

ENVIRONMENT MANAGEMENT SERVICES FOR SUSTAINABLE DEVELOPMENT

A glimpse of contributions of the ICFRE



**ENVIRONMENT MANAGEMENT DIVISION
DIRECTORATE OF EXTENSION
INDIAN COUNCIL OF FORESTRY RESEARCH AND EDUCATION**

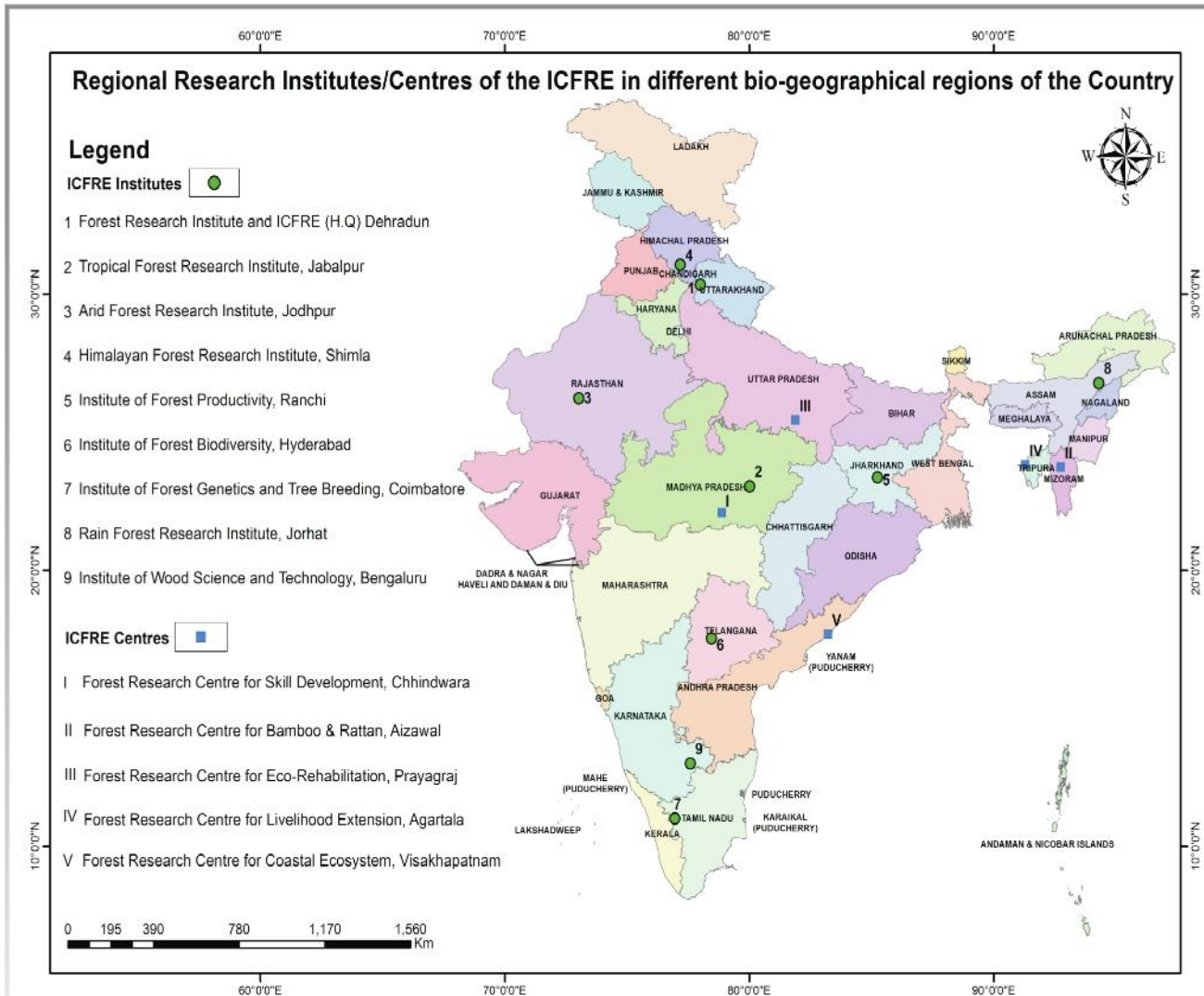
(An Autonomous Body of Ministry of Environment, Forest and Climate Change, Government of India)
Dehradun - 248 006 (Uttarakhand)

www.icfre.gov.in



The Indian Council of Forestry Research and Education (ICFRE), Dehradun is a premier and an apex organization of MoEF&CC, GoI, in the country mandated for imparting quality education, conducting scientific studies and extension of technology and expert services in the field of forestry and environment to the various stakeholders.





