fire hazard areas like industries
- Noisy locations like near highways

MEASURES:

There should be adequate measures taken to protect the ITI campus from any hazard or risk that the location poses for the students and staff in the campus. Following mitigation measures are recommended:

	LOCATION	SUGGESTED MITIGATION MEASURE
1	River flood plain	Flood control measures like, check dams, bunds, etc.
2	Steep slopes prone to landslides	Slope stabilisation and erosion control measures
3	Cyclone, tsunami prone coastal areas	Tree barriers, temporary light structures
4	Earthquake prone zones	Building to incorporate earthquake resistant construction technology
5	Municipal/ Hazardous waste disposal site	Tree barriers, odour control measures, monitor ground water usage
6	Fire hazard areas like industries	Adequate fire safety equipment and escape routes to be provided
7	Noisy locations like near highways	Tree noise barriers, window seals, other acoustic controls

2. SITE LAYOUT AND DESIGN

The site layout and building design is also crucial to the institute and its performance besides the factors of eco friendly performance which would include energy efficiency, building services, materials of construction, natural light and ventilation, insulating and other factors. The better and more efficient a design for the internal functions the better the performance. The building will also contribute greatly to the safety and health aspects including occupational safety, the safety of the occupants in case of emergencies like earthquake, fire for easy, fast and safe evacuation.

The building design should be responsive to the local climate. The buildings that are in hot and dry climatic should be designed to be passive to heat gains and cardinally oriented so as to reduce the heat gain and direct heat ingress into the building through the walls and openings, a lot of shading elements on the west wall may also be welcome. Similarly, the buildings in a colder climate should be designed to increase the heat gain and also insulate it against heat losses. The other buildings that are in earthquake zones should be designed with proper attention to earthquake safety,

- Provide shading using trees
- Design as per standards
- Maintain the min. mandatory distances between as per the local building by-laws
- Natural Light & Ventilation
- Barrier Free planning
- Boundary Wall
- Energy efficiency
- Escape routes
- Green Building Codes
- Escape Routes
- Signage

safety codes and also escape routes in case of emergency. In case of cyclonic zones it must be taken into account for the roofs and the anchoring of the roofs against the cyclone.

The **building materials** should also be taking into account all these factors, the chosen for construction should be local materials as far as possible to reduce its impacts. The materials used should be friendly to the climate and environment around. The materials like asbestos for roofing should be avoided. The use of substitute to wood should be promoted and solid wood doors can be substituted with substitute wood materials like blockboards, plyboards, particle boards etc. The materials like aluminium and steel may also provide good substitutes to the wooden partitions, doors and windows in many cases. Most of the locations have local sand stone or other stones and these can be easily used for the construction purposes.

The **disable friendliness** of the building designed should also be taken into account with appropriate attention. Special provision for ramps and other access routes, toilets, etc for the differently-abled should be included at the design stage.

- Avoid carcinogenic materials like ACC
- Use locally available stones and other materials
- Promote Wood substitutes/Fly ash
- Promote Energy efficient devices/CFL lamps

RECOMMENDATIONS FOR SITE PLANNING

Activity	Recommendations
Landscaping	<ul style="list-style-type: none"> • Landscape design should promote and create habitats conducive to native fauna. • Existing vegetation on site should be preserved. • Land with rich biodiversity should be preserved.
Topsoil	<ul style="list-style-type: none"> • Removed topsoil should be reused for landscaping • Soil erosion need to be prevented for large sites during construction by providing sedimentation basin, contour trenching etc.
Afforestation	<ul style="list-style-type: none"> • Compensatory depository afforestation needs to be done in the campus premises.
Site Drainage	<ul style="list-style-type: none"> • Existing drainage pattern should be surveyed and documented. The proposed drainage pattern should follow the existing drainage pattern.
Utility systems	<ul style="list-style-type: none"> • Utility systems namely sewage, power, water, telecommunication an storm water near corridor areas need to be placed in

	<p>proper way to prevent interference and contamination.</p> <ul style="list-style-type: none">• All electrical systems should meet minimum efficiency criteria as specified by energy conservation building code (motors, machines transformers etc).
Heat Island	<ul style="list-style-type: none">• Site need to be planned properly to mitigate the heat island effect (Thermal gradient difference between developed and undeveloped areas) by following measures:<ol style="list-style-type: none">1. At least 40% of the non-roof impervious surfaces on the site (including parking lots and walkways) should be shaded2. 50% of parking area can be provided underground3. Pavements and walkways should be painted in light colour (solar reflectance index > 0.5)
Toxic Runoff	<ul style="list-style-type: none">• Runoff from construction areas and from workshop areas should be collected separately to avoid mixing with natural storm water runoff.• Adequate measures should be taken for spill prevention and control.

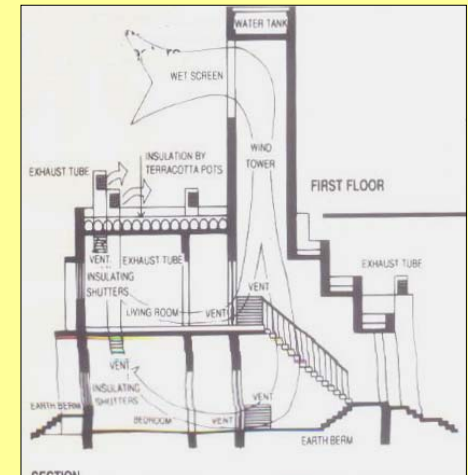
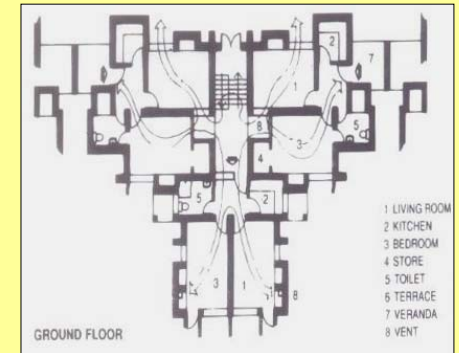
A Case of Solar Passive Building

This is a case of solar passive hostel in university of Jodhpur. The technical explanation is as below:

Evaporative cooling is out since there's little water available in this area. So massive structure and air gap in the roof for insulation, reflective external finishes, deep sunshades and a wind tower to create cool breeze were incorporated.

An experimental evaporative cooling system of wires along which water is distributed, is installed on the wind tower. The wind tower faces the wind direction, and is located above the staircases to minimize the costs. The cool air caught from the south west by the tower is distributed throughout the building. Walls are of local light-coloured stone, roofing, staircase, partition and lintel over windows.

Roof insulation is provided by the tradition method of inverted terracotta pots lining the stone slabs of the roof, with intervening spaces filled by lime concrete. As far as possible, south facing windows are provided in all room since students are away in the hot summer vacation and winter comfort is more important. Solid timber shutter, often with glass are provided to prevent heat loss during the night. Hot water is provided by common array of solar water heaters.



3. SITE DEVELOPMENT

Site development involves a whole set of activities many of which are noisy and disturbing and also at times polluting. The construction activities generate a lot of debris also and they need to be handled properly, a proper handling and disposal needs to be done. The activities that are noisy should be carried out during the daytime and night construction should be avoided in places which are close to residential areas. The construction labour also has children along with them and proper barricading of the construction areas, and provision for the day care facilities for the children must also be provided. The other important issue will also be the scheduling of the construction activities for so that the routine classes are not disturbed.

Some Recommendations

- Construction safety measures should be adopted as per draft National Building code part 7.
- All labourers should comply to the minimum age limit of 18 years
- Provide minimum level of sanitation for construction workers on site as per DC Rules
- On-site reuse of surplus construction materials should be provided. Recycling of materials should be maximized.
- Measures should be adopted to control level of suspended particulate matter during construction.
- Measures should be adopted to ensure that ambient noise standard as specified by the CPCB is not exceeded beyond site limit, due noise generated by construction activity.

