

*Human Resources  
Development Needs for the  
Environmental Sector:  
Training*



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The cover photograph is of cultivation in the Govind Pashu Vihar National Park,  
Uttarakhand, taken by Raman Mehta.

**HUMAN RESOURCES DEVELOPMENT NEEDS IN THE ENVIRONMENT SECTOR:**

**TRAINING**

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## LIST OF ABBREVIATIONS

### THRUST AREAS

- 1) DAM - Dams
- 2) EC - Energy Conservation
- 3) ECO - Environmental Economics
- 4) EIA - Environmental Impact Assessment
- 5) FOR - Forestry
- 6) GE - General Environment
- 7) PC - Pollution Control
- 8) PRO - Project Formulation
- 9) REH - Rehabilitation
- 10) SC - Soil Conservation
- 11) SF/CF - Social/Community Forestry
- 12) URB - Urban Environment
- 13) WC - Water Conservation
- 14) WL - Wildlife and Biodiversity Conservation

### LIST OF TRAINEES

- 1) ADM - Administrators
- 2) ART - Artisans
- 3) FAR - Farmers
- 2) GP - Government Professionals.
- 5) LDR - Community leaders
- 6) NGP - Non-government Professionals.
- 7) NGO/COP - Non government organisations/Cooperatives
- 8) OTH - Others.
- 9) POL - Politicians
- 10) PUB - General public
- 11) SC - Schedule castes
- 12) SCHL - School students
- 13) TRI - Tribals

- 14) UNIV. - College/University students
- 15) WOM - Women

#### TYPES OF SKILLS

- 1) COM - Community Organization
- 2) ENE - Energy Conservation Measures
- 3) EIA - Environment Impact Assessment
- 4) OTH - Others
- 5) OFP - Planting Other Forest Produce
- 6) PRA - Participatory Rural Appraisal
- 7) PLNT- Planting Trees
- 8) POL - Pollution Control Measures
- 9) SOIL- Soil Conservation Measures
- 10)LEG - Take Legal Action
- 11)VET - Veterinary Practices
- 12)WTR - Water Harvesting Measures
- 13)WLM - Wildlife Management

#### MISCELLANEOUS

- 1) MOEF - Ministry of Environment and Forests
- 2) MOHRD - Ministry of Human Resources and Development
- 3) UGC - University Grants Commission

## I INTRODUCTION

With the rising consciousness about the environment and the dangers involved in allowing it to degrade and pollute, there is an increasing need to build up abilities to protect and conserve nature and natural resources. However, considering the fact that these natural resources form a bedrock for economic growth and development, and also support the basic needs of much of the population, there must be an ability to use them optimally. This involves integrating environmental concerns into all aspects of economic activity, and the making of correct choices and trade-offs.

To ensure that the best choices are being made and that the value of protecting the environment is not being ignored, adequate human resource development, especially through properly designed training programmes, needs to be done. Professionals involved in designing and running various environmental activities need to be trained in how to do this in the most environmentally friendly way. Administrators need to be trained to spot and plan for minimising environmentally destructive activities. Planners need to understand how development can be made more sustainable.

A country like India, which prides itself on having a large force of trained manpower, seems currently deficient in experts and trained professionals in environment. There are also a large body of professionals and administrators who have never been exposed to environmental issues. There seems, therefore, a need to develop a comprehensive training programme which ensures that all interested and concerned persons have access to effective training opportunities.

## II TRAINING NEEDS IN ENVIRONMENT

The distinction between training and education is not always clear..

Training can :

- a. Impart information
- b. Change attitudes
- c. Develop skills

### 1. The categories of persons that need to be trained

In so far as training is the imparting of specific skills, it involves those categories of persons who are either expected, as a part of their work, to perform certain tasks which require skills, or those who would like to, as citizens or as members of voluntary groups, perform such tasks. Broadly they can be classified as follows:

1.1 Administrators (ADM): Who are required to assist in the formulation of policies and plans, and to carry out development projects and activities. They also run most aspects of the Government.

1.2 Professionals, both technical (engineers, doctors, scientists, lawyers, judges, etc.), and social scientists and managers. They, both within (GP) and outside (NGP) the Government, are involved in designing, assessing and managing projects and activities which have potential or actual impact on the environment.

1.3 Community Leaders (LDR), who mobilise and influence the thinking of other people and, therefore, need to be trained themselves.

1.4 Representatives of non-governmental organisations (NGO) and Co-operative structures (COP) who are involved in fighting for the environment, often against governmental or corporate interests, and thereby need the skills to effectively carry on this fight.

1.5 The general public (PUB), who might want to develop certain skills which would empower them to act effectively in the protection and regeneration of the environment.

1.6 Students from Universities and colleges (UNIV), and from schools (SCHL), who would not only be future planners, administrators and consumers but also can currently participate in environmental protection programmes.

1.7 Artisans (ART), Farmers (FAR), Tribals (TRI) who are a critical group most closely associated with natural resources i.e. land, water and forests. Training for them is essential in order to evolve strategies for sustainable use of these resources for the future.

1.8. Women (WOM) are a special interest group with regard to the environment both as consumers and protectors and need to be trained in both these capacities.

Training is required across levels and at different stages of the work or career.

## 2. The types of training that each category needs

Different categories of people must be trained to better perform tasks related to the conservation, protection and regeneration of the environment, and to use one or more of the available strategies. Some of the tasks and strategies for which training needs to be imparted are:

- Conservation and regeneration of forests
- Conservation of wildlife and biological diversity
- Protection of air, water, and land, from pollution
- Conservation and regeneration of ecologically sensitive areas
- Protection of areas with special environmental problems
- Conservation of natural resources
- Protection from hazards
- Use of legal processes
- Environmental impact assessment methodology
- Environmental management
- Environmental planning
- Ecodevelopment and joint forest management
- Technological development and application
- Research methods
- Monitoring methods and technologies
- Education and awareness methods

Special attention needs to be paid for **training in environmental impact assessment**. The need for sustainable development involves, among other things, the ability to assess the impact of development activities and projects on the environment. This enables the making of correct choices, in terms of allowing only those projects that are environmentally viable, and minimising the environmental impacts of even these projects. It also gives a direction for the development of new processes and technologies, helps in determining the real social costs of products and services, and highlights the need for conserving resources and finding or developing substitutes for scarce ones.



The rapid rate of economic growth, in India, means that there are, at any given time, a large number of development projects in the planning or implementation stage. Unfortunately, adequate expertise and institutional structures are not yet available in India to speedily and comprehensively assess their environmental impacts. This has often led to delays in the clearance of projects or, worse, the clearing of projects which were not properly assessed and consequently not established to be environmentally viable.

There is, therefore a need to build up trained human power in EIA, especially among independent institutions and within the government.