The strength of ICFRE for Environmental Management Services is due to:

- 1 Organizational strength with multidisciplinary experts
- 2 Qualified and experienced human capital in forestry and environment related fields
- 3 More than 100 year's rich knowledge base
- 4 Adherence to timelines of action plans
- 5 Learning from best practices in the past and innovation of new techniques
- 6 Emphasis on traditional knowledge and due concern for human rights and stakeholders participation
- 7 Quality services (ISO: 9001:2000)
- 8 International competence

The Council has a pan India presence with its 9 Regional Research Institutes and 5 Centers in different bio-geographical regions of the country. Each Institute has a history of its own and under the umbrella of ICFRE are directing and managing research, extension and education in the field of forestry and environment in the states under their jurisdiction.

ENVIRONMENTAL MANAGEMENT SERVICES

Rendered by Environment Management Division, ICFRE



The Environment Management Division under the Directorate of Extension, ICFRE is involved in conducting several environment related studies throughout the country falling under diverse developmental sectors such as hydropower, mining, infrastructure development, express highways and other projects. The EM Division has provided services in about 60 consultancy projects related to environment management since its inception in the year 2002.

Major areas of environmental services provided include the following:

- 1 Biodiversity assessment studies
- 2 EIA and EMP studies for hydropower and mining projects
- 3 CEIA for hydropower projects in river basins
- 4 Monitoring and evaluation of plantations/afforestation schemes
- 5 Monitoring and evaluation of CAT plans
- 6 Preparation of CAT plans and DPRs
- 7 Carrying capacity studies of forests in relation to iron ore mining
- 8 Environmental audit and environmental performance evaluation in case of coal mines
- 9 Preparation of reclamation & rehabilitation plan for iron ore mines
- 10 Studies on dependency of tribal people on forestry resources



Biodiversity Assessment Studies

Biodiversity in the country is under threat due to varied reasons, such as habitat loss, over exploitation of natural resources, productivity decline, pollution and land use changes due to variety of developmental projects.

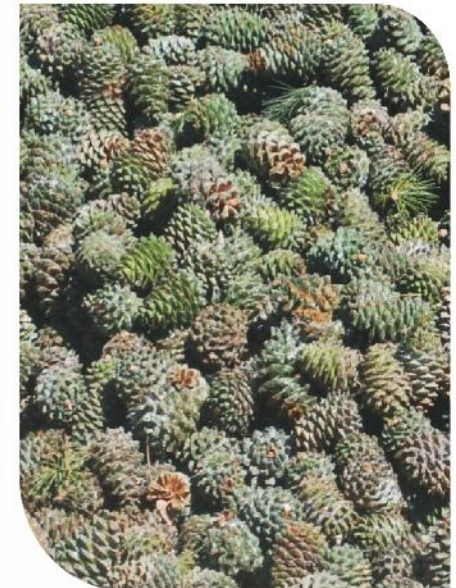
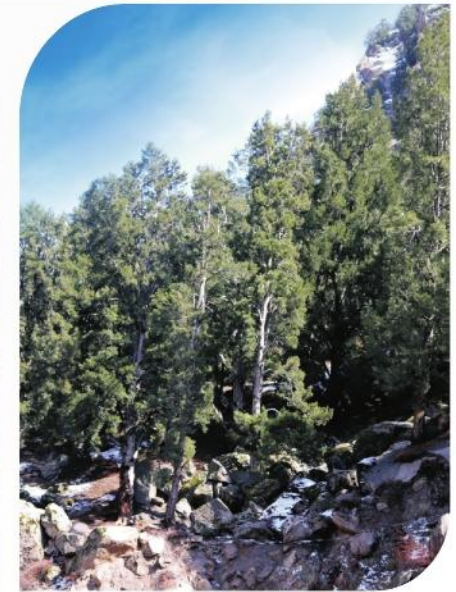
Biodiversity assessment studies are helpful in generation of baseline data on wild flora and fauna of a given area, identification of likely threats to the biodiversity due to developmental activities and in preparing the plans for management and conservation of economically important and ecologically sensitive species (endemic and RET).