An integrated design team can be setup, with experts from different background like architecture, structural, electrical, mechanical engineers, plumbing experts and environmental consultant. Climate responsive design practices should be adopted to achieve thermal comfort as specified in National building code part 8. Design and construction for new ITI Buildings or up gradation of old ITI buildings should take care of some parameters to make its building more energy and resource efficient, those parameters and recommendation are given in Annex V.

4. **BUILDING MATERIAL**

The construction of the buildings and its materials of construction play a significant role in the building and its performance when measured in any terms starting from the finish to the longevity. The building and its materials decide the buildings response to the climate, and in turn the energy required by the building. ITIs can adopt stronger energy standards for new construction and renovation projects. Many of these steps will have a positive payback. Areas to consider include high performance windows, solar design, day lighting, efficient heating and cooling systems, and building orientation.

In case of the already upgraded ITIs, it was observed that the standard construction materials are being use. This may be due to the involvement of state PWDs in the construction of these new facilities. In general, PWD follows that standard schedule of rates (SOR), where the specifications and item rates for the newer materials are not included. This is a major drawback of all PWD driven constructions.

Table A - 4.1 RECOMMENDATIONS FOR BUILDING MATERIALS

Activities	Recommendations
RCC and still systems	<ul style="list-style-type: none"> • Use of pozzolona material blended Portland cement can be made mandatory as base material for RCC and still systems. • Sand and aggregates from pulverized debris and/ or sintered flyash for concrete and mortar should be used wherever available. <p>Use of recycled still forms and bars for reinforcement should be promoted.</p>
Alternative structural systems	<p>Structural system can be designed and constructed using following alternative technologies</p> <ol style="list-style-type: none"> 1. Ferro cement and / or precast components for column, beams, slabs, staircases etc. 2. Ready Mix concrete, resinous curing agents
Masonry	<p>Use bricks / blocks made from the following materials individually or in combination</p> <ol style="list-style-type: none"> 1. Fly ash + sand + lime bricks / blocks (IS 4139) 2. Pulverized debris + cement bricks / blocks, Industrial waste based bricks / blocks, aerated light weight BPC concrete blocks (IS 2185) <p>Phospho –Gypsum based blocks (IS 12679) and Lato blocks (laterite cement; IS 12440)</p>

Activities	Recommendations
Mortar	Sand from pulverized debris and / or sintered fly ash Increase of pozzolana material content in BPC
Plastering	Any of the following alternative plasters can be used <ol style="list-style-type: none"> 1. Calcium silicate plaster 2. Cement plaster (sand for plaster as per IS 1542) 3. Fiber reinforced clay plaster / Phospho-gypsum plaster / Non-erodable mud plaster 4. Resinous curing agent instead of water
Roofing and Ceiling	Use the following eco-friendly material for roofing <ol style="list-style-type: none"> 1. Fiber reinforced polymer (FRP) instead of PVC, Foam PVC, Polycarbonates, acrylics etc. 2. Micro concrete roofing tiles / Bamboo Matt Corrugated roofing sheets
Windows, Doors and Openings	Ferro cement and pre-cast RCC lintel (IS 9893), Chajja and Jails instead of RCC should be used. Timber and Aluminium / Steel frames can be replaced by <ol style="list-style-type: none"> 1. Ferro cement and Pre cast RCC Frame (IS 6523) 2. Hollow recycled steel channels (IS 1038, 7452), and recycled aluminium channels (IS 1948) Timbers if used for shutters and panels must be renewable timber from plantations with species having not more than 10 year cycle for timber. MDF Board (IS 12406) can also be used instead of timber, plywood, glass. PVC/ FRP doors (IS 14856) should be used in wet areas.
Electrical	<ul style="list-style-type: none"> • Used unplasticised PVC or RDPE products instead of Aluminium, Brass, PVC, GI and SS. Products with recycled Aluminium and Brass components can also be used wherever applicable.
Plumbing	<ul style="list-style-type: none"> • Use RCC, unplasticised PVC (IS 15328), GI, CI pipes instead of lead, AC pipes. • Where applicable use products with recycled aluminium and brass components for fitting fixtures and accessories. • Use polymer plastic (ISO EN 15874) hot / cold water systems instead of G.I.
Waterproofing	<ul style="list-style-type: none"> • Use Epoxy resins instead of Tar felt/ Pitch.
Paint / Polish	<ul style="list-style-type: none"> • Use cement paints (IS 5410) / Epoxy resins paints for external surfaces. Use water based paints, enamels, primers and polishes.

Table A - 4.2 COMPARATIVE COST OF ALTERNATIVE BUILDING MATERIALS

Masonry work Material	Cost (Rs/Sq.ft.)	Cost Deviation(%)		
		75% brick + 25% alt.	50% brick + 50% alt.	25% brick + 75% alt.
Fired Clay Brick		Base	Base	Base
Fly Ash + Sand + Lime	1007	+21	+42	+63
Pulverized Debris based	1851	+7	+15	+21
Industrial Waste based	1300	+21	+42	+63
Roofing Material		Cost Deviation (%)		
		50 % G.I. + 50 % Alt.		25 % G.I. + 75 % Alt.
Galvanised Iron Corrugated sheet on steel support	40	-4		-6
Mangalore Tiles on primary wood supports	48	+10		+15
PVC Corrugated sheet on steel supports	42	+2		+3
MCR tile on Primary wood supports	36	-5		-8
Bamboo material Corrugated sheet on Primary wood support	45	+6		+9
Alternative Roofing Material		Cost Deviation(%)		
		50 % Vitrified + 50 Alt.		25 % Vitrified + 75 Alt.
Vitrified Ceramic tile	75	Base		Base
Kota Stone, 30 mm thick-machine cut-one side polish	35	-27		-40
White Glazed Tiles(dedo)	15	-40		-60
Ceramic (non-vitrified) Tiles	30	-30		-45
Plain Cement Tiles	13	-41		-62
Flooring Material		Coat Deviation(%)		

Ready Mix Synthetic paint	115	Base
Synthetic Distemper	60	-48
Acrylic Distemper	68	-41
Oil paint (grade I)	130	+13
Cement Paint	55	-52
Epoxy resin System	340	+196

5. BUILDING AND SITE SERVICES

The building services like electrical, plumbing and drainage have the potential in providing the necessary environmental efficiency. The electrical fittings can be high performance devices, energy efficient devices like CFL Luminaries and other such devices.

The plumbing can be using low friction pipes reducing transmission losses. The water saving fixtures and fittings can be used to reduce the losses. More modern systems of plumbing can also be adopted.

The alternative and renewable sources of energy like solar can be used effectively for water heating, campus lighting, hostel corridors etc. The alternative systems of recycling of grey water can be adopted.

The solid waste management also has similar options for higher recycling which can easily be practiced in these institutes and role models for other institutes can be developed.

Any combination of these facilities in varying degrees will definitely lead to a better performance of these institutes in terms of the environmental friendly models. This can be taken a step further can turned into models.