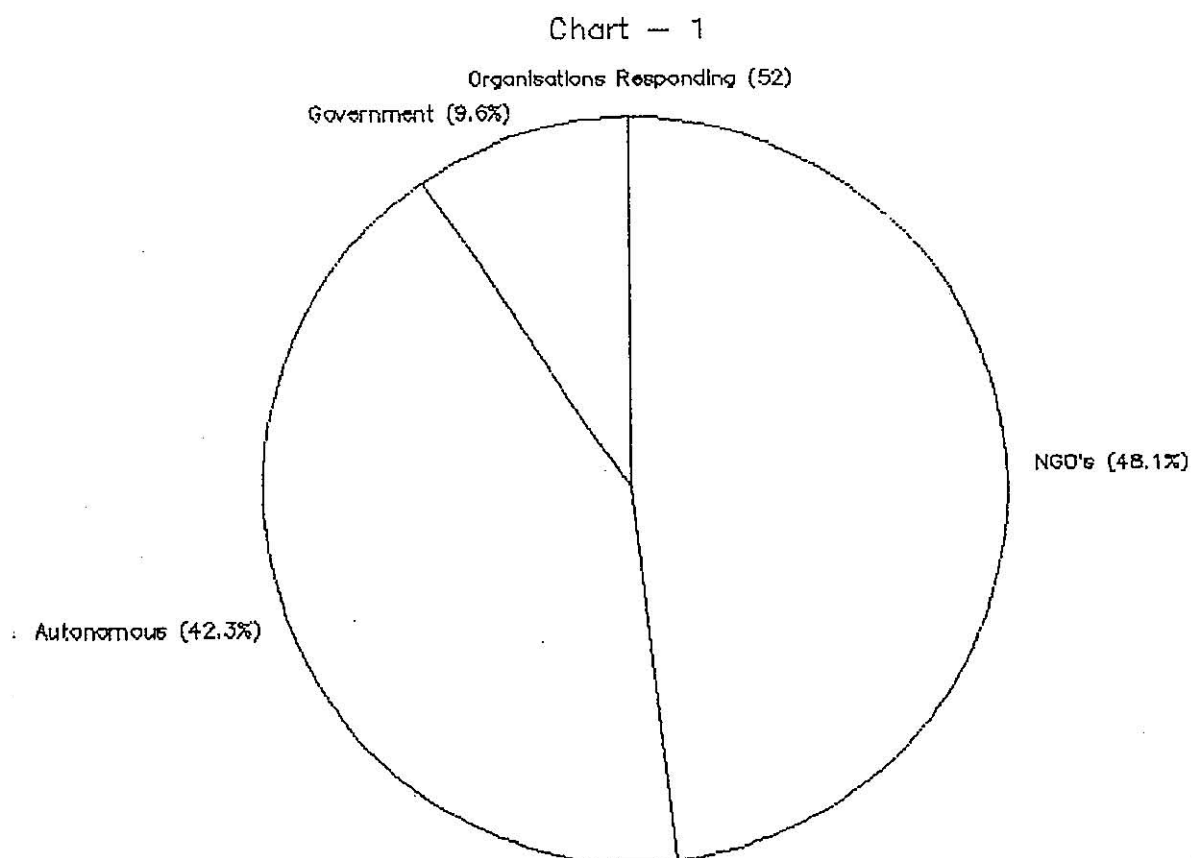
### III ASSESSMENT OF THE CURRENT TRAINING ACTIVITIES

For the purpose of assessing the current training activities in India, a questionnaire (Annexure I) was sent to 300 governmental and non-governmental organisations and institutions. So far only 80 organisations (Annexure II) have responded, of which just 52 have filled in the questionnaire, the remaining indicating that they have no training activities related to the environment.

Though a preliminary analysis of the data is being given below, it must be kept in mind that the sample is too small to draw any conclusions. Responses continue to come in and perhaps a larger sample would be available for analysis at a later date.

#### 1. Types of Organisations involved in Training

Out of the 52 organisations who filled in the questionnaire, 25 (48.1%) were found to be Non-governmental organisations (NGOs). Only 4 NGOs were not registered. The number of Autonomous Institutions which filled in the questionnaire were 22 (42.3%). Five (9.6%) government institutions have also replied so far. [Chart-1]



## 2. Facilities Available

Only 5 (9.6%) organisations reported the availability of all the facilities listed in the questionnaire, whereas 32(61.3%) institutions reported having their own faculty on environment. Out of these 32 institutions, 18 (56.2%) were NGOs, 11 (34.3%) autonomous institutions and 3 (9.3%) government institutions. Training films on environment are available with 25 (48.1%) organisations and 36 (69.2%) organisations have training materials. Of these 19 (52.7%) are NGOs, 15 (41.6%) are autonomous organisation. Case studies on environment are available with 25 (48.1%) organisations, whereas 30 (57.6%) organisations have computer facilities. [TABLE 1 ]

TABLE - 1 TYPES OF ORGANISATIONS WITH FACILITIES AVAILABLE

TYPES OF ORGANI- SATIONS	FACULTY ON ENVIRONMENT		TRAINING FILMS		TRAINING MATERIALS		CASE STUDIES		COMPUTERS	
	NO	%	NO	%	NO	%	NO	%	NO	%
NGO	18	56.2	13	52.0	19	52.7	13	52.0	8	26.6
AUTONOMOUS	11	34.3	10	40.0	15	41.6	11	44.0	18	60.0
GOVERNMENT	3	9.3	2	5.5	2	4.0	1	4.0	4	13.4
TOTAL	32		25		36		25		30	

### 3. Area and Region Covered

Most of the organisations were found to be covering rural areas under their environment training programmes. Both rural and urban areas were covered by 22 (42.3%) organisations. 11 (21.1%) organisations were involved only in rural areas, whereas one organisation was covering only urban areas. [TABLE 2]

TABLE - 2 AREA COVERED BY EACH ORGANISATION

AREAS	NO. OF ORGANISATIONS RESPONDING	PERCENTAGE OF TOTAL ORGANISATIONS RESPONDING
RURAL & URBAN	22	42.3
ONLY RURAL	11	21.1
ONLY URBAN	1	1.9

Table 3 shows us the break up of work area of organisations at different levels. Out of 22 organisations working at both rural and urban area, 5 (22.7%) organisations were found to be working at the national level whereas 7 (31.8%) were working at the district, block, taluka etc. levels. Out of 11 organisations working only in rural areas, 5 (45.4%) were found to be working in the district levels.

