

Annex 4.3  
Corporate Profile-GEMS

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**GLOBAL ENVIRONMENTAL MANAGEMENT SERVICES**

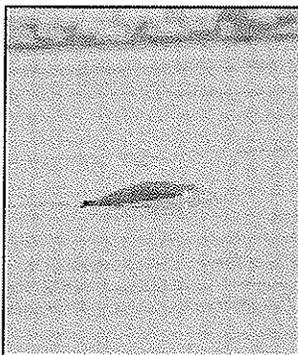


## Global Environmental Management Services Company Profile

Global Environmental Management Services is the apex company of GLOBAL ENVIRONMENTAL GROUP OF COMPANIES. The first company was established in July 1996 as Global Environmental Lab. Soon after, another company was formed as Global Waste Management Services.

Looking at increasing demand the facilities for waste management and environmental monitoring were established in Lahore as well to cater to the needs of Punjab & KP

After getting more and more experience and improvements in the field of Environment we merged as one company named "Global Environmental Management Services". The new entity consists of



Global Environmental, which offers services monitoring of emissions and effluents. At the same time, it also handles hazardous waste and ensures its safe and environmental friendly disposal.

GEMS is a consulting service which provides enormous services like Environmental Audits, Initial Environmental Examinations, Environmental Impact Assessments, Baseline studies and Training and Capacity building.

With our broad based experience and excellence in providing environmental services we have expanded our horizon and taken our operation to the Middle East and

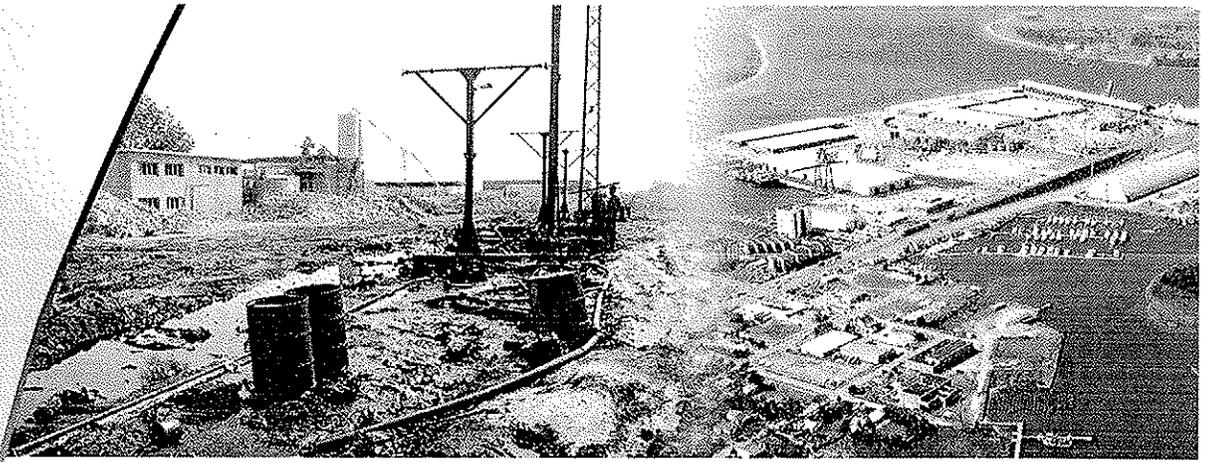
established office in United Arab Emirates (UAE).

We recognize our staff as being our most important resource. GEMS personnel have professional environmental and social experience extending throughout Pakistan and UAE. They are all qualified environmental and social scientists with complementary multi-disciplinary skills covering all major biomes of the environment. As a result we are able to offer accurate, independent and appropriate services to clients and to regulatory bodies.



Through our network of associates and affiliated companies we can also draw together expertise in a wide range of additional disciplines such as archaeology, hydrogeology, hydrology, social sciences, mathematical modeling, GIS and remote sensing, analytical chemistry, eco-tourism etc. to provide a comprehensive suite of environmental services.

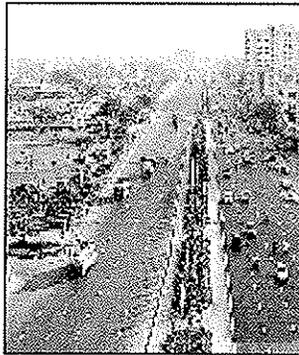




## Environmental Impact Assessments

For over a decade GEMS have conducted environmental impact assessments (EIA) in an expanding range of sectors including the energy (oil and gas industry, power plants etc), manufacturing industries (e.g. pharmaceutical, mineral fertilizers, textile, paper, food processing etc.), infrastructure (roads, highway's buildings etc.), ports and harbors', tourism, aquaculture and fisheries.