- Use CFL lights
- Enhance use of renewable sources of energy

- Plumbing & Drainage Design as per SP-23
- More efficient faucets etc
- Use of water efficient faucets to reduce water consumption
- Recycling of Grey water in non-urban/peri-urban ITIs
- Solid waste segregation

Table A -5.1 RECOMMENDATIONS FOR RESOURCE CONSERVATION THROUGH BUILDING SERVICES

Activities	Recommendations
Water Supply / Sewerage	<ul style="list-style-type: none"> • Maintain uniform pressure by using separate distribution system for each floor. • All faucets and fixtures should be of low flow rate. • All WC to be used with dual flush system with lower flow rate. Install water meters in necessary places. • Exotic or Ornamental plants which require more water should be avoided. • Plant native / indigenous species with low water requirement. • Onsite recycled water (if available) can be used for watering the lawns. • Sprinklers should be used for watering the lawns. • Water consumption for outdoor use should be used. • Harvesting, storage / recharge of rainwater should be done to the maximum. • Treatment facilities for campus drinking water supply should be provided if the quality is not meeting IS standards. • Dual plumbing lines can be established to separate grey and black water. • Eco-friendly treatment system for combined stream of grey water and black water should be installed.
Outdoor lighting	<ul style="list-style-type: none"> • Renewable energy based (Solar PV, Biomass, Wind, Fuel Cells) lighting systems should be used wherever possible in walkways, parking and landscaped areas. • Use of fluorescent / compact fluorescent lamps (CFL) for general lighting of outdoor spaces and common / circulation areas namely passage, staircase, lifts, corridors, lobbies etc. should be encouraged.
Solar Water Heater	<ul style="list-style-type: none"> • Provide solar water heaters in all roofs, preferably in hostel buildings. • Provide solar water heater with non electric booster
Waste Management	<ul style="list-style-type: none"> • Separate bins should be provided for collection and separation of biodegradable, non-biodegradable and recyclable waste. • A separate collection system should be provided for hazardous waste like batteries etc. • A decentralized (onsite) treatment plant based on non-energy intensive and eco friendly technology (vermicomposting or anaerobic digestion) can be installed for the treatment of organic waste.

6. WASTE MANAGEMENT

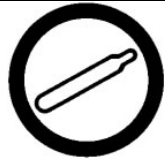






Hazardous materials—such as laboratory chemicals, chemical by-products, chemical handling supplies, paints, and solvents—can cause pollution and present risks to health, safety, and the environment. The improper use and disposal of hazardous chemicals have consequences on both the health of those who handle the material and those whose water, air, and land may be polluted by leaks, spills, and volatile emissions.

ITI campus community as individuals and the ITI as an institution need to be committed in seeking and employing waste minimization and pollution prevention measures to better manage the potential risks and responsibilities inherent in these activities. The following actions are recommended:

- Regulate all uses of hazardous waste in campus.
- Minimize the production of hazardous waste through education, inventory tracking, and intra-campus redistribution
- More permanent and detailed labeling (possibly with barcodes)
- Information on the substitution of alternative, safer chemicals at time of purchase
- Conduct on-site inspections, training and program reviews, and investigations of incidents.
- Oversee safe use of radioactive materials and radiation producing machines.
- Handle, transport, and appropriately dispose of hazardous waste materials.
- Establish a battery recycling program so that rechargeable (lithium, nickel-hydrate etc.) batteries are recycled rather than incinerated as hazardous waste or (in the case of alkaline batteries) taken to the landfill.
- Test, detect, abate and/or dispose of materials containing asbestos and/or lead.
- Develop contingency plans and procedures.



Safety Poster

	
Class A	Class B
	
Class C	Class D- Div 1
	
Class D- Div 2	Class E
	
Class F	
Levels for Hazardous waste Category	

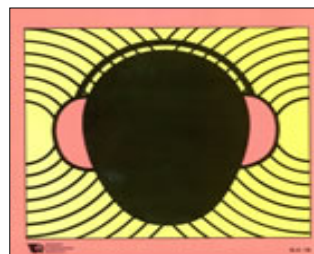
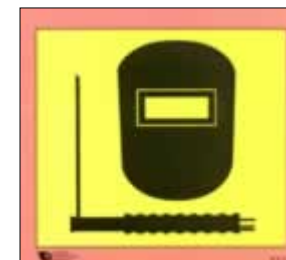
7. BUILDING MAINTENANCE AND HOUSEKEEPING

The activities in an ITI are diverse in nature, ranges from operation of laboratories, workshops, hazardous waste generating activities like auto repair etc. Thus, regular house keeping is an important subject for these ITIs. Present house keeping system depends on limited number of class IV employees. As a result, working environment in many of these ITIs are far below than the desired levels. In order to initiate a better house keeping regime, the EMF recommends initiation of **house keeping roster or log book** to record the cleaning maintenance activities on daily /weekly basis.

For the maintenance of the building, it is proposed that a smaller **maintenance budget** is sanctioned to each of the ITIs so that the urgent repairs are not delayed. The state directorate, in consultation with the state PWD, should develop an enabling mechanism in this direction.

Another pro-active mechanism would be to introduce the concept of **Environmental Management System (EMS)** in these institutes. EMS is an integrated system of communication with established training, responsibilities, and methods to address environmental issues and achieve environmental goals. It involves a continual cycle of planning, doing, reviewing, and improving the processes and actions associated with the organization's responsible environmental management. **EMS for an ITI will be a institution-specific system developed by the ITI on the basis of their specific requirements and capacity.**

THE DETAILED OUTLINE OF THE ENVIRONMENTAL MANAGEMENT SYSTEM IS OUTLINED IN COMPONENT C: FRAMEWORK FOR BETTER CAMPUS ENVIRONMENT MANAGEMENT



8. OCCUPATIONAL HEALTH AND SAFETY

Occupational health and safety can be taken care at two stages, namely a set of occupational health and safety measures for construction workers during up gradation of the ITI, and the general health and safety of ITI students in workshops.

GENERAL RECOMMENDATIONS:

- Ensure the health and safety of the employer's workers and other workers present at the workplace.
- Establish occupational health and safety policies and an OHS program.
- Provide general direction to management, supervisors and workers about their responsibilities and roles in providing a safe and healthy workplace.
- Provide specific direction and delegate authority to those responsible for health and safety.
- Provide workers with the information, instruction, training and supervision necessary to carry out their health and safety responsibilities.
- Provide and maintain protective equipment, devices and clothing and ensure that they are used.

RECOMMENDATIONS FOR HAZARD CONTROL:

- Identify potential hazards through regular inspections and either eliminate or control the hazards without delay.
- Remedy any workplace conditions that are hazardous to worker health or safety.
- Develop written safe work procedures.
- Encourage workers to express concerns and suggest improvements on health and safety issues, for example, through safety talks, meetings, or consultation with worker representatives.