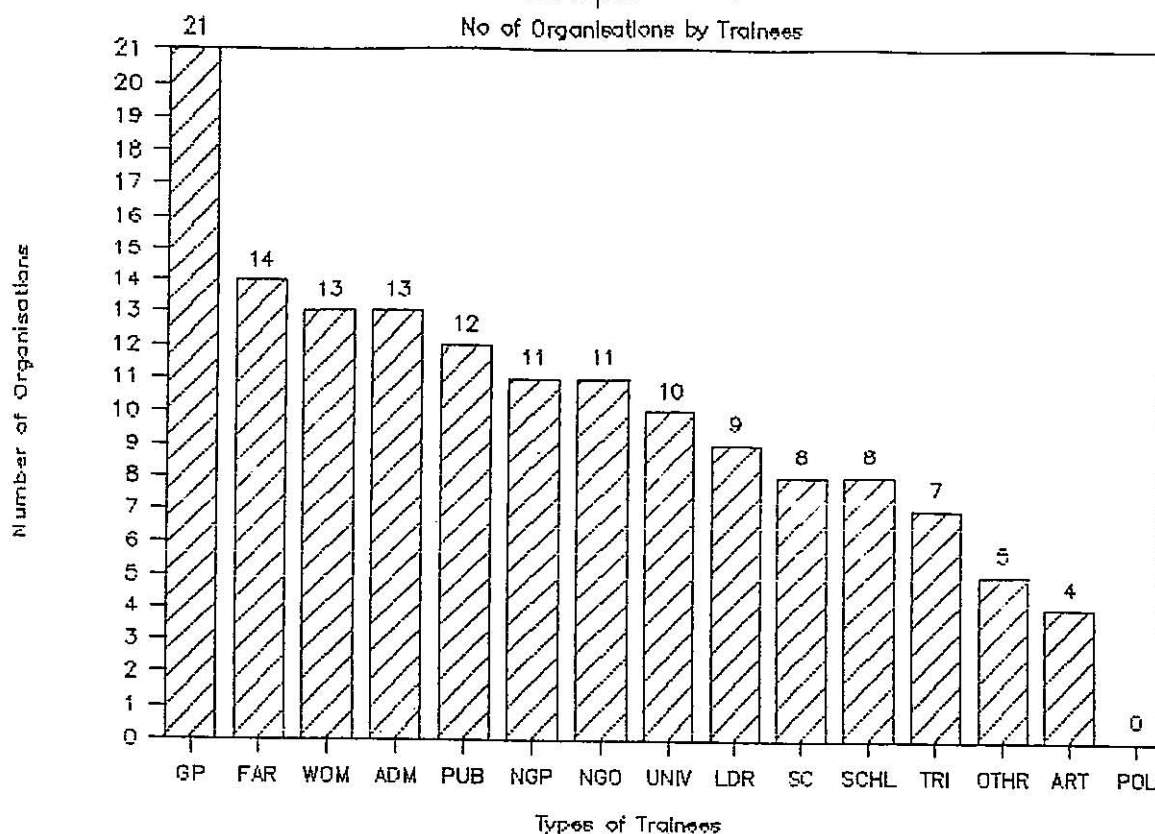
TABLE - 3 BREAK UP OF THE WORK AREA OF ORGANISATIONS

AREAS	RURAL & URBAN NO	% OF RURAL & URBAN AREAS	ONLY RURAL NO	% OF RURAL AREAS	ONLY URBAN NO	% OF URBAN AREAS
	1	2	3	4	5	6
NATIONAL	5	22.7	1	9.0	0	
STATE	3	13.6	2	18.1	0	
DISTRICT ETC.	7	31.8	5	45.4	0	
NOT SPECIFIED	7	31.8	3	27.2	1	
TOTAL	22		11		1	

### 4. Category of Trainees

Government professionals were found to be the most common trainees in 21 (40.3%) organisations. 13 (25%) organisations trained women and farmers, whereas no organisation was found to train politicians. [GRAPH-

Graph - 1



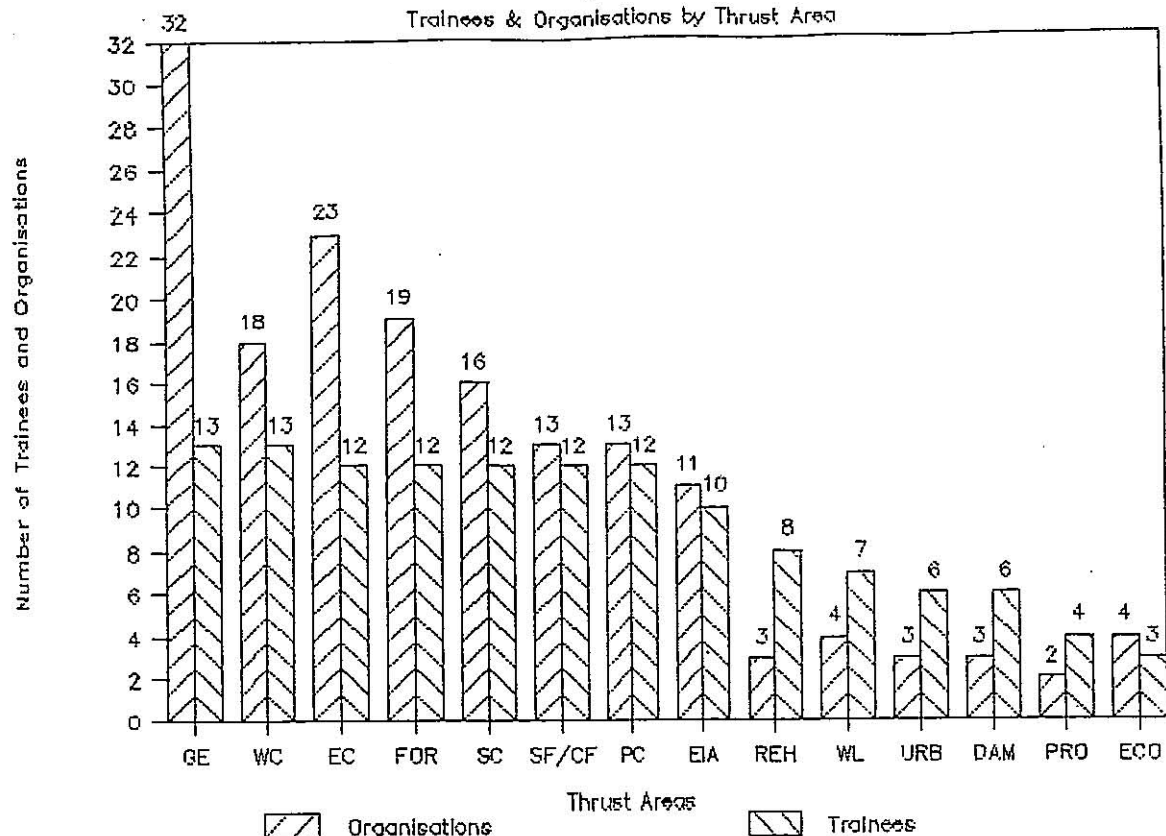
## 5. Thrust Areas

Maximum number [32 (61.5%)] organisations were found to specify their thrust area as general environment. There were 13 (86.6%) types of trainees found to be trained in general environment. Energy conservation was second with 23 (44.2%) organisations and 12 (80%) types of trainees.

Very few organisations [3(5.7%)] were found to lay stress on urban environment, rehabilitation and dams. Wildlife and biodiversity conservation 4 (7.6%), project formulation 2 (3.8%) and environmental economics 4 (7.6%) were also found to be poorly covered. Similarly, the types of trainees for these thrust areas were also few. [GRAPH-2]

# Graph - 2

Trainees & Organisations by Thrust Area



Government professionals were found to be trained in all the thrust areas (100). Non government professionals and farmers were found to be the other trainees who covered 85.7% of all thrust areas. Women and NGO/COP were also found to be trained in 78.5% of all thrust areas.

[TABLE - 4]

TABLE - 4 TRAINEES IN DIFFERENT THRUST AREAS

THRUST AREAS GE TRAINEES	FOR	SF/CF	WL	PC	EIA	URB	DAM	REN	EC	ECO	PRO	WC	SC	NO OF THRUST AREAS COVERED FOR EACH TYPE OF TRAINEES	PERCENTAGE OF TOTAL THRUST AREAS COVERED FOR EACH TYPE OF TRAINEES
ADM	Y	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	10	71.4
GP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	14	100
KGP	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	13	92.8
UNIV	Y	Y	Y	N	Y	Y	N	Y	Y	N	N	N	Y	10	71.4
SCHL	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	Y	Y	10	71.4
WOM	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	Y	11	78.5
TRI	Y	Y	Y	N	Y	N	N	Y	Y	Y	N	N	Y	9	64.2
SC	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	Y	11	78.5
NGO/COP	Y	Y	Y	N	Y	Y	N	N	N	Y	N	N	Y	8	57.1
LDR	Y	Y	Y	N	N	Y	N	Y	N	Y	N	Y	Y	9	64.2
POL	N	N	N	N	N	N	N	N	N	N	N	N	N	0	
FAR	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	12	85.7
ART	Y	N	Y	N	Y	N	N	N	N	Y	N	N	Y	5	35.7
PUB	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	9	64.2

## 6. Profile of Training Courses

The total number of courses organised by the various organisations were found to be 448. 27 (51.9%) organisations were found to offer between 1-5 training courses per year. There were only 6 (11.5%) organisations which offered more than 10 courses on environmental training per year. 14 (26.9%) organisations did not specify the number of courses offered per year. [TABLE-5].