In most of our working sectors, the majority of industrial development takes place in areas where environmental and socio-economic sensitivities are high because of the abundance of natural resources, easy access and dependence of the local communities.



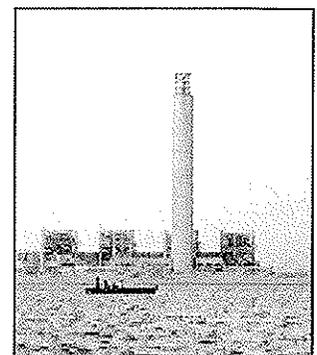
The EIA process requires a review of national and international legislation, an in-depth understanding of the proposed development, environmental baseline studies, impact assessment and the development of an environmental management plan (EMP) to minimize negative impacts and maximize positive effects. An EIA is required at an early stage in the project cycle to obtain the environmental permit from authorities that allows the development to proceed. However, more and more GEMS is providing input to the conceptual and detailed design phases of the project cycle. This allows potential environmental issues to be identified early, which enables issues

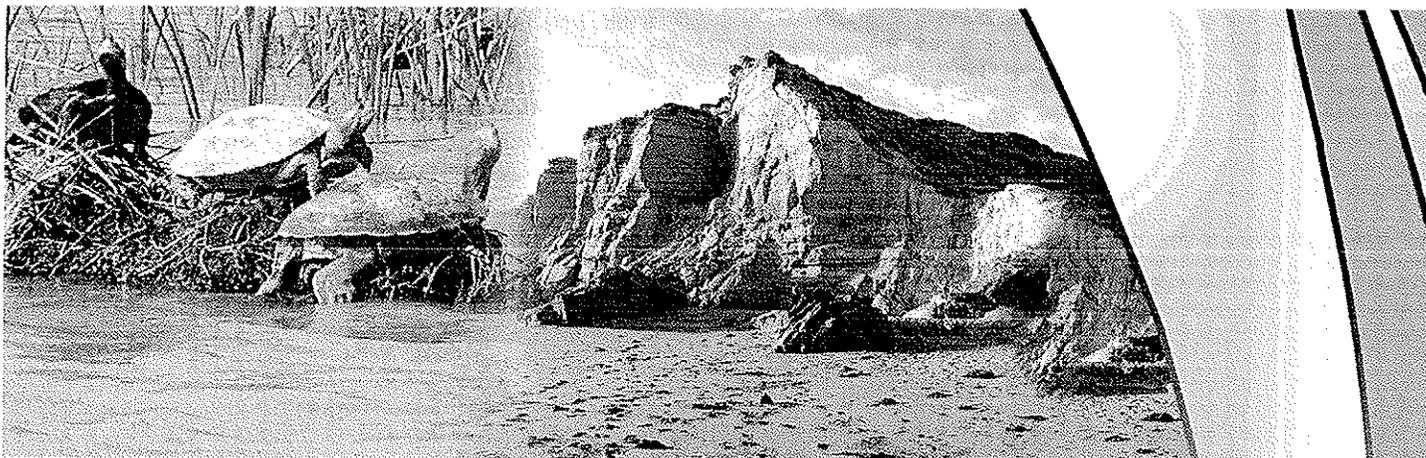
to design out rather than being mitigated at a later stage. For less complex projects wherever applicable we produce an initial environmental examination (IEE) sufficient to obtain the necessary permission on behalf of the client as per the legal requirements.



### Main Areas of Expertise

- Coastal, Urban and Residential
- Airports and Roads
- Heavy and Light Industries
- Ports and Harbors
- Oil and Gas - E & P
- Tourism Developments
- Energy Sector Project's

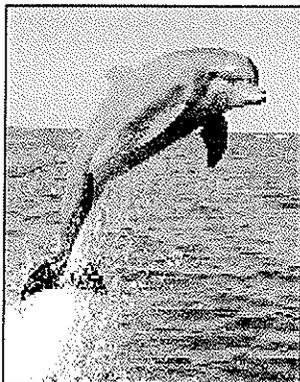




## Baseline Studies and Habitat Mapping

**B**aseline studies are required to establish an environmental benchmark against which future change may be measured.

These studies often involve measurement of physical, chemical and biological parameters. Habitat maps are a useful tool to assist planning for a development and are essential for resource management purposes in and outside of the protected areas.