MoEF&CC, GoI mandates studies on different group of flora and fauna likely to be impacted due to developmental projects, where environmental clearances are accorded. These include studies on terrestrial flora and fauna including plants, mammals, reptiles, amphibians, butterflies and avifauna considering their immense ecological roles. Likewise, studies on aquatic life including fishes, zooplankton and phytoplankton are also mandated.

MoEF&CC, GoI has identified the ICFRE as one of the expert organization for conducting studies on ecology and biodiversity with respect to developmental projects.

RET and Endemic plant species and Scheduled faunal species require special attention in biodiversity related studies. Special conservation and management plans are required to be recommended for such species on occurrence in a given area.



Study on vegetation diversity in Sutlej River Basin with Deodar and Chilgoza Pine Forest

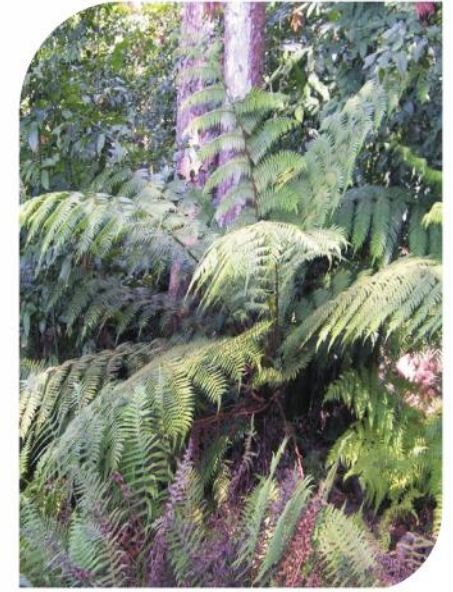
INDIAN BIO-DIVERSITY SCENARIO

Faunal Diversity		Floral Diversity	
Category	No. of Species	Category	No. of Species
Mammalia	423	Flowering Plants	
Aves	1,233	Gymnosperms	81
Butterflies	1,400	Angiosperms	18,532
Pisces	3,022	Non-flowering Plants	
Reptiles	526	Bryophytes	2,754
Amphibia	342	Pteridophytes	1,293
		Others	
		Fungi	15,223
		Lichens	2,528



Biodiversity study wrt prospecting of Marki Barka coal mine, Singrauli, Madhya Pradesh