SUBMITTAL REQUIREMENTS FOR CHECKING COMPLIANCE

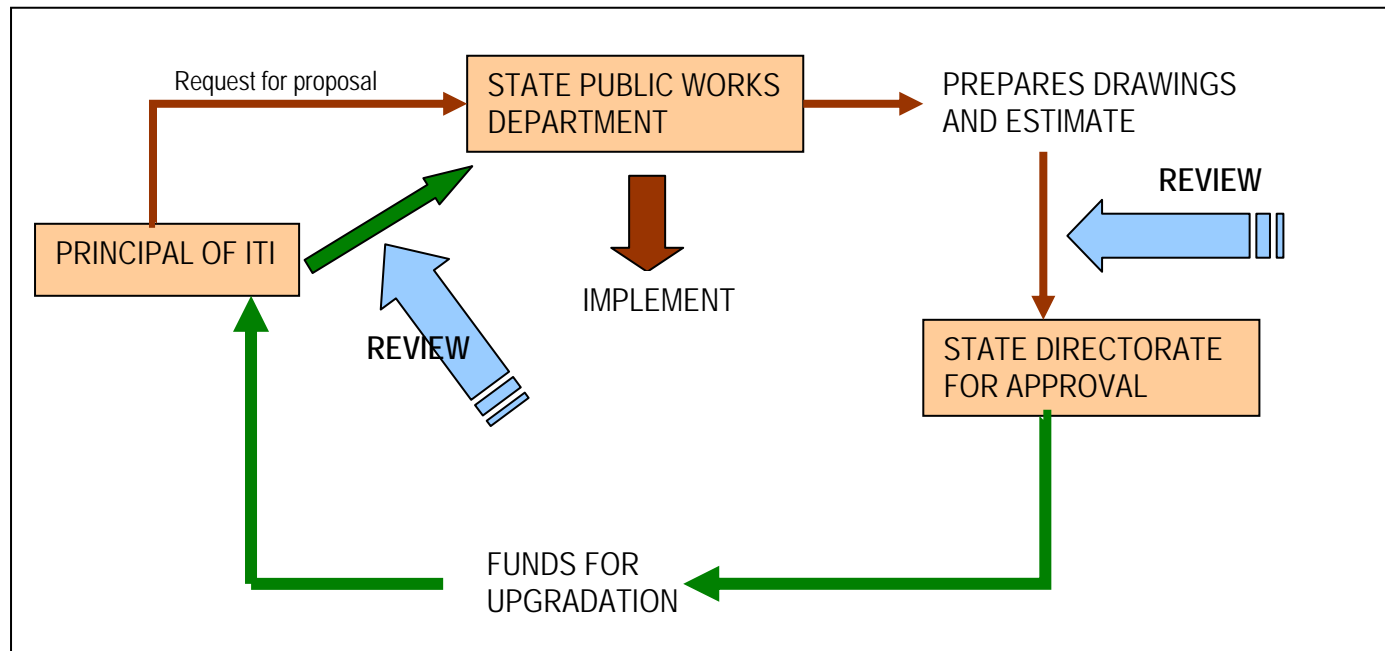
	Submittal Requirements for New ITIs	Submittal Requirements for Up- gradation	Responsible Agency
1. Location/ site conditions	Drawings showing the site plan, surrounding land use plan	Drawings showing the existing site plan, surrounding land use plan, proposed up gradation and improved accessibility measures	PWD
2. Site layout and design	Drawings showing: <ul style="list-style-type: none"> ▪ Site Plan showing the existing topography, vegetation cover ▪ Landscape design creating niche for the local flora and fauna and preservation of top soil and its nutrients during displacement ▪ Existing buildings/Structures/HT Line/Other Utilities ▪ Existing slopes and site drainage patterns ▪ Narrative description of measures to prevent soil erosion and management of storm water drainage 	Site plan drawing showing: <ul style="list-style-type: none"> ▪ Existing Buildings/Structures ▪ Existing slopes ▪ Site drainage pattern 	PWD
3. Site development	----	----	----
4. Building material	Specific clauses in construction agreement	Specific clauses in construction agreement	PWD
5. Building & site services	<ul style="list-style-type: none"> ▪ Luminous efficacy of each luminary type used ▪ Wiring diagrams for each ▪ Outdoor lighting ▪ Detailed Plumbing and Drainage plans ▪ Sewage disposal mechanism ▪ Solid waste management system and plan with narrative description ▪ Water consumption details 	<ul style="list-style-type: none"> ▪ Luminous efficacy of each luminary type used ▪ Wiring diagrams for each ▪ Outdoor lighting ▪ Detailed Plumbing and Drainage plans ▪ Sewage disposal mechanism ▪ Solid waste management system and plan with narrative description ▪ Water consumption details 	PWD

COMPONENT B

IMPLEMENTATION ARRANGEMENTS FOR COMPLIANCE WITH NATIONAL STANDARDS/ NORMS

The existing process of upgrading any ITI campus involves the principal of the institute, the state PWD and the state directorates. The PWD is the main responsible agency to prepare the drawings and estimate for the up-gradation proposal. The PWD claims that it duly undertakes a site analysis and ensures compliance to building codes and other norms. But the reality is that these claims are untrue. The up-gradation proposals, construction, maintenance and repairs works done by PWD are not compliant to the national norms and standards.

The process of upgrading any ITI is as follows:



In this existing process of proposal submission and release of funds, there is a need of environmental compliance review at two stages. First, at the stage of proposal drawings and estimate appraisal at state directorate and, second, at the stage of releasing funds for construction work.

1. CHECKING EXISTING COMPLIANCE OF ITI

For checking compliance of the existing ITI building and campus, the PWD are required to conduct a compliance review prior to preparing the up-gradation drawings and estimate. The reporting is to be done using FORM A given in Annexure II.

The FORM A is to be submitted with the proposal to the State Directorate.

2. CHECKING COMPLIANCE OF UP-GRADATION PROPOSAL (DRAWINGS & ESTIMATE)

For checking compliance of the up-gradation proposal, the PWD are required to submit a completed compliance form along with the up-gradation drawings and estimate. The reporting is to be done using FORM B given in Annexure III.

The FORM B is to be submitted with the proposal to the State Directorate.

3. CHECKING COMPLIANCE OF CONSTRUCTION ACTIVITIES

For checking compliance during the construction work at the ITI campus, the State Environment Officer is required to conduct a compliance review of the ongoing construction activities. The reporting is to be done using FORM C given in Annexure IV.

The form is to be used as a criterion for release of second installment of the fund.

4. CHECKING COMPLIANCE OF OPERATION AND MAINTENANCE ACTIVITIES AT THE ITI

For checking compliance of the operation and maintenance activities at the ITI, the PWD are required to submit a completed compliance form after completion of the up-gradation work. The reporting is to be done using FORM D given in Annexure V.

The FORM D is to be submitted one year after completion of the up-gradation work to the State Directorate.

COMPONENT C

FRAME WORK FOR BETTER CAMPUS ENVIRONMENT MANAGEMENT

1. ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

After upgrading an ITI to a Centre of Excellence, it is crucial to ensure that the campus environment is maintained and the new facilities and services provided during up gradation are managed well. To ensure sustainability of the environment management measures in future, there is a need to build a management system within the ITI.

The EMF proposes adoption of an Environmental Management system by each ITI. The EMS basically consists of four parts:

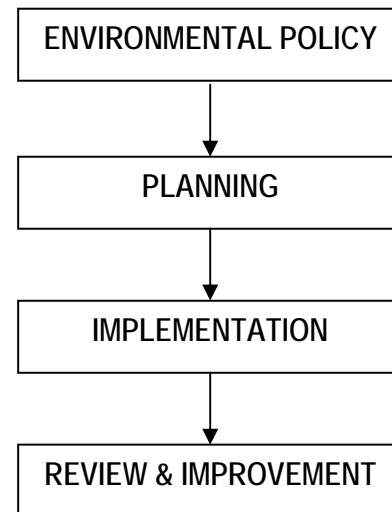


Figure C-1: Steps in an EMS

1.1 ENVIRONMENTAL POLICY

The intent of an environmental policy is to define the organization's commitment to the environment through continual improvement in environmental performance. A strong, clear environmental policy can serve as both a starting point for

developing the EMS and a reference point for maintaining continual improvement. The policy should be evaluated regularly and modified, as necessary, to reflect changing environmental priorities.

The environmental policy should, at minimum, address the following three topics:

1. Commitment to compliance with applicable environmental legislation and regulations
2. Pollution prevention
3. Continual improvement

1.2 EMS OBJECTIVES AND TARGETS

An **objective** is a goal that is consistent with the environmental policy, priority environmental aspects and impacts, and applicable environmental regulations. A **target** is a more detailed performance goal related to and supporting a specific objective. The objectives and targets represent the transition from planning to action. Participation is important in defining “realistic & achievable” objectives & targets. A reasonably detailed action plan should be prepared for each objective.

1.3 ROLES AND RESPONSIBILITIES

The EMS is a shared responsibility of each person in the ITI campus. Assigning roles and responsibilities to each person in the institution gives credibility and authority to the EMS initiative. The task of assigning responsibilities lies with the Principal of the ITI who is also the key person in this EMS initiative.