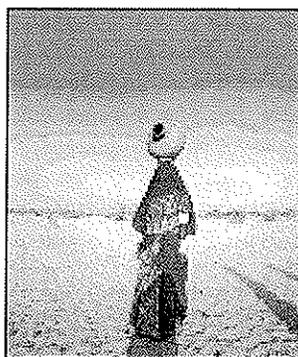


We have experience in surveying different types of ecosystems (including marine fauna, seaweed, mangroves and coral, as well as turtles, cetaceans, seabirds and other wildlife, terrestrial habitat including flora and fauna), sea and fresh water quality (including total suspended solids,

turbidity, temperature, salinity, nutrients, heavy metals and a wide range of other pollutants), meteorology, air quality (polluting gases including NO<sub>x</sub>, SO<sub>x</sub>, CO, and particulates etc); noise levels, lux measurement.

Through microbiological analysis we provide in depth knowledge about varied variety of water and food samples such as drinking water, waste water, in food section cereals, meat including rough and finish products (cooked or uncooked); parameter to be analyzed in these items are total colony count, total coliforms, fecal coliforms, fecal streptococci and enterococci, E.coli, Staaph.aureus, Salmonella spp. Pseudomonas spp. and Yeast and Mold count.

Our surveying techniques are all conducted according to national and international standards and almost all chemical and biological analyses are performed at our own laboratories which are both



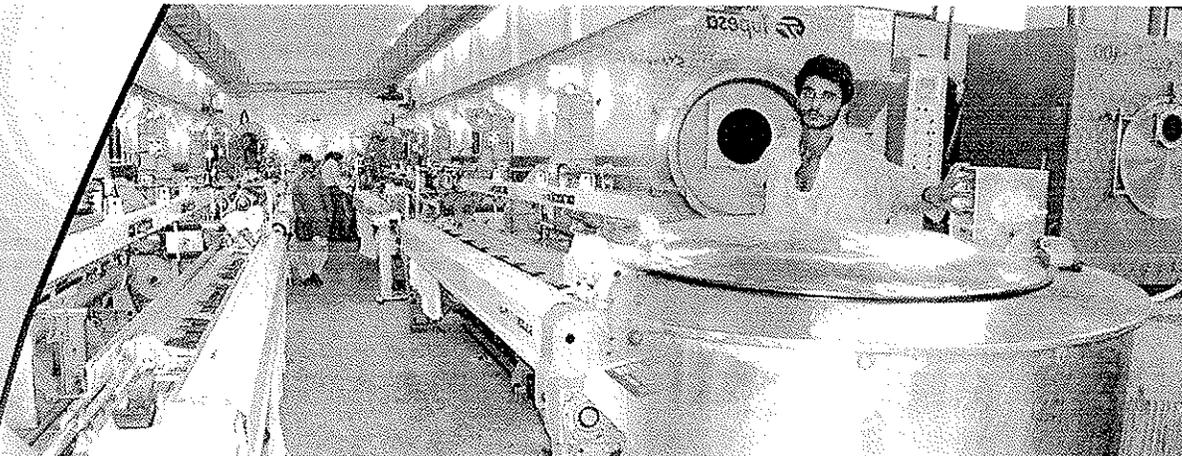
locally and internationally certified.

Where necessary we consult experts for detailed determination of ecological results. We have in-house capability of mapping services and are using the latest image processing and GIS software. We add value ourselves with extensive ground-truthing and image interpretation. We are also experienced in gathering social and economic data through rapid and participatory rural appraisal that has the added benefits of improving awareness of the development among the local communities.

### Main Areas of Expertise

- Marine and Terrestrial Communities (flora & fauna)
- Fresh and Seawater Quality Surveys
- Meteorology and Air Quality
- Socio-Economic Appraisals
- GIS Habitat Mapping and Modeling

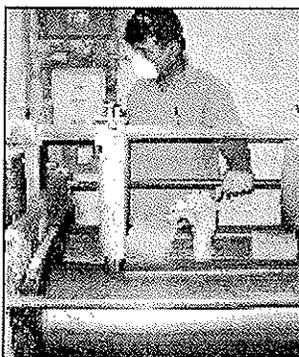




## Environmental Monitoring, Observation and Auditing

Environmental monitoring during the construction or implementation phase of a project is a common legal requirement. For ecologically sensitive areas, monitoring according to an environmental management plan (EMP) may be necessary throughout the project cycle, especially if the effects of a development on the surrounding environment are significant or uncertain.