Team from ICFRE for biodiversity study in Ankua forest, Saranda, Jharkhand



Landscape and biodiversity study in the Bunakha river valley, Bhutan

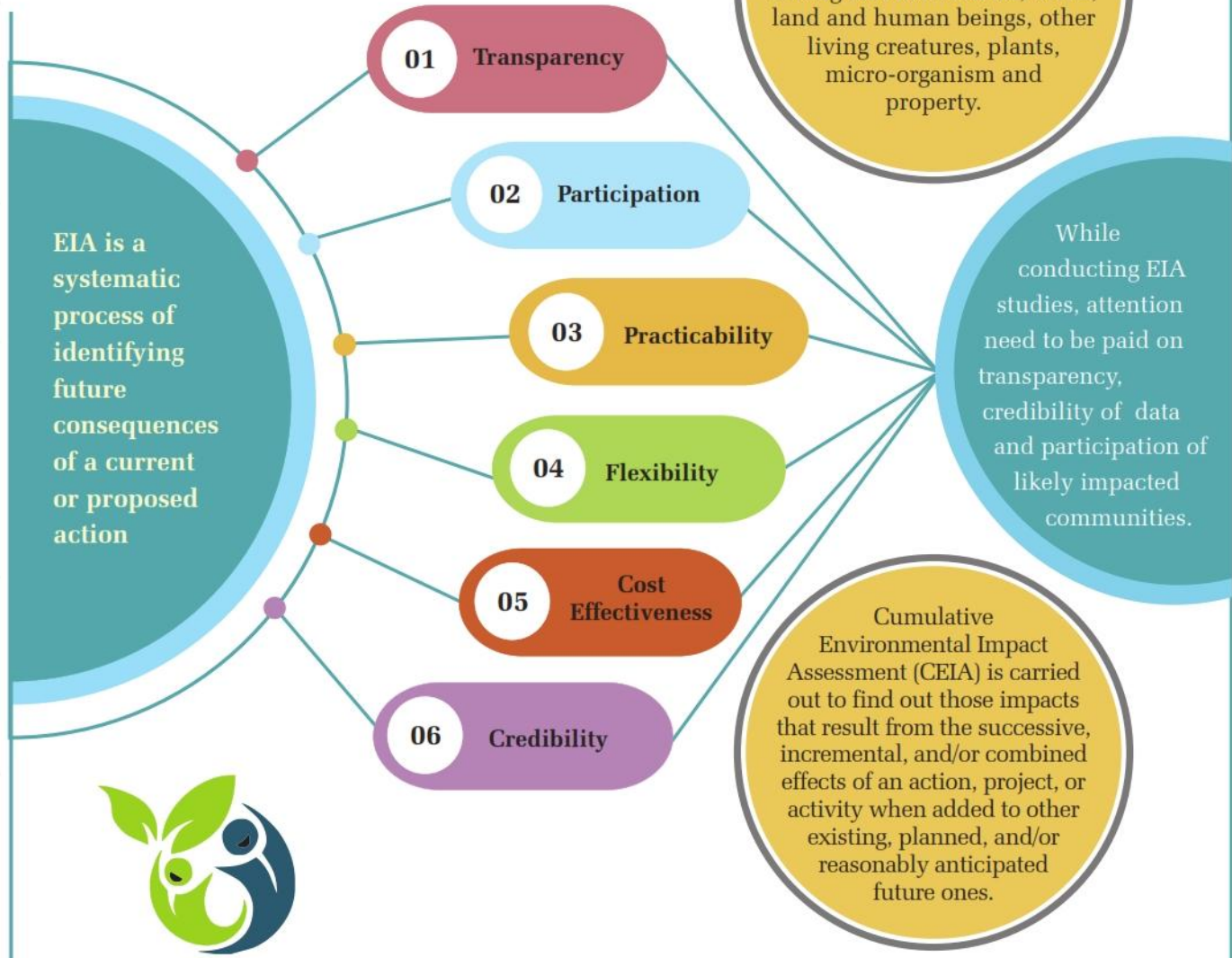
Landscape and biodiversity study in the Bauxite rich Jerrila Block, Narsipatnam, Andhra Pradesh

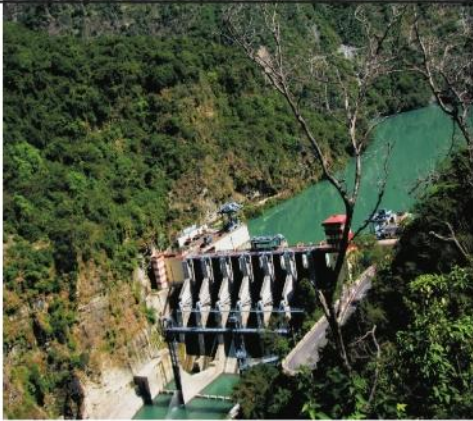


EIA/EMP and CEIA Studies

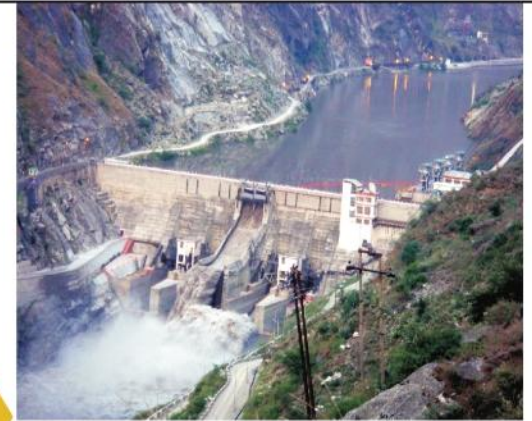
Environmental Impact Assessment (EIA) is a tool for safeguard of environment