TABLE 5 COURSES OFFERED PER ORGANISATION

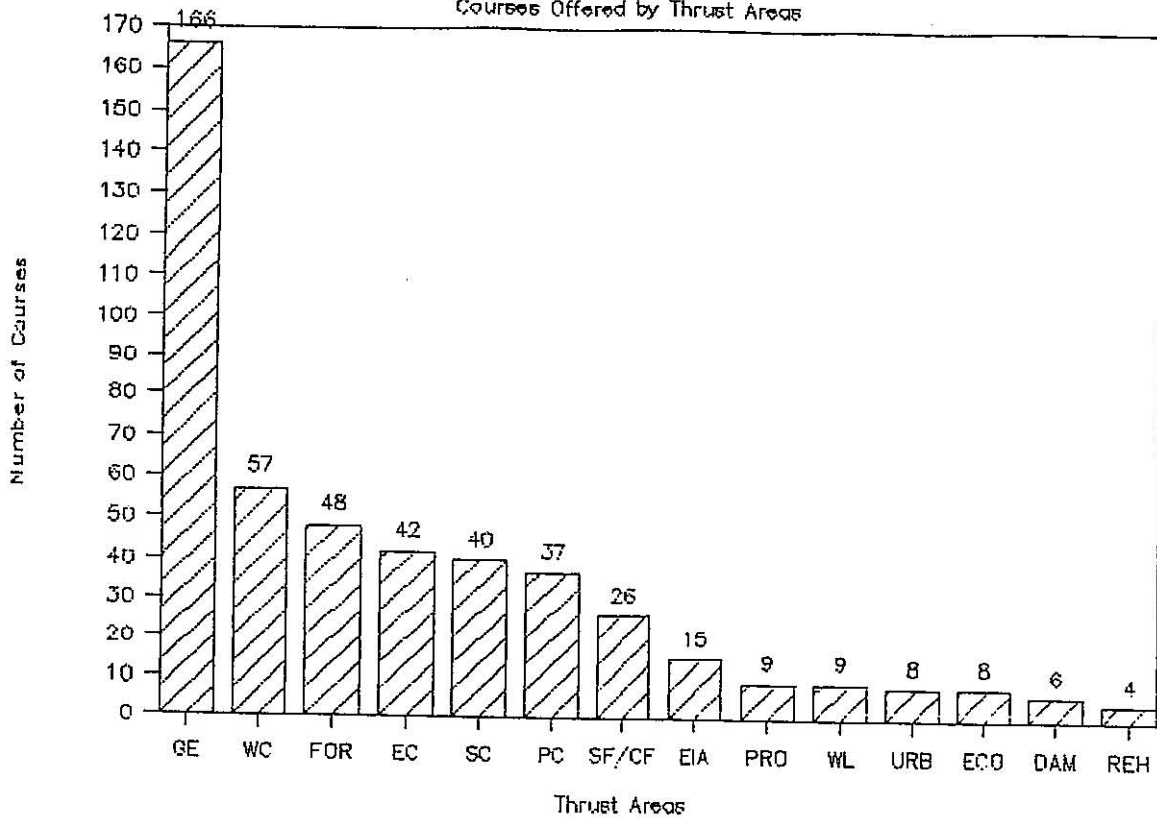
NO.OF COURSES/ PER YEAR	NO. OF ORGANISATIONS RESPONDING	PERCENTAGE OF TOTAL ORGANISATIONS RESPONDING
Not specified	14	26.9
1-5	27	51.9
5-10	5	09.6
10 and above	6	11.5
Total	52	

166 (37.0%) courses were found to have their major thrust area as general environment. Water conservation (12.7%) and forestry (10.7%) were also covered by most of the courses whereas only 8(1.7%) courses were carried out for urban environment and environmental economics.[GRAPH-3]



# Graph - 3

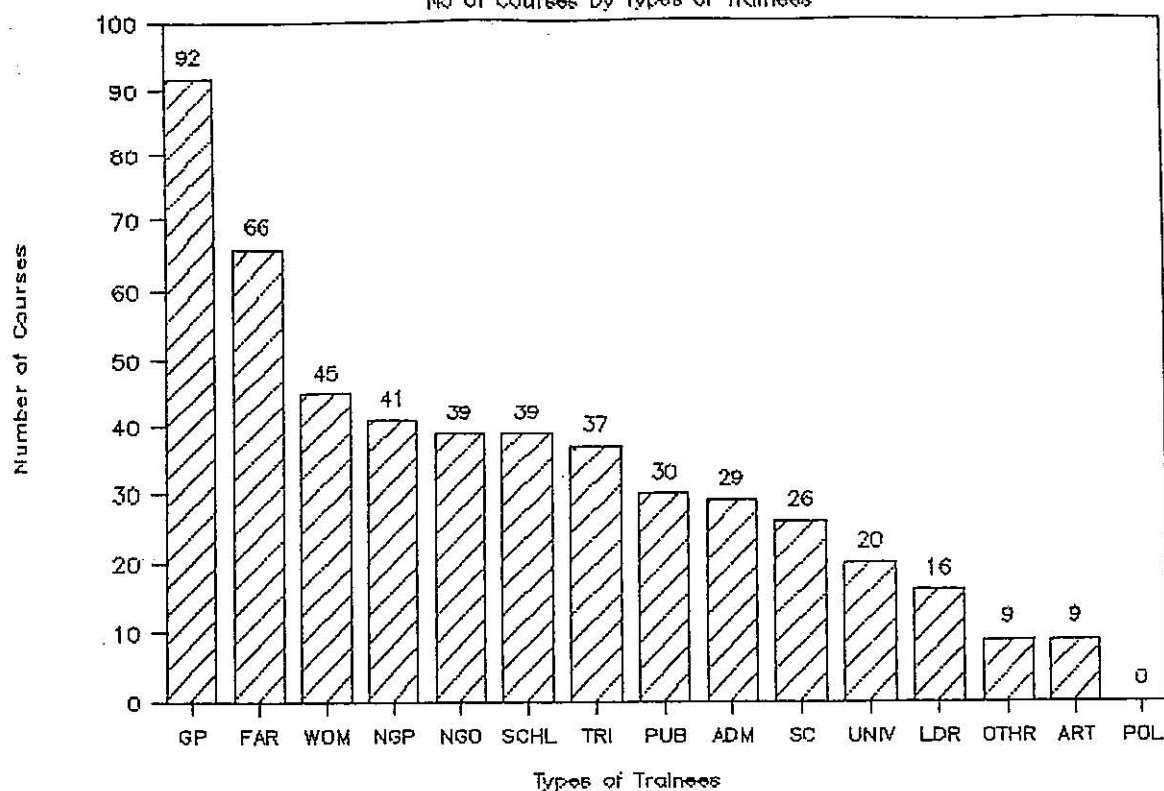
Courses Offered by Thrust Areas



Maximum number of courses [92 (20.5%)] were found to have government professionals as their main trainees followed by farmers attending 66 (14.7%) courses. Politicians did not figures as trainees in any of the courses [Graph-4]

Graph - 4

No of Courses by Types of Trainees



The number of trainees ranged from 2 to 6330. Few organisations reported to have more than 3000 trainees in one course. 54% of courses had 20-100 trainees [TABLE - 6]

TABLE - 6 NUMBER OF TRAINEES PER COURSES OFFERED

NO. OF TRAINEES	NO. OF COURSES OFFERED	PERCENTAGE OF TOTAL COURSES OFFERED
< 20	94	20.9
20-100	242	54.0
100-500	56	12.5
> 500	22	04.9

The duration of courses also varied from 1 day to 105 days. 50.8% of courses held were for 1-3 days. The number of courses held decreased as the number of days increased, except that 5.1% of courses were held for 1 month [TABLE - 7]

TABLE - 7 DURATION OF COURSES

NO. OF DAYS	NO. OF COURSES OFFERED	PERCENTAGE OF TOTAL COURSES OFFERED
1-3	228	50.8
4-8	113	25.2
10-15	29	6.4
20	6	1.3
30	23	5.1
40 and above	7	1.5

## 7. Sources of Funding

The source of funding for the courses were primarily from "various organisations". 256 (57.1%) out of 448 courses offered were funded by their own institutions, different organisations and industries. Contributions, donations and local sources also helped in funding these programmes.