Our services for environmental monitoring includes data collection, analysis and interpretation, and often covers a diversity of assets including air quality, noise, groundwater quality, fresh and seawater quality, biological diversity and habitat health. These are

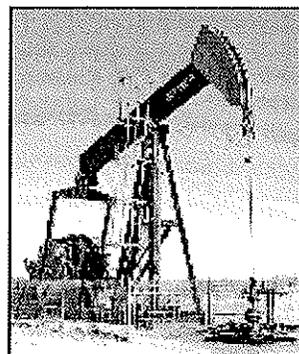


compared with national and international standards, or put into a national or regional context by comparing them with data collected from elsewhere in the region.

In order to do this effectively it is necessary to understand the natural daily, seasonal and yearly changes in background levels of all measured parameters in order to explain the cause of any changes and attribute them either to natural fluctuations or to disturbance from the development. To facilitate this we are able to access long-term databases of limnology (freshwater ecology) and oceanographic (water temperature, currents, etc.) and meteorological data (wind, temperature, precipitation etc.) from the region.

The strength of environmental monitoring is the early detection of environmental damage,

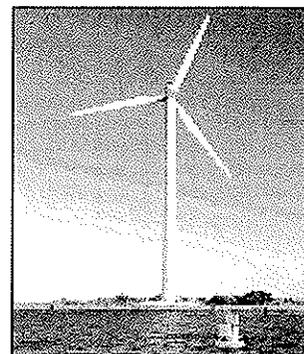
which can then be mitigated by effective management of its cause before significant environmental damage is caused. We have particular experience with long-term monitoring of project and as a result we have an extensive library of information as well as a strong working relationship with the relevant industries and government institutions.



Complementing our monitoring and observing skills is the experience that we have gained in conducting environmental audits to ensure compliance with permit conditions and national legislation.

### Main Areas of Expertise

- Coastal and Inland Development Impact Monitoring
- Freshwater and Marine Fauna Observing
- Oil and Gas E&P Monitoring
- Port Monitoring
- EIA Auditing
- Industrial Auditing
- Policy and Legislation Review





## Environmental Laboratories & Waste Disposal

The laboratory division of GEMS operates by the name of Global Environmental Lab (GEL). GEL operates two fully functional environmental laboratories which are equipped to provide analytical and environmental monitoring services for air, soil and wastewater analysis. The environmental laboratories are modern facilities equipped with latest technical aids and experienced staff trained to conduct on-site sample collection, analysis and in-lab testing. GEL also has a mobile environmental



monitoring lab capable of monitoring various noise and air quality parameters.

Our laboratory evaluates effluent samples for all environmental parameters required by the National Environmental Quality Standards (NEQS).

Our Lab also provides assistance to wide range of industry

in meeting its regulatory and internal monitoring and reporting needs. In addition, GEMS provides advisory services to its clients on sampling protocols (collection, preservation, storage, and handling methods), chain of custody transfer, sampling techniques (composite or grab sampling), and laboratory test methods and procedures.

We own two commercial waste management facilities including, recycling facilities, commercial incinerators, R&D facilities for waste disposal, bio-remediation services and waste management consultancies. Our incinerators are approved by the relevant Environment Protection Agencies of Pakistan and have incinerated over 400,000 kgs of hazardous industrial waste.

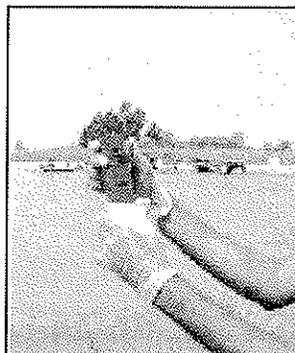
Some examples of the R&D projects at our waste management division include the disposal of pesticides contaminated packaging material by alkali



treatment, acetic acid and chlorobenzene mixture (separated and recovered), recovery of antimony salts from spent catalyst from ICI polyester plant, recovery of cobalt and manganese salts from spent catalyst from PTA plant etc.

### Current Services

- On-Site Environmental Monitoring Services
- Environmental Laboratory Testing
- Ground water & Soil Sampling
- Sample Collection
- Effluent Characterization
- Field Measurements
- Mobile Lab
- Hazardous Waste Management & Disposal Services
- Incinerator Design and Construction



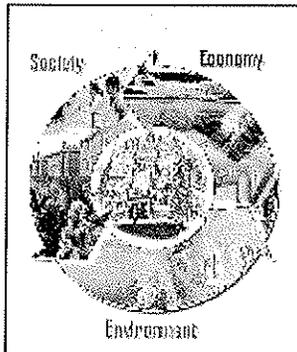
## Cleaner Production for Industries

Compliance with Environmental Laws is Cheap, Easy and even Profitable!!!

Over the last three decades the industrialization has increased rapidly as this century is termed as century of industrialization.