2. STRUCTURE FOR IMPLEMENTATION OF THE EMS

Broad representation from the students, faculty, maintenance staff and administrators is critical to success of the EMS.

There is a three tiered structure within the ITI to facilitate the implementation of the EMS.

Table C – 2.1: Structure for implementation of EMS

	COMPOSITION	ROLE
EMS TEAM	Staff (e.g., facilities, maintenance), Faculty, Students, Department heads, and Administrators	Responsible for day-to-day EMS activities
EMS STEERING GROUP	Small group of administrators and faculty	To provide (1) direction with respect to the breadth and direction of the EMS and (2) feedback to the EMS Team to ensure progress, effectiveness, and wise use of EMS resources.
EMS MANAGER	Principal of the ITI	Responsible for initiating and leading EMS implementation, Act as an information dissemination source for the internal communication

3. KEY STEPS TO UNDERTAKING THE EMS

Any ITI undertaking the formation of the EMS can follow these key steps:

STEP 1 **Conduct the external compliance audit (Refer COMPONENT A of this EMF)**

An assessment should be performed to identify:
(1) Current environmental management practices
(2) Low or non compliance areas

STEP 2 **Determine the scope for the EMS**

How to implement the initiative? What issues to prioritize and address first? Deciding the phase-wise implementation in departments?

STEP 3 **Communicate**

The EMS Initiative to faculty, students, and staff and invite Input.

STEP 4 **Formation of the EMS team**

STEP 5 **Identify and Discuss**

Important EMS Features among the EMS team to guide creation and implementation of the EMS.

STEP 6 **Start implementing**

Implementation of institutional EMS could be an important step to orient the students towards emerging best practices in the professional fields. It would be an important orientation to prepare them for national/international opportunities.

3. COMMUNICATION OF THE ENVIRONMENTAL MANAGEMENT SYSTEM

For ensuring effectiveness of the EMS system and fulfilment of objectives and targets, three types of communication are crucial:

- Internal communication within the ITI
- Intra – ITI communication within a zone.
- External communication with stakeholders

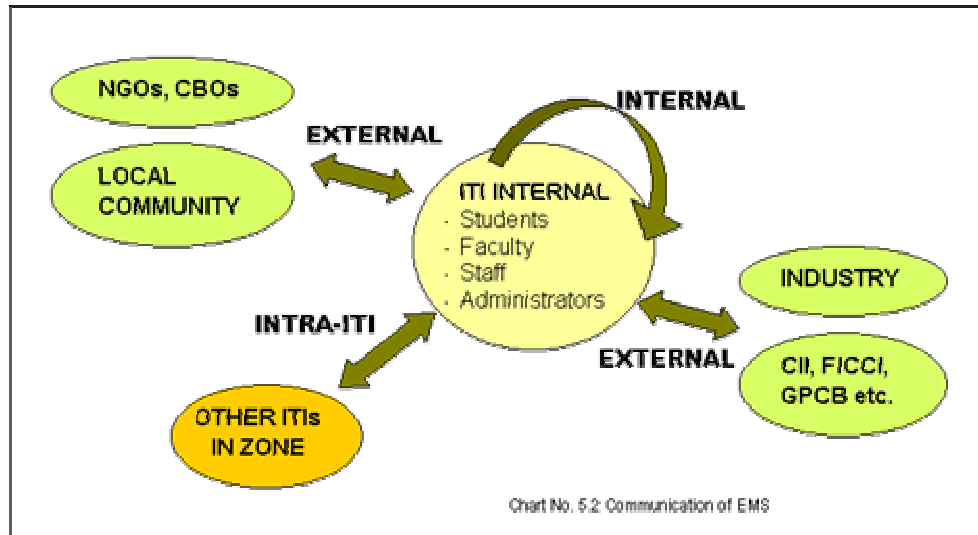


Figure C - 3.1

Internal communication involves explaining the environmental policy and objectives & targets and delegating roles and responsibilities to the students, faculty and employees.

Intra-ITI communication involves sharing experiences and good practices between different ITI s in a region. This would encourage healthy competition at regional level and promotion of Best ITI award.

External communication with interested parties such as regulators, lending agencies, local community members, alumni, and emergency responders interested in the environmental impacts of the ITI should be addressed and documented. By maintaining meaningful dialogue and a proactive approach with external parties, an ITI can fulfill its environmental policy and realize EMS objectives.

COMPONENT D

ENVIRONMENTAL, HEALTH & SAFETY ISSUES IN THE CURRICULUM

The EMF process included reviewing the existing curriculum during the case studies and found that even though the course contents have 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.

The present coverage of EHS issues in the curriculum is generic and delivery mechanism is weak. It is therefore, recommended to restructure the present course with specific thematic focus for different courses.

The findings from the consultations with the industry were that following topics need to be added into the present course curriculum:

- Increased Coverage of Environmental, Health, Occupational Safety Issues
- Environmental Management Systems (ISO 14000 to 18000)
- Cleaner Production
- Good House Keeping
- SHE/OSHAS
- ECOTEL (for Hospitality Industries)
- GREEN Building (For Construction)

Hence there is a need for an EHS course for all students in the ITIs and some trade-specific topics need to be added into the present courses.

1. TOPICS COMMON TO ALL STUDENTS:

There is a need to develop a conceptual knowledge base of all the students enrolled at the ITI about environment, health and safety. This course in EHS can be combined with the existing social science studies course being delivered in the ITIs.

The EHS course must aim at providing a basic awareness of the environmental and labour laws and legislations existing in the country and the applicability to their trades. There is also a need to explain the basic concepts of Environment management systems, energy efficiency, cleaner production and good housekeeping to the students. Awareness about such issues would give the students competitive edge for jobs in multi-national industries and other countries.

It is also important to give some practical knowledge and awareness about EHS to the students that they can apply when they start their jobs/ventures.

THEORITICAL KNOWLEDGE	LEVEL	PRACTICAL KNOWLEDGE	LEVEL
1. ENVIRONMENT		1. ENVIRONMENT	
Indian laws and acts related to protection of the environment: a. The Environment (protection) Act, 1986 b. The Air (prevention and control of pollution) Act, 1981 and Rules c. The Water (prevention and control of pollution) Act, 1975 and Rules d. Municipal Solid Wastes (Management and Handling) Rules, 1999 e. Hazardous Wastes (Management and Handling) Amendment Rules, 2002 f. The Batteries handling rules	Basic awareness about legislation and applicability to their trade	Preventing air, water, soil and noise pollution in day to day work Visits to industries following good practices in pollution prevention, energy efficiency and good housekeeping.	Practical display of good practices
Introduction to the basic concepts of Environmental Management Systems (ISO 14000 to 18000)	Basic awareness with examples		

Introduction to concepts of energy efficiency	Basic concepts and its importance		
Introduction to concepts of cleaner production	Basic concepts		
Introduction to good housekeeping	Concept building		
2. OCCUPATIONAL HEALTH AND SAFETY		2. OCCUPATIONAL HEALTH AND SAFETY	
Introduction to SHE and OSHA	Basic awareness and applicability	Basic health and safety devices and their practical use and importance of using them	Practical display of usage
Awareness about the labour laws: a. The Factories Act, 1948 b. The Child Labour (Prohibition and Regulation) Act, 1986 c. Interstate Migrant Workmen's (Regulation of Employment & Condition of Service) Act, 1979 d. Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996	Basic awareness about legislation and applicability to their trade	Fire safety equipment – importance and usage First aid provision	Practical display of usage Practical display by nurse/doctor

2. TRADE-SPECIFIC TOPICS FOR HIGH POLLUTION POTENTIAL TRADES:

There are certain trades with high pollution potential that need inclusion of specific themes in the course. This can be delivered as trade specific compulsory elective subjects.