16.2% of the courses were found to be funded by foreign agencies. Various Government institutions funded 18.3% of courses. Sources of funding were not specified for 6.02% of the courses and approximately 6% of the courses had more than 1 source of funds. [TABLE

- 81

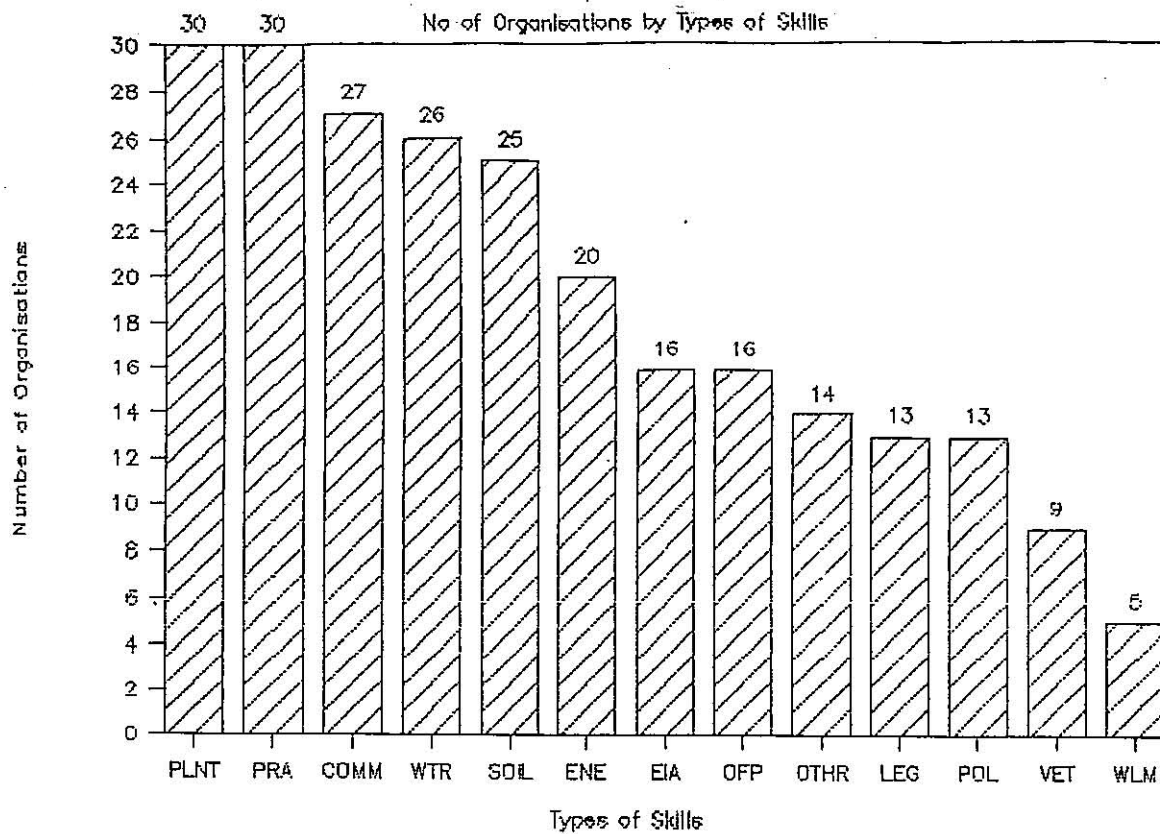
TABLE - 8 DIFFERENT SOURCES OF FUNDING

SOURCES OF FUNDING	NO. OF COURSES OFFERED	PERCENTAGE OF TOTAL OFFERED
FOREIGN AID	73	16.2
GOVERNMENT	82	18.3
VARIOUS ORG/INST/DON	256	57.1
NOT SPECIFIED	27	6.0
TOTAL	448	

## 8. Types of Skills Imparted

Most of the skills were found to be covered by all organisations, but participatory rural appraisal and planting trees were found to be the major skills imparted by 57.6% of organisations. Wildlife management (9.6%) and veterinary practices (17.3%) were the two skills found to be the most poorly covered [GRAPH-5].

Graph - 5



### 9. Funds and Facilities Required

76.9% of the total organisations required funds. Equipment (73%) and information (69.2%) were also required by a majority of organisations. Only 44.2% of the organisations were found to require technical assistance. [TABLE - 10]

TABLE - 10 ASSISTANCE REQUIRED BY ORGANISATIONS

ASSISTANCE REQUIRED	NO. OF ORGANISATIONS RESPONDING	PERCENTAGE OF TOTAL ORGANISATIONS RESPONDING
FUNDING	40	76.9
TECHNICAL ASSISTANCE	23	44.2
EQUIPMENT	38	73.0
INFORMATION	36	69.2
DOCUMENTATION	32	61.5
OTHERS	18	34.6

#### IV RECOMMENDATIONS

1. Given below are the recommendations made by various respondents to our questionnaire, and by some experts whom we had approached for their comments.

##### Improvement of Environmental Training

Peace Trust

Ministry should sponsor an organisation at the district level to develop the Environment Education Centre on lines of District Science Centre.

Marga Mewar Vikas Sanstha

District level training centres are needed

Impact assessment of ongoing training development programme to be done.

Training and Technical aptitude of staff to be regularly updated.

Shramajivi Unnayan

To establish district/resource centre at three levels - MOEF, Public Administration and Voluntary sector.

Tata Energy Research Institute

Good quality training material to be provided.

Short term programmes to develop skills and capabilities of people involved in the environment.

Vikram Sarabhai Centre for Development Interaction (VIKSAT)

Training to be an on going continuous process responding to the evolving needs of the programme

Training should enable capacity building on technical and social aspects

Centre for Management Studies

Trainers to have an annual workshop on developing the content and designing of programme.

Training of trainers once in three year.

National and International network of trainers.

Santhal Paragana Gram Udyog Samiti

Training of trainers to be held all over India.

To train women and NGOs more

Appropriate methods to be adopted for maximum peoples participation.

Maximum camps to be organised at rural level.

Indian Institute of Management - Calcutta

Seminars/workshop for improving training methods/content and strategies.

More stress on training in environmental management in different sectors.

MOEF should provide regular channel for interacting and informing the training institutes on environment management.

The different decision makers and functionaries of related sectors should also be given training

Society for Environmental Education and Development (SEED)

Only interested and motivated people should be trained.

Vivekanand Research and Training Institute

Trainers to be fully aware and prepared on what they are going to teach.

Voluntary organisations, Youth Clubs, Mahila Mandals etc. to be involved in environment training.

Gram Swarajya Sikshan Kendra

To involve peoples participation and encourage direct management by people and NGOs.

MYRADA

Voluntary organisations should train trainers at all levels, according to eco zone.

Taralabalu Rural Development Foundation

Voluntary organisations, Youth Clubs, Mahila Mandals etc. to be

involved in Environment training.

#### Society for National Integration

NGO services to be utilised to the maximum.

Inclusion of subject for awareness of students at school level.

Graduate and post graduate courses to be recognized by universities, by providing a status of independent subject to environmental education programmes.

#### Indira Gandhi National Forest Academy

To involve governmental bodies especially of related sectors, NGOs, religious leaders and educational institutions.

To stress that environmental training is essential for each citizen.

The content of syllabus and methodology of teaching should be designed for different categories accordingly (Common man to Politicians).

#### Gujarat Vidyapith Krishi Vigyan Kendra

Individuals to be educated such that they realize that personal efforts/inputs can solve the problem.

#### Manav Lok

To spread awareness among teachers, lecturers, voluntary workers.

#### Warangal Consumers Council (Environment Wing)

Priority to environment education in schools, adult, NSS and Youth programmes.