- EIA is mandatory for more than 40 categories of projects falling under 08 major developmental sectors, as per EIA Notification, 2006 of the MoEF&CC, Govt. of India.
- EIA is a component of developmental planning and a management tool for decision making.
- EIA is a provision to minimize adverse impacts of developmental projects on the environment through time bound, adequate, corrective and protective mitigation measures.
- Merit of EIA/EMP report is one of the criteria for granting prior Environmental Clearance (EC) to the project by the authorised regulatory agencies.
- Post EIA monitoring for mandated compliance and provision for penal action on non compliance are parts of EIA process.





EIA reporting require inputs from 12 different subject areas having relevance for environment





Monitoring & Evaluation of Plantations/Afforestation Schemes



- Monitoring and evaluation of plantations/afforestation schemes give insight in to the appropriateness and field performance in terms of survival and growth of the plantations carried out.
- It also finds out the lapses in the process and indicates the course of interventions required by the management.



Studies on Dependency of Tribal People on Forestry Resources



Tribal people residing in forest or its fringe area are directly dependent on various forestry resources for their livelihood and income.





Monitoring & Evaluation of CAT Plans

Catchment Area Treatments (CAT) minimize the soil erosion and enhance the water conservation in a given catchment. Based on the features of the landscape, a variety of engineering and biological measures are implemented.

Catchment Area Treatments include construction of check dam, gabion, bund, gully plugging, bio-check dam, trench digging, afforestation, plantation of fruit and fuel wood species, entry point activities for welfare of inhabitant of the catchment, etc.

Monitoring and evaluation of the CAT Plan by a third party is mandatory. Under this process, the status of compliances of interventions planned is systematically checked and effectiveness of activities implemented is monitored and evaluated.

Prevention of Soil Erosion



Afforestation for Arrest of Soil Erosion & Increase in Vegetation



Water Conservation



Water Provision for Wildlife use



People Outreach



ENVIRONMENTAL AUDIT AND ENVIRONMENTAL PERFORMANCE EVALUATION IN CASE OF COAL MINES

ENVIRONMENTAL AUDIT (EA)

is a type of evaluation intended to identify environmental compliance and gaps in implementation by the management, along with suggested corrective actions for safeguard of environment.



ENVIRONMENTAL PERFORMANCE EVALUATION (EPE)

is a robust and repeatable process to compare past and present environmental performance using Key Performance Indicators (KPIs). KPIs help organisations understand how well they are performing in relation to their strategic goals and objectives.

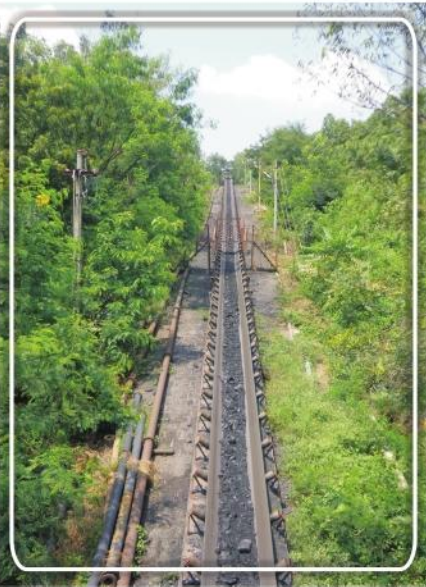
FINDINGS OF EA & EPE

helps the organizations for needful intervention and corrective actions to achieve its strategic objectives and targets.