S.No.	TRADE	SUGGESTED TOPICS
1.	Electrical	<ul style="list-style-type: none"> ▪ E-waste management (WEEE directive from EU), ▪ extended producer responsibilities, ▪ Hazardous waste management (ROHS directive from EU), ▪ Energy conscious design
2.	Electronics	
3.	Hospitality	<ul style="list-style-type: none"> ▪ ECOTEL principles ▪ Waste management (composting, recycling, biogas) ▪ Good housekeeping practices ▪ Environment management systems (ISO 14000) ▪ Quality management systems ▪ Energy Management
4.	Plastic Process	<ul style="list-style-type: none"> ▪ MSW Rules ▪ Hazardous Waste Management Rules ▪ Air act ▪ Principles of Reduce/Reuse/Recycle ▪ Cleaner production techniques
5.	Chemical	<ul style="list-style-type: none"> ▪ MSIHC Rules, ▪ Hazardous Waste (M&H) Rules, ▪ Air (P&P) Act, ▪ Water (P&P) Act
6.	Food Process	<ul style="list-style-type: none"> ▪ Good House Keeping ▪ WHO guidelines ▪ MSW rules ▪ composting, recycling, biogas
7.	Refrigerator & Air conditioning	<ul style="list-style-type: none"> ▪ Global Warming/Ozone Depleting Substances, ▪ Hazardous waste management ▪ Energy Management
8.	Automobiles	<ul style="list-style-type: none"> ▪ Vehicular Pollution Norms/Standards (Bharat Norms/SIAM guidelines ▪ Cleaner Energy (Lead Free, CNG, Bio-Disels, Occupation Safety guidelines)
9.	Leather	<ul style="list-style-type: none"> ▪ Cleaner production and leather waste (solid / liquid) ▪ Water pollution prevention and treatment ▪ Hazardous waste management

10.	Fabrication (welder/ tuner)	<ul style="list-style-type: none"> ▪ Occupational Safety Practices ▪ Good House Keeping Measures ▪ Hazardous Waste Management Rules
11.	Civil	<ul style="list-style-type: none"> ▪ Green Building Guidelines ▪ Solar passive building ▪ Eco Housing principles ▪ National Building Codes 2005 ▪ Climate responsive architecture principles

It may be noted here that the suggested topics are merely indicative. The content and delivery mechanisms need to further detailing so as to integrate with the present delivery system and respond to industry needs.

However, while delivering these issues, the IQ level of these ITI students needs to be understood, as most of them come after clearing Senior Secondary Certificate Examination (Class 10).

3. PROCESS FOR CURRICULUM REVISION

The existing curriculum being followed at the ITIs needs to be revised to incorporate the suggestions of the EMF and updated with the latest technology being used in the industry. The curriculum revision would be done in consultation with the industry and the trade community.

The CSTRI has been given the task of developing the new curriculum for the ITIs. An IDP officer for curriculum development (Deputy Director level) at NPIU level has been assigned the responsibility to:

- Over-see, review and monitor development and integration of environmental awareness/ management concepts in the curriculum revision.
- Co-ordinate with Nodal Environment Officer and other concerned stakeholders on matters pertaining to curriculum revision.

The Trade Committees will review and certify the adequacy of the revised curriculum developed by CSTRI with respect to integration of Environment Management aspects.

COMPONENT E

INSTITUTIONAL ARRANGEMENTS FOR IMPLEMENTATION AND COMPLIANCE MONITORING

For Implementation of the proposed EMF, appropriate institutional structure would be essential from the Central level till the level of an ITI. A possible stakeholder matrix is developed to understand the various roles, responsibilities and communication requirements:

Table E-1: Stakeholder Analysis Matrix

	Key Stake holders	Secondary Stake Holder	Other Stakeholders
Central Level	DGE&T	MoLE, MoEF, CPCB, CPWD	CII, FICCI, Chamber of Commerce
State Level	State Directorate	SPCB, State PWD, DRDA, State Education Department	State CII, FICCI. State Chamber of Commerce, Large NGOs working in the field of Livelihood
Local Level	ITI	Panchayat/ULB, PWD District Education, District Industries Commissioner ate	Local Industries, NGOs/CBOs, Community At Large

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-3

FIELD TESTING OF THE PROPOSED EMF

It is also recommended that field-testing of the proposed EMF should be taken up for all identified geo-climatic region (at least one ITI per region). Learning from such field-testing would enhance the proposed EMF for application of larger IVTI interventions. Tentative budget for field-testing has been proposed in next chapter.

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.

For effective implementation of the proposed environmental management framework, a three-tier approach is proposed:

- NODAL PROJECT IMPLEMENTATION UNIT (NPIU) AT CENTRAL LEVEL
- STATE PROJECT IMPLEMENTATION UNIT (SPIU) AT STATE LEVEL
- PRINCIPAL to act as ENVIRONMENT MANAGER AT ITI LEVEL

Figure E – 2: Institutional framework

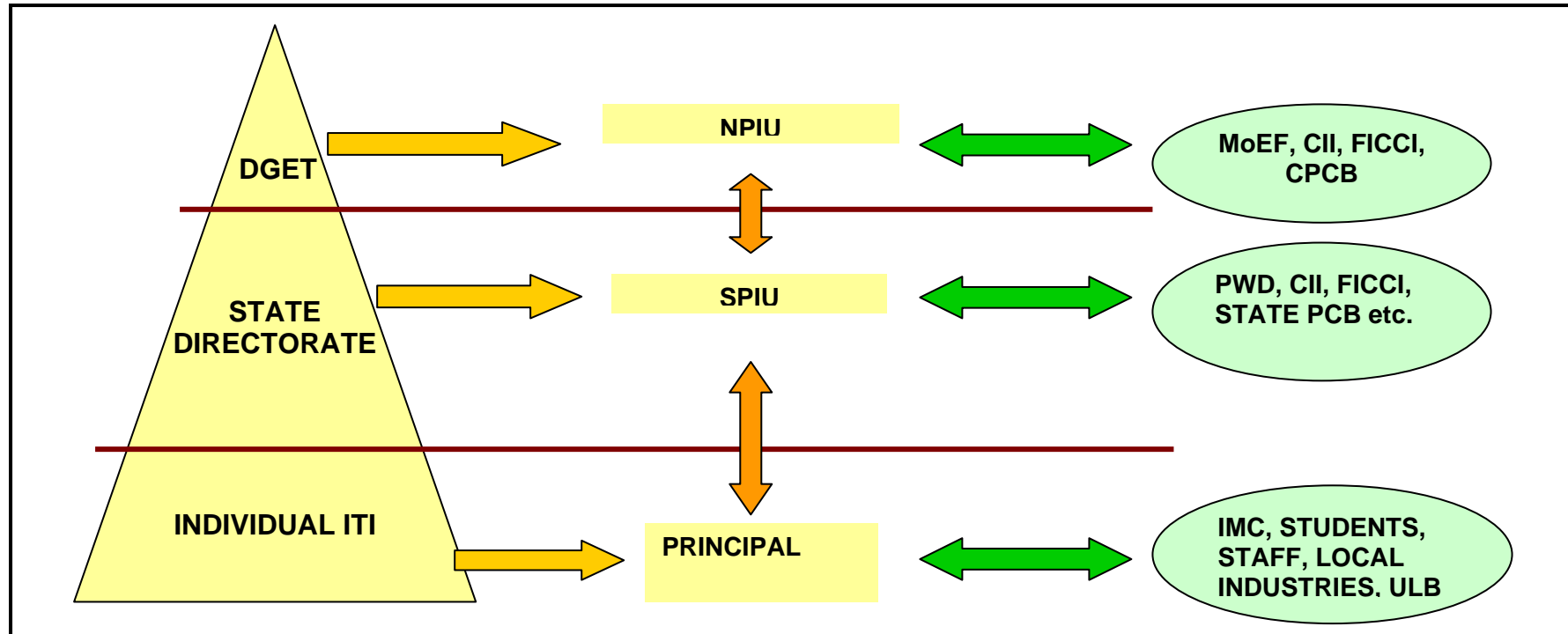


Table E-3: Institutional responsibility

Level	Composition	Key Tasks / Responsibility	Remarks
Central Level	One Deputy Director Level Officer to be designated as Nodal Environment Officer. Refer ToR given in Annexure VI	<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 Refer ToR given in Annexure VII	<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. 	Feedback from the NPIU, SPIUs, Trainees and stakeholders from the Industry.