To establish National and State level bodies functioning solely for environment upgradation.

To identify NGOs who work on block, district and state level.

#### National Academy of Audit and Accounts

Stress on grass root level training and awareness

#### Tarun Bharat Sangh

Emphasis on local based problems.

To explore and rehabilitate our traditions for preventing

environment crises.

#### Population and Environmental Education

Awareness in rural areas (among the uneducated) to be spread through songs, stories, plays etc.

#### Jan Siksha Evam Vikas Sangathan

More stress on training in Environmental management in different sectors.

Regional infrastructure for training is required for each climatic region.

Research facilities also needed to conduct special studies.

#### Institute of Rural Management (IRMA)

Importance of Institution in management of national resources.

To involve peoples participation and encourage direct management by people and NGO's.

Appropriate methods to be adopted for maximum peoples participation

Stress on grass root level training and awareness

#### Bharathidasan Institute of Management

General inputs of managerial nature on environment can be given to business graduates

#### NEER

Training in survey on pollution could be done on lines of Advisory Council for education (Britain), pollution survey

#### Rural Litigation and Entitlement Kendra

Organizing training programme where concrete examples of environmental improvement can be shown.

#### JOINT FOREST MANAGEMENT PROGRAMME, GUJARAT TOUR, 1990, VIKSAT

Common training courses for RFO's Foresters, Beat Guards and NGO staff working directly at the field level.

Separate training course for senior level officers.



Updating of information.

Emphasis on microplanning, extension methods and peoples participation in training.

Consideration of area specific issues economic cultural, educational and political situation.

Training programme content should be decided upon and support areas identified.

Follow up should be an important part of each post training phase.

Dr. R. S. Pathan (CF) (Surat) - (VIKSAT paper)

Forest Management and Rural Development should be so integrated so that a fuller and holistic approach towards development of a village takes place.

WORKSHOP ON JFM [17-19 August, 1992]

Training programme can emphasize that empowering community forest management groups reestablishes forest department authority, by making it acceptable and supportive of local forest user communities.

Training should address the practical needs of community forest protection committees.

Training programme should emphasize collaborative management, and have a separate paper on the topic wherever an examination is prescribed.

Change in attitude of administrators towards villagers (which are regarded as threats) and to encourage peoples participation.

IMPLEMENTATION OF JOINT FOREST MANAGEMENT - S. PALIT

Re-orientation required for all levels of staff, but the priority should be focussed on the top echelon.

For Forestry personnel, the training will be required both in forestry to improve their technical skill, as well as in non-forestry support activities.

Foresters should have an exposure to training modules while at the

academy only, for development of communication skills, interpersonal skills, extension and participatory micro-level planning.

#### NCERT

The NCERT has been involved in the development and implementation of curricular materials at different levels of school education. Since the environmental concepts are covered in different subjects, it is necessary to train teachers and teacher educators/trainers both at pre-service and in-service levels.

The important aspects which need consideration for developing environmental education activities on content and methods are:

1) Development of instructional materials (print and non-print): Large number of print and non-print materials on environment, forests and wildlife are available in the form of booklets, posters, charts, films and video programmes. These materials generally provide information for all age groups. However, good instructional materials with the desired environmental focus and scientifically sound information are not available especially for school children and teachers. Proper messages related to environmental protection and conservation, though given in many of the printed materials, are not comprehended by students and teachers in the right perspective. Moreover, the information given in the materials does not prepare the school population to take appropriate action/part in environmental activities. So there is a need to prepare scientifically sound instructional materials on environment for teachers and students.

2) Content: Environmental problems of our country such as deforestation, soil erosion, air and water pollution, urbanisation, depletion of natural resources and conservation of natural resources, could be the content of educational

activities on environment. However, the content may vary from place to place, keeping in view the local environmental problems.

3) Other materials: Supplementary materials in the form of books/booklets, films and video programmes are also required to provide proper environmental dimension and prepare children to contribute to environmental protection and improvement.

Most of the posters, charts, and other information materials available in the media are often not presented in the proper scientific perspective. Some times the messages on environment are wrongly presented and conveyed to school children and teachers.

4) Training: The personnel involved in training teachers and teacher educators are not properly prepared to provide sound training in environmental education. There is need to incorporate an environment based training course in the pre-service training of teachers. At present, environmental education does not receive proper treatment in the pre-service teacher training curriculum.

The in-service training programmes also lack proper focus on environment and its protection. Most of the in-service training of teachers at present is limited to some lectures by environmental scientists and teacher trainers. The holistic picture of environment is not made available to the teachers in the training programmes. There is need to give strong inputs on environment in the teacher training programmes meant for training different subject teachers.

5) It is necessary to orient and train teacher trainers and teacher educators, since environmental educators and trainers in the real sense are not available. This would help in

preparing teachers and enabling them to develop positive environmental attitudes among children.

6) The people involved in curriculum development also need proper orientation on environmental education, so that they can develop environment-based curriculum for different stages of school education.

7) The non-governmental organisations working on different aspects of environment need to interact closely with schools and agencies involved in school education.

2. Some of the immediate actions that need to be taken are:

- 2.1 The setting up of a National Environmental Training and Education Commission (NETEC) to strengthen the training and education activities. This commission should work primarily through existing governmental and non-governmental organisations and institutions at different levels, and strengthen and support them.
- 2.2 The NETEC should also organise the production of training material, and an information and library system to support training institutions and activities around the country.
- 2.3 It should encourage NGOs to set up district and village training centres and provide funds for them.
- 2.4 The training of trainers at all levels needs to be taken up urgently. Pending the formation of the NETEC, the MOEF should identify agencies and institutions which could take up this work urgently.
- 2.5 The MOEF, along with MOHRD and the UGC, should identify National Professors in Environment, similar to an existing UGC scheme, and facilitate these national professors to visit and lecture in various institutions across the country. A similar system must also be set up for practitioners and activists, where they could be paid a stipend and travel costs to travel around the country for a year, assisting in the training activities of various institutions and organisations.
- 2.6 An important part of training is training by doing or observing. A scheme needs to be urgently started which would allow practitioners, activists, professionals, civil servants and others to actually participate in and directly observe protection and regeneration activities.
- 2.7 Special attention needs to be paid to the training of

civil servants, especially those belonging to the Central and All India services. The environmental training activities in their induction institutions need to be significantly strengthened. The MOEF needs to take urgent measures to set up environmental training units in these institutions, and to identify from the existing training institutions a few that could be developed and strengthened to become 'centres of excellence' in environmental management and training.

2.8 Similarly, EIA training also deserves priority action.

2.9 In general, much greater environmental training opportunities should be made available to students and the general public, especially in the smaller towns and in townships located in or around areas of special ecological significance.

#### SUMMARY OF RECOMMENDATIONS

1. To set up a National Commission for Environmental Training and Education.

Cost for 5 years: US \$ 50 million

2. To develop a network of environmental training institutional structures for administrators and government professionals

Cost for 5 years: US \$ 15 million.