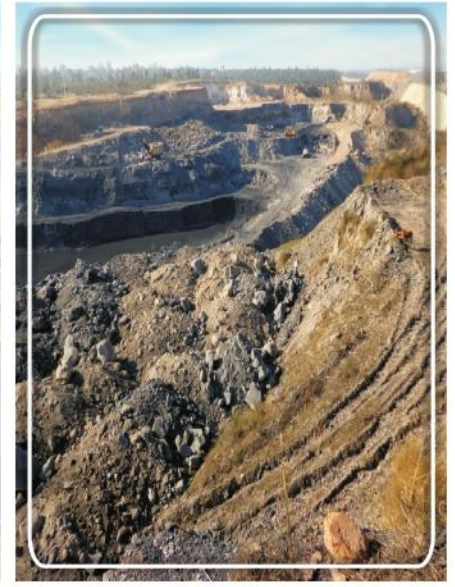
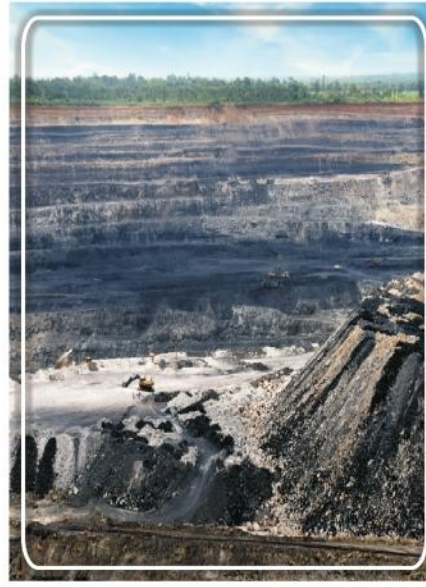


KEY PERFORMANCE INDICATORS (KPIs)