As the industrialization increases the amount of pollution has also increased very rapidly. This has forced the governments to implement stringent environmental legislations demanding compliance with environmental laws.

Compliance with environmental laws is generally expensive and requires a lot of investment in building infrastructure such as wastewater treatment plants, emission control technologies and waste disposal etc. Sometimes it can be extremely expensive to comply the environmental legislations.



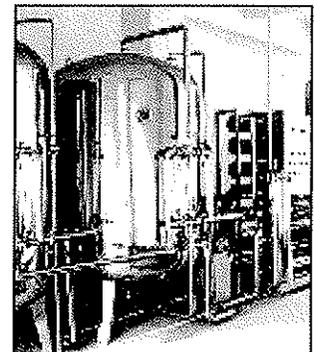
However, we at GEMS believe that compliance with environmental laws can be cheap, easy and even profitable at some occasions.

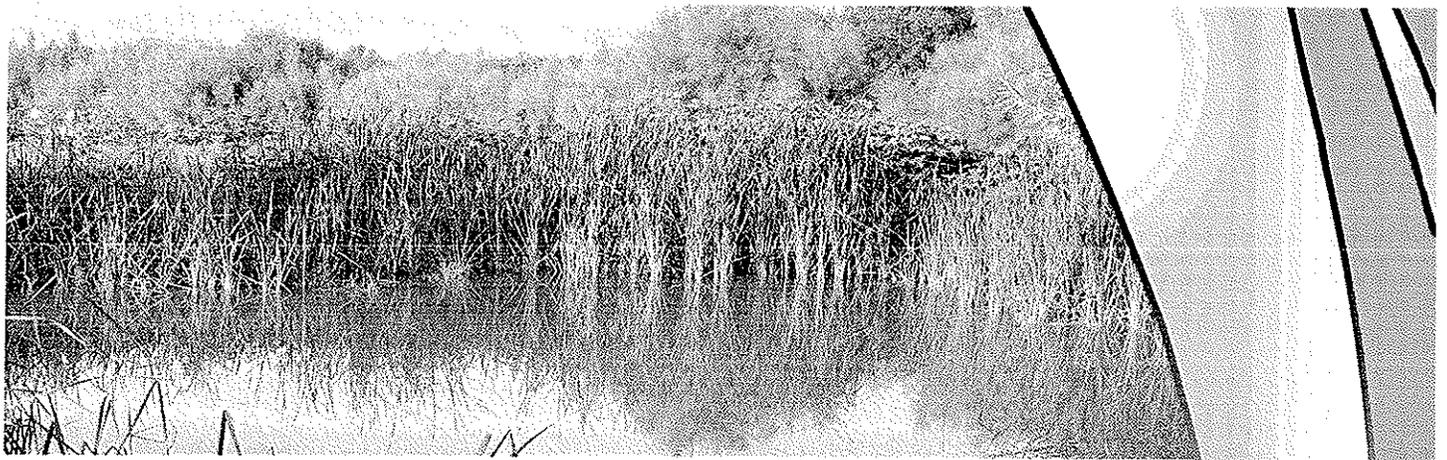
Our team of experts in various fields with extensive training in cleaner production is capable to guide industry to make minor process amendments and not only save money but also comply with environmental laws without much hassle.



### Main Areas of Expertise

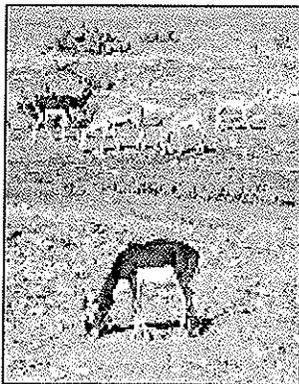
- To determine the Potential Threats to Environment
- To Generate Cleaner Production options within an industry
- Review the existing technology and compare with other better options with minimum or no expenditure





## Natural Resource Management

The sustainable use and conservation of natural resources requires effective planning, resource assessment and management. This is often the responsibility of governments and state research organizations. We work with government departments, universities and international organizations on projects that aim to manage resources sustainably for the benefit of present and future generations.

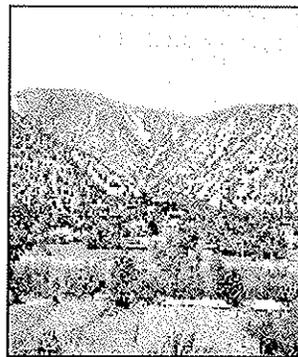


Establishment of Protected Areas (PAs) is one tool that governments use to manage important or sensitive natural resources. We specialize in assessments and management planning for