3. To develop training facilities in Environmental Impact Assessment

Cost for 5 years: US \$ 10 Million

Total requirements for Training sector for 5 years

US \$ 75 million

ANNEXURE-I

QUESTIONNAIRE ON ENVIRONMENT TRAINING

IIPA

1. Name of organisation \_\_\_\_\_

2. Address \_\_\_\_\_

3. Contact Person \_\_\_\_\_

4. Type of organisation

i) NGO Yes \_\_\_\_\_ No \_\_\_\_\_

Registered Yes \_\_\_\_\_ No \_\_\_\_\_

ii) Autonomous Institution Yes \_\_\_\_\_ No \_\_\_\_\_

iii) Government Institution Yes \_\_\_\_\_ No \_\_\_\_\_

iv) Other (Pl. specify) \_\_\_\_\_

5. Institutional facilities available

i) Own faculty on environment Yes \_\_\_\_\_ No \_\_\_\_\_

ii) Training films on environment Yes \_\_\_\_\_ No \_\_\_\_\_

iii) Training materials  
(eg. documents) on environment Yes \_\_\_\_\_ No \_\_\_\_\_

iv) Case studies on environment Yes \_\_\_\_\_ No \_\_\_\_\_

v) Computers Yes \_\_\_\_\_ No \_\_\_\_\_

vi) Others Yes \_\_\_\_\_ No \_\_\_\_\_

Please specify \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6. What geographical area do the environmental training programmes of your institution/organisation cover:

a) Urban Yes \_\_\_\_\_ No \_\_\_\_\_

Specify area \_\_\_\_\_

b) Rural Yes \_\_\_\_\_ No \_\_\_\_\_

Specify area \_\_\_\_\_

Please use extra sheets, if required.

Footnotes for the columns in the table overleaf

1. Column No. 3 - Indicate the major thrust areas of your training programme, using the codes given in ().

- i) General Environment - (GE)
- ii) Forestry - (FOR)
- iii) Social/Community Forestry - (SF/CF)
- iv) Wildlife and Biodiversity Conservation (WL)
- v) Pollution Control - (PC)
- vi) Environmental Impact Assessment - (EIA)
- vii) Urban Environment - (URB)
- viii) Dams - (DAM)
- ix) Rehabilitation - (REH)
- x) Energy Conservation - (EC)
- xi) Environmental Economics - (ECO)
- xii) Project Formulation - (PRO)
- xiii) Water Conservation - (WC)
- xiv) Soil Conservation - (SC)

2. Column No. 7 - Indicate type of trainees, using the codes given in () below:

- i) Administrators - (ADM). Also please specify type (IAS, IFS, IPS, etc.)
- ii) Govt. Professionals - (GP). Also please specify type - eg. Govt. engineer, doctor, scientist, etc.
- iii) Non-government professionals - (NGP). Also please specify type.
- iv) College/university students - (UNIV)
- v) School students - (SCHL)
- vi) Women - (WOM)
- vii) Tribals - (TRI)
- viii) Schedule castes - (SC)
- ix) NGO/cooperatives - (NGO/COP)
- x) Community leaders - (LDR)
- xi) Politicians - (POL)
- xii) Farmers - (FAR)
- xiii) Artisans - (ART)
- xiv) General public - (PUB)
- xv) Others - (OTH). Also please specify type



7. Please give information about training programmes on the environment organised by your institution/organisation in the last three years. Please use the table below and, for columns 3 and 7, use the codes specified in the footnotes overleaf.

1 Sl. No.	2 Title of Course	3 Major thrust area(s)	4 Year	5 Duration (in days)	6 No. of trainees	7 Type of trainees	8 Source(s) of funding
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							

8. Please describe the major thrust of your training programmes, especially the objectives, the content, the methodology used, the level of trainees and the types of persons giving the training. (Please use extra sheets, if required).

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9.a) Apart from awareness and attitudinal changes, are your training programmes designed to develop specialised technical skills in the trainees?

Yes \_\_\_\_\_ No \_\_\_\_\_

b) If so, please indicate the special technical skills that you impart, using the table below.

i)	To conduct Environmental Impact Assessment	Yes _____	No _____
ii)	To conduct Participatory Rural Appraisal	Yes _____	No _____
iii)	To plant trees	Yes _____	No _____
iv)	To plant other forest produce	Yes _____	No _____
v)	For design/implementation of water harvesting measures	Yes _____	No _____
vi)	For design/implementation of soil conservation measures	Yes _____	No _____
vii)	For design/implementation of energy conservation measures	Yes _____	No _____
viii)	For design/implementation of pollution control measures	Yes _____	No _____
ix)	To take legal action	Yes _____	No _____
x)	In community organisation	Yes _____	No _____
xi)	In wildlife management	Yes _____	No _____
xii)	In veterinary practices	Yes _____	No _____
xiii)	Others (Pl. specify)	Yes _____	No _____

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10. a) What kind of infrastructural assistance do you require to improve your training programmes:

- |                             |           |          |
|-----------------------------|-----------|----------|
| i) Funding                  | Yes _____ | No _____ |
| ii) Technical Assistance    | Yes _____ | No _____ |
| iii) Equipment              | Yes _____ | No _____ |
| iv) Information             | Yes _____ | No _____ |
| v) Documentation            | Yes _____ | No _____ |
| vi) Others (Please specify) | Yes _____ | No _____ |

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b) For each of the above that you have ticked 'yes', please specify quantum and type of assistance required.

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11. Please give your views on what are the main steps that need to be taken to improve environmental training in India, especially in terms of the topics, the institutional structures and the quality and adequacy of training.

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COULD YOU PLEASE ENCLOSE THE FOLLOWING:

- This questionnaire has been filled by:

Would you like a copy of our final report?

(Signature)

ANNEXURE-II

LIST OF ORGANISATIONS WHO SENT BACK FILLED IN QUESTIONNAIRE

Questionnaires Analysed

1. Action for Community  
Service Society  
2-48 School Street, V Kota  
Chittoor District - 517 424  
Andhra Pradesh
2. Anna Institute of Management (AIM)  
'Kanchi', 36 Greenways Road  
Madras - 600 028  
Tamil Nadu
3. Auroville Greenwork Resource Centre (AGRC)  
Kottakari  
Auroville - 605 104  
Tamil Nadu
4. BAIF Development Research Foundation  
Kamdhenu, Senapati Bapat Marg  
Pune - 411016  
Maharashtra
5. Bharathidasan Institute of Management  
Post Box No.12 -  
Tiruchirpalli - 620 014  
Tamil Nadu
6. Bihar Institute of Rural Development  
P.O. Hehal  
Ranchi - 834 005  
Bihar
7. Central Institute of Road Transport (CIRT)  
Pune-Nasik Road, Bhosari  
Pune - 411 026  
Maharashtra
8. Centre for Appropriate Technology (CAT)  
5, Jawahar Street, Ramavarmapuram  
Nagercoil - 629 001  
Tamil Nadu
9. Centre for Plant Engineering Services  
Copes House, 1-10-175 Begumpet  
Hyderabad - 500016  
Andhra Pradesh

10. Centre for Science and Environment  
F-6, Kailash Colony  
New Delhi - 110048
11. Dr. Yashwant Singh Parmar University of  
Horticulture and Forestry  
Solan - 173 230  
Himachal Pradesh
12. Gram Swarajya Shikshan Kendra  
Gopaldham, P.O. Vadod, Tal: Jasdan  
Rajkot - 360050  
Gujarat
13. Gujarat Vidyapith Krishi Vigyan  
Randheja  
Gandhinagar - 382620  
Gujarat
14. HCM Rajasthan State Institute of Public Administration  
Malviya Nagar  
Jaipur - 382 017  
Rajasthan
15. Haryana Agricultural University  
Hisar - 125004  
Haryana
16. Indian Institute of Management (IIM-A)  
Vastrapur  
Ahmedabad - 380 015  
Gujarat
17. Indian Institute of Management (IIM-C)  
Joka Diamond Harbour Road  
Calcutta - 700 027  
West Bengal
18. Indian Institute of Technology  
Powai  
Bombay - 400076  
Maharashtra
19. Indira Gandhi National Forest Academy (IGNFA)  
New Forest  
Dehradun - 268 006  
Uttar Pradesh
20. Institute for Financial Management and Research (IFMR)  
30, Kothari Road, Nungambakkam  
Madras - 600 034  
Tamil Nadu
21. Institute of Management Development, Uttar Pradesh,  
Near GSI Building, Sector 'D', Aliganj  
Lucknow - 226 020  
Uttar Pradesh