AIR



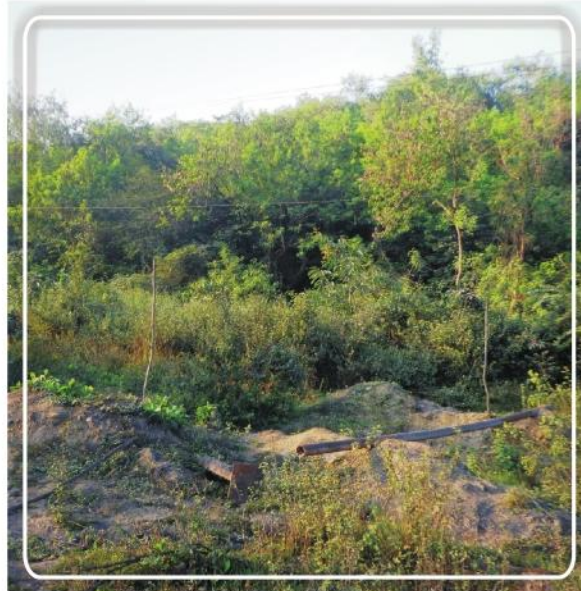
SOIL



WATER

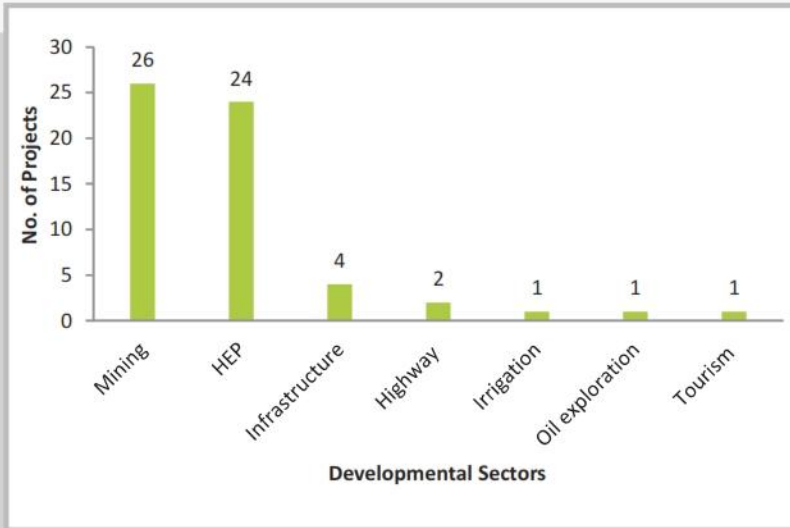


PLANTATION

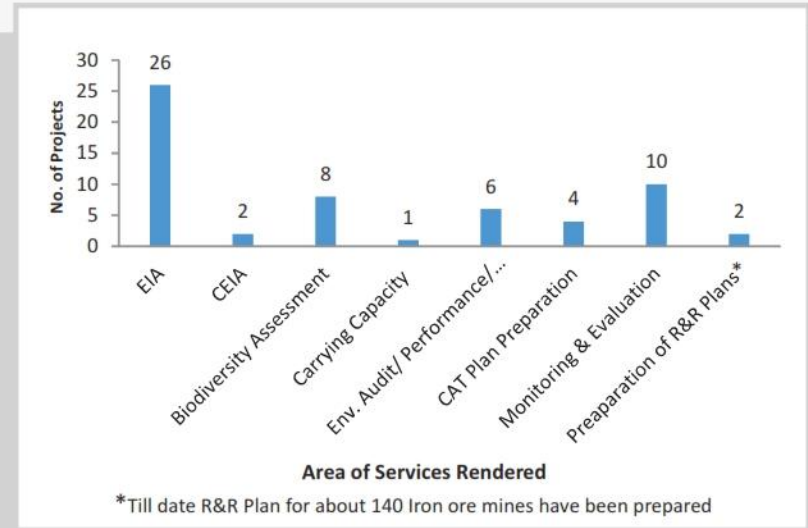


SOCIETY

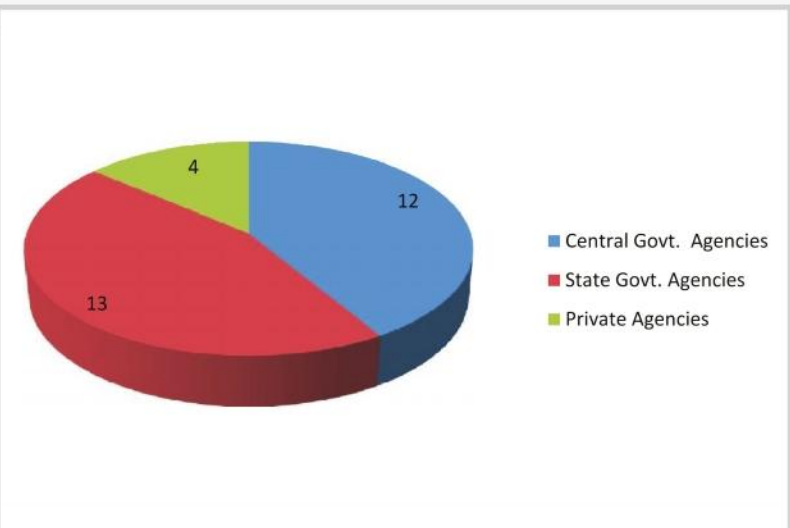




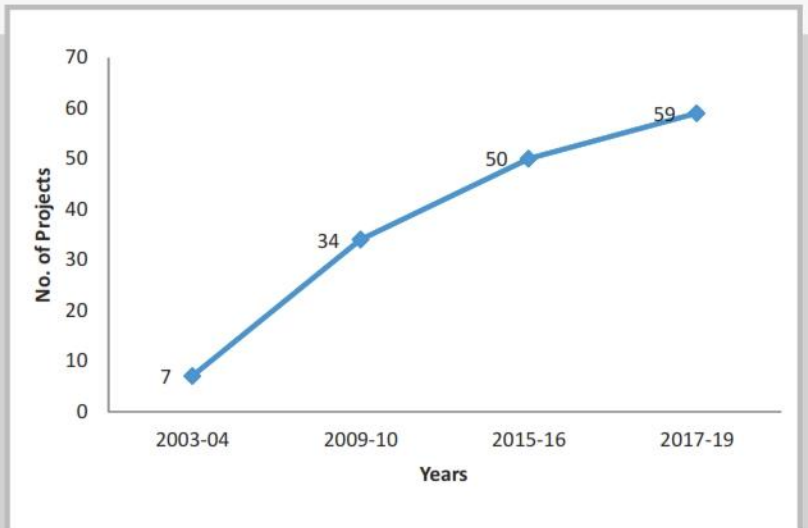
Developmental sectors of environmental services