			<ul style="list-style-type: none"> • Develop Training Material. • Conduct Training Programmes for Master Trainers/Instructors and Others. 	
State Level	SPIU	<p>One officer to be designated as State Environment Officer. Refer ToR given in Annexure VIII</p>	<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.
		<p>Short term consultant/s for specific jobs (Environ. Expert; Civil Engineer; Architect etc.)</p>	<ul style="list-style-type: none"> • Undertake/assist Nodal State Environment Officer on allotted tasks (Scope of work to be 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.

MONITORING AND SUPERVISION ARRANGEMENTS:

1. INDEPENDENT ENVIRONMENTAL AUDIT AT NATIONAL LEVEL (ToR to be prepared by Nodal Environment Officer)

- There is a provision for an independent environmental audit at national level.
- This will be conducted at the end of the second year and fourth year
- Credible sample of ITIs to be taken for review of compliance with EMF requirements

2. COMPLIANCE REVIEWS AT STATE LEVEL

- The State Environment officer would review existing compliance of ITI to national norms/ standards submitted by PWD.
- The officer would also review compliance of the up-gradation proposal for compliance.

3. REPORTING AT STATE LEVEL

- The State Environment officer is responsible for submitting annual state compliance report to NPIU giving status of up-gradation work completed in the last year in the state and compliance status.

4. REPORTING AT NATIONAL LEVEL

- The Nodal Environment officer is responsible for preparing annual national level status report giving status of up-gradation work completed in the last year in all the states and compliance status.

COMPONENT F

BUDGETARY REQUIREMENTS FOR EMF IMPLEMENTATION

The various environmental management and augmentative measures suggested in the environmental management framework for ITI could be incorporated in the detailed project reports or contract documents at the DG E&T or state level. However, certain activities like training and capacity building, public disclosure etc. would require special budgetary provisions, as detailed out below:

Table F-1: Budgets for EMF at NPIU Level

Sr. no	Expense Head	Unit cost (in INR)	Total required	Total Expense (in INR)	Remarks
1	Staffing and related Expenses				(calculated for two years)
a.	Consultancy charges - Environmental Specialist	40000	24 months	960000	Appointment for 1 year initially, term to be extended, if required
b.	Operating Expenses				
	Travel Allowance	10000	50 visits	500000	As per actual
	Subsistence Allowance	1500	200 days	300000	Lodging and Boarding
	Communication	12000	24 months	288000	Transport City Travel
	Contingency	-	-		
2	Green News Letter	10,000	20 issues	2,00,000	-
3	Development of National Level Training and Capacity building plan, Manual & Training material	20,00,000		20,00,000	National Level training plan incorporating training needs assessment of the ITIs
4	Field testing of EMF	3,00,000	5 ITIs	15,00,000	For all geo climatic regions and at least 3 visits per ITI
5	Environmental challenge fund for best three ITIs	25,000	3 years	22,50,000	Rs. 2.5 lakhs each for best three ITIs for a period of five year
	TOTAL			79,98,000	

Table F-2: Budgets for EMF at SPIU Level

	Expense Head	Unit cost (INR)	Total required	Total	Remarks
1	Hiring of short term consultants	2500	60 days	150000	For various types of short term environmental consultancy services
2	Environmental Training and capacity building	450000	-	450000	part of the over all training budget for the project
	TOTAL			6,00,000	

General 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.

Table F-3: Budgets for EMF per ITI

No.	Activity	Unit Cost	Total Number/ Required	Total	Remarks/Assumptions
1.	Environmental management system documentation/ drills	Lump sum	-	30,000	-
2.	Other Miscellaneous works (Printing of brochures/ pamphlets; Provision of sign boards/ notice boards)	Lump sum	-	20,000	For environmental awareness and related activities

COMPONENT G

TRAINING, CAPACITY BUILDING & PUBLIC DISCLOSURE POLICY

1. TRAINING AND CAPACITY BUILDING PLAN

The need for a robust training and capacity building plan has emerged from various level of consultations carried out during the course of this assessment. Thus, a comprehensive training & capacity building plan is proposed, as under

Table G-1.1: Training and Capacity Building Plan

Training Module	Level	Broad Content	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 & design ▪ Green Building /Eco-Housing concepts ▪ Green Construction Management 	2 days	Officials of the state directorate; Master trainers/ instructors

Training Module	Level	Broad Content	Duration	Target Group
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

2. PUBLIC DISCLOSURE POLICY

2.1 Brief of the Right to Information Act, 2005

Public disclosure has become a mandatory activity under The Right To Information Act, 2005, which is an act to provide for setting out the practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority. This act is extends to the whole of India except the State of Jammu and Kashmir. "Information" according to this act means any material in any form, including records, documents, memos, e-mails, opinions, advices, press releases, circulars, orders, logbooks, contracts, reports, papers, samples, models, data material held in any electronic form and information relating to any private body which can be accessed by a public authority under any other law for the time being in force.

The information accessible under this Act, which is held by or under the control of any public authority includes the right to (i) inspection of work, documents, records;

(ii) taking notes, extracts or certified copies of documents or records; (iii) taking certified samples of material; (iv) obtaining information in the form of diskettes, floppies, tapes, video cassettes or in any other electronic mode or through printouts where such information is stored in a computer or in any other device

As per the act every information shall be disseminated widely and in such form and manner which is easily accessible to the public. All materials shall be disseminated taking into consideration the cost effectiveness, local language and the most effective method of communication in that local area and the information should be easily accessible, to the extent possible in electronic format with the Public Information Officer available free or at such cost of the medium or the print cost price as may be prescribed.

2.2 Responsibility of DGE&T in the context of IVTI Project

As a responsible agency, The DGE&T need to initiate actions at the central level as well as ensure state level and local level initiatives to keep people informed about the project with all available information. Some of the activities at different level are discussed below.

2.3 CENTRAL LEVEL:

Ministry at the center need to maintain all its records related to the project duly catalogued and indexed, all appropriate records need to be computerised and connected through a network all over the country on different systems so that access to such records is facilitated. It is recommended to upload the following information on the exiting website of DGE&T :

- What is the Project and its salient features
- Objective of the project and expected benefits
- All reports like, pre feasibility report, detail project report, Environmental/Social Assessment etc.
- Brief of Agencies involved at different capacity
- Brief of Funding Agency
- Budgetary allocation with regular update
- State level agencies and contact addresses

2.4 STATE LEVEL:

At the state level, a Public Information Officer (PIO), need to be designated under sub-section (1) and a State Assistant Public Information Officer need to be designated as such under sub-section (2) of section 5 of the Right to Information Act. The PIO will be responsible for any kind of information to be disseminated to public. For this purpose he/she need to maintain all records related to the project at the state level duly catalogued and indexed, computerize necessary reports and data.

Dissemination of brief about the project and its expected impacts at the state level, to the public need to be done through notice boards, newspapers, public announcements, media broadcasts etc preferably in local language.