22. Institute of Rural Management  
Anand, (IRMA), Post Box No. 60,  
Anand - 388001  
Gujarat
23. Jan Shiksha Vikas Sangathan  
P.O. Mara  
Dungarpur - 314 001  
Rajasthan
24. Kashtkari Sanghatna  
3 Yezdeh Behram, Malyan, dahanu Road  
Thane District - 401 602  
Maharashtra
25. M.P. Academy of Administration (MPAA)  
Arera Colony Hitkarini Nagar  
Bhopal - 462 016  
Madhya Pradesh
26. M.Y.R.A.D.A.  
No. 2, Service Road Domlur Lay-Out  
Bangalore - 560071  
Karnataka
27. Magra Mewar Vikas Sansthan  
Kahra, via Beawar - 305 927  
Rajasthan
28. Marathwada Navnirman Lokayat (MANAVLOK)  
Office Dhadpad, Saigaon Road  
Ambajogai - 431 517  
Maharashtra
29. National Academy of Audit and Accounts, Staff College  
Railway Board Building  
Shimla - 171 003  
Himachal Pradesh
30. National Environmental Engineering Research Institute  
Nehru Marg  
Nagpur - 440 020  
Maharashtra
31. National Institute for Training in Industrial Engineering  
Vihar Lake Road  
Bombay - 400 087  
Maharashtra
32. Neer  
Bandh Mohalla  
Parasia - 480 441  
Madhya Pradesh
33. People's Education for Action and Community  
Emancipation Trust (PEACE)  
299 NGO Colony, Opp Nagalakshmi Flour Mills  
Weigh Bridge, Tiruchirapalli Road  
Dindigul - 624 009  
Tamil Nadu

34. People's Science Institute (PSI)  
252 Vasant Vihar  
Dehradun - 248 006  
Uttar Pradesh
35. Population and Environmental Education Centre (PEEC)  
Velgode (PO)  
Kurnool District - 518 533  
Andhra Pradesh
36. Rabbani School  
P.B. No. 19  
Gwalior - 474 001  
M. P.
37. Rural Litigation and Entitlement Kendra  
21, East Canal Road  
Dehra Dun - 248001  
U.P.
38. Santhal Pargana Yudyog Samiti  
Deoghar  
Baidyanath - 814112  
Bihar
39. Shramajivi Unnayan  
PO Goborghuse, Via Patamada  
Singbhum District - 832 105  
Bihar
40. Social Action for Rural and Tribal Inhabitants of India (SARTHI)  
PO Godhar Paschim, Via Lunawada  
Panchmahal District - 389 230  
Gujarat
41. Society for Environment Education and Development (SEED)  
C/o P G Dept of Zoology, S.T Hindu College  
Nagercoil - 629 3002  
Tamil Nadu
42. Society for National Integration Through Rural Development (SNIRD)  
Railpet, Ongole  
Prakasam District - 523 001  
Andhra Pradesh
43. Tarabalu Rural Development Foundation  
Sirigree  
Chitradurga - 577 541  
Karnataka
44. Tarun Bharat Sangh  
Bheekampura, PO Kishori, Thanagazi Tehsil  
Alwar District - 301 022  
Rajasthan
45. Tata Energy Reserach Institute (TERI)  
7, Jorbagh  
New Delhi - 110 003
46. Ubeshwar Vikash Mandal  
11-A Fatehpura  
Udaipur - 313 001  
Rajasthan



47. Urban Development Institute (UDI)  
73 A Mittal Tower, Nariman Point  
Bombay - 400 021  
Maharashtra
48. Vikram Sarabhai Centre for Development Interaction  
Thaltej Tekra  
Ahmedabad - 380 0543  
Gujarat
49. Vivekanand Research & Training Institute  
Mandvi - Kutch - 377 465  
Gujarat
50. Warangal Consumers Council  
206-44/3 Nakkalgulta, Hanamakonda  
Warangal - 506 010  
Andhra Pradesh
51. Water and Land Management Institute  
Canal Colony, Okhla  
Delhi - 110025
52. Xavier Institute of Management  
Bhubaneswar - 751 013  
Orissa

Organisations offering no environmental training

53. Aga Khan Rural Support Programme  
Choice Premises, Swastik Cross Road  
Ahmedabad - 380009  
Gujarat
54. Central Institute for Research & Training Employment Service  
Ministry of Labour, Pusa  
New Delhi - 110012
55. Centre for Development Education  
B-6 (1st floor, B.Block) Unity Building, J.C.Road  
Bangalore - 560002  
Karnataka
56. Centre for Organisation Development  
'Nageena', Road, No.3, Banjara Hills  
Hyderabad - 500034  
Andhra Pradesh
57. Directorate of Training  
E- Wing, Room No-1, Nirman Bhavan, Maulana Azad Rd  
New Delhi - 110001
58. Gokhale Institute of Politics and Economics  
Decan Gymkhana  
Pune - 411004  
Maharashtra
59. Indian Institute of Technology  
Kanpur - 208016  
Uttar Pradesh

60. Institute of Secretariat Training and Management (ISTM)  
Old JNU Campus  
New Delhi - 110 067
61. Mahatma Phule Krishi Vidyapeeth  
Rahuri  
Ahmednagar - 413722  
Maharashtra
62. Management Development Institute (MDI)  
Post Box 60, Mehrauli Road  
Gurgaon - 122 001  
Haryana
63. Manik Ram Verma Tribal Research and Training Institute  
Govt. of Rajasthan, Ashok Nagar  
Udaipur - 313001  
Rajasthan
64. National Centre for Human Settlements & Environment  
E-5/A, Girish Kunj, Arera Colony  
Bhopal - 62016  
M.P.
65. National Civil Defence College  
Palam Road, Civil Lines  
Nagpur - 440 001  
Maharashtra
66. Police Training College  
Trimbak Road  
Nasik - 422002  
Maharashtra
67. Pragati Prathishtan  
Jeevan Chhaya, Ram Murti Road, Nowpada  
Thane - 400602  
Maharashtra
68. Sardar Vallabhbhai Patel National Police Academy  
Shivrampalli  
Hyderabad - 500 252  
Andhra Pradesh
69. Society for Development Alternatives (SDA)  
B-32 Institutional Area, New Mehrauli Road, Hauz Khas  
New Delhi - 110 016
70. Tamil Nadu Institute of Labour Studies  
Building No.5, Kamarajar, Salai  
Madras - 600005  
Tamil Nadu

Questionnaires received too late to be analysed

71. Andhra Pradesh Agriculture University  
Rajendra Nagar  
Hyderabad - 500 030  
Andhra Pradesh

72. Central Mining Environment Research Station  
(Council of Scientific & Industrial Research)  
Parwa Road  
Dhanbad - 826 001  
Bihar
73. Human Settlement Management Institute,  
F-212, Asian Games Village Complex  
New Delhi - 110049
74. Indian Institute of Technology  
Hauz Khas  
New Delhi - 110 016
75. National Institute for Industrial Engineering (NITIE)  
A 1/288, Safdarjung Enclave  
New Delhi - 110 029
76. National Institute of Small Industry Extension and Training  
North-East Regional Centre, Zoo-Narangi Road  
Guwahati - 781 021  
Assam
77. Punjab Agricultural University  
Ludhiana - 141 004  
Punjab
78. Sahabhagi Shikshan Kendra  
13/96 Indira Nagar  
Lucknow - 226016
79. Sarvodaya Pashu Vikash Sahkari Mandali  
1, Dhanabhai Chambers, Opp. Prabhu Nagar Colony, Danilimada  
Ahmedabad  
Gujarat
80. Staff Training Institute (Programme)  
Rosary School Marg, Nirankari Colony, Kingsway Camp  
Delhi - 110 009