Field of environmental services rendered



Clients of environmental services



Cumulative number of assignments

LIST OF CLIENTELE TO WHOM ENVIRONMENTAL SERVICES WERE RENDERED

HYDROPOWER PROJECTS

- Tehri Hydro Development Corporation India Ltd. (THDCIL)
- National Hydro Power Corporation Ltd. (NHPC Ltd.)
- Himachal Pradesh Power Corporation Ltd. (HPPCL)
- Department of Energy, Government of Himachal Pradesh
- Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India
- Uttarakhand Jal Vidyut Nigam Limited (UJVNL)
- National Thermal Power Corporation Ltd. (NTPC Ltd.)
- JSW Group of Companies
- Chhattisgarh State Electricity Board

MINING PROJECTS

(Iron, Coal, Manganese)

- MoEF&CC, Govt. of India
- Coal India Ltd. Kolkata and its subsidiaries
- Singareni Collieries Company Limited (SCCL)
- South Eastern Coalfields Ltd. (SECL)
- National Mineral Development Corporation (NMDC)
- Central Mine Planning and Design Institute Ltd. (CMPDI)
- Andhra Pradesh Mineral Development Corporation (APMDC)
- Essar Power Ltd., Jharkhand
- JSW Group of Companies
- Govt. of Karnataka
- Chhattisgarh Forest Department
- Odisha Mining Corporation Limited (OMCL)
- Odisha Forest Department

MONITORING AND EVALUATION

(Cultivation of Medicinal Plants, Plantation of Forestry Species, Accelerated Afforestation Programme and CAT Plan Activities)

- National Medicinal Plant Board (NMPB), GoI
- National Afforestation & Eco-Development Board (NAEB), MoEF&CC, GoI
- National Thermal Power Corporation Ltd. (NTPC Ltd.)
- Tehri Hydro Development Corporation India Ltd. (THDCIL)

INFRASTRUCTURE DEVELOPMENT

- Chandigarh Administration
- New Delhi Municipal Council
- Ministry of Culture, GoI

TOURISM

- Andhra Pradesh Tourism Development Corporation

OIL EXPLORATION

- Reliance Industries Ltd., Mumbai

IRRIGATION PROJECT

- Department of Water Resources, Gwalior, Government of Madhya Pradesh

HIGHWAY PROJECT

- Jaypee Ventures Ltd., Noida, Uttar Pradesh

SPECIAL APPRECIATIONS AND RECOMMENDATIONS FOR ICFRE SERVICES



Special appreciation by Vice Chairman and Managing Director, APMDC for quality work and report

Hon'ble Supreme Court recommended for engagement of ICFRE for Macro EIA studies in Bellary, Chitradurga and Tumkur in relation to Iron ore mining

Appreciated by HPPCL, THDCIL, JSW, NTPC, NHPC, etc. for EIA work conducted and quality report prepared by ICFRE for their respective project

CEC of Hon'ble Supreme Court recommended for engagement of ICFRE for Macro EIA studies in Goa in relation to Iron ore mining

MoEF&CC has identified ICFRE as expert organization for Biodiversity studies

Justice M. B. Shah commission recommended in his report on Jharkhand for engagement of ICFRE for conduct of Carrying Capacity Study of Saranda Forest for Iron ore production



For Environmental Services Contact:

Assistant Director General (EM)
Environment Management Division
Directorate of Extension

Indian Council of Forestry Research and Education

(An Autonomous Body of Ministry of Environment, Forest and Climate Change, Government of India)

Dehradun – 248 006 (Uttarakhand) India

Tel./Fax (O) : +91 135 2753882, E-mail : adg_eia@icfre.org, Website : www.icfre.gov.in

CREDITS

Dr. Sudhir Kumar, DDG (Extn.)

Dr. A. N. Singh, ADG (EM)

Dr. V. Jeeva, Scientist- F

Dr. Vishavjit Kumar, Scientist- E

Shri Chandra Sharma, Scientist- B

Dr. Anita Chauhan, Project Associate



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Directorate of Extension

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P.O. New Forest, Dehradun – 248 006, INDIA

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