2.5 ITI LEVEL:

The concerned ITIs, who will be in a more intimate relation with the local people, need to be transparent about the proposed project and its activities. Every ITI may designate a PIO, who will be held responsible for any information, which need to be proactively disseminated. For example he/she need to take necessary steps to disseminate the following information by displaying in notice boards at the campus entry/exists, brochures or any other means with one copy, strictly in local languages.

- Siting Details along with site map
- Project objectives, activities, outputs & benefits
- Details of the programmes, courses, eligibility & admission procedures
- Likely Impacts and Entitlements
- Contact Person and Address (PIO)

At present, most of these it is do not have a website of their own. It is therefore, recommended to develop website at the ITI level, budget for which should be made available through EMF budeget.

1st NATIONAL LEVEL CONSULTATION WORKSHOP

The Director General of Employment and Training (DGE&T), Ministry of Labour & Employment (MoL&E), Govt. of India had organized a national level consultation workshop for disclosure of the draft Environment Management Framework for discussion and to invite feedback from the State Directorates. The workshop was held on January 9, 2007 at the office of the Ministry of Labour and Employment, Shram Shakti Bhavan, Rafi Marg, New Delhi. The Director General, DGE&T chaired the workshop and other officials of DGE&T and MoLE were present. The World Bank was represented by social and environmental experts. The CEPT project team, IIT Delhi, Officials from FICCI and CII, and State Directors from Orissa, Andhra Pradesh, Tamilnadu, Himachal Pradesh, Delhi, Goa, Assam & Karnataka were part of the workshop.

The morning session presentation was given by IIT Delhi and after the presentation there was useful discussion on different social issues. After the lunch break, CEPT presented the draft Environmental Management Framework and feedback was invited from the states regarding key issues arising from the report. The states were asked to give their opinion about the practical implementability of the recommendations proposed in the EMF. The major issues discussed were the inclusion of environmental concerns in the course curriculum and regular maintenance of the ITIs. The discussion led to certain decisions and the inputs were very useful to finalize the draft EMF.

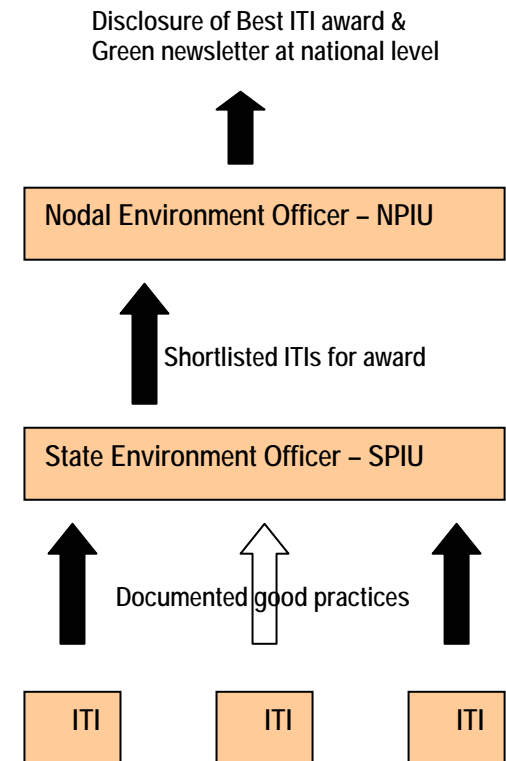


COMPONENT H



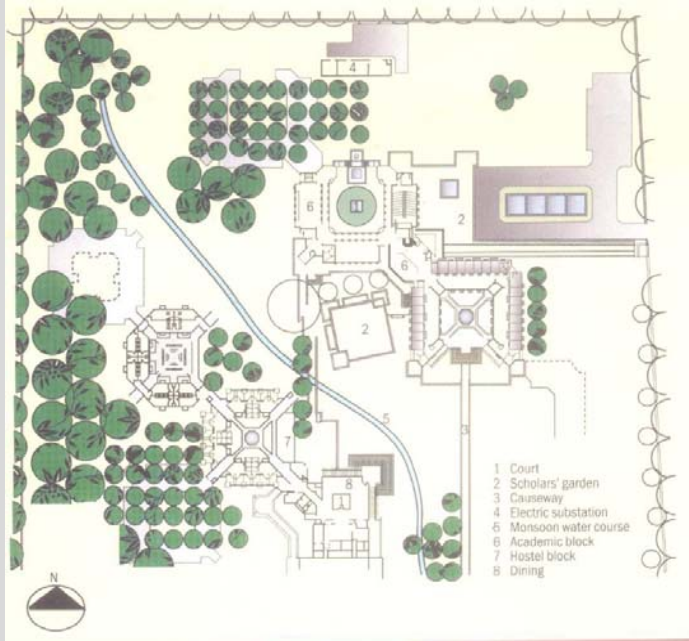


DOCUMENTATION OF GOOD PRACTICES – Best ITI Challenge Award & Green Newsletter






During the sample survey conducted for the EMF, it was observed that there are many ITIs that follow certain good practices in environment management in their campus activities. The EMF aims at encouraging and augmenting these existing environment management practices, hence there is a need to identify and document these good practices and disseminate to all other ITIs in the country.







- The documentation of the good practices would be done for the “Best ITI challenge award’ and published annually in the ‘Green Newsletter”.
- Each ITI to be encouraged to document the good practices that they follow in their campus using photographs and brief descriptions using the format demonstrated below and submitted annually to the SPIU for competing for the award.
- The state environment officer would be responsible for short listing few best performing ITIs within the state and forwarding the applications to the Nodal environment officer at NPIU.
- The Nodal environment officer would be responsible for operation of the award fund. The disclosure of the award and the good practices at national level would be done through the “Green Newsletter”.



SOME ENVIRONMENTAL ISSUES AND GOOD PRACTICES DOCUMENTED

Existing Problem		Recommendations for Compliance
Conflict of Activities		
		
<p>ITI Goa is located just beside a neighborhood public road and does not have any boundary wall. It leads to conflict of activities like parking and accessibility.</p>	<p>Municipal solid waste is dumped just in front of ITI Guwahati. It leads to bad aesthetics as well as unhygienic campus environment.</p>	
		
<p>Encroachment of land from Campus of ITI Guwahati.</p>	<p>Use of Campus Pond by outsiders at ITI Durgapur</p>	

Solid Waste Nuisance		Recommendation for Compliance
 <p>17/11/2006</p>		 <p>21/11/2006</p>
<p>Scattered solid waste at ITI Durgapur Campus.</p>	<p>Open burning of organic waste at ITI Guawahati</p>	
		 <p>21/11/2006</p>
<p>Scattered dry leaves at ITI Ankleshwar</p>		

Drainage Problem		Recommendation for Compliance
		
<p>Playfield converted in to wetland at ITI Guwahati</p>	<p>Eroded boundary wall at ITI Pondicherry</p>	
Waste Water Disposal		
		
<p>Grey water from Bathrooms are clogged at ITI Durgapur</p>	<p>Waste water is discharged with out treatment at ITI Durgapur</p>	

SUMMARY OF IMPORTANT ACTIONS

The following actions are recommended in the context of the present environmental assessment:

Suggested Short Term Actions:

1. **National Level Training & Capacity Building Plan** on Environmental Awareness
2. Development Trade Specific EHS course content
3. Implementation arrangements for environment management at the DGE&T and State Directorate level
4. Pilot **Field Testing of the EMF** at varied geographic locations (at least 1 ITI/region)
5. Planning, implementation and supervision of measures suggested in the EMF
6. Reporting and Documentation

Suggested Long Terms Actions:

1. Integration of Environment Management Aspects in the new curriculum
2. Restructuring of the IMC with participation of the NGOs
3. Setting-up of an Best ITI Fund for the ITIs to be upgraded
4. Initiation of ITI “Green Newsletter” for sharing experiences and good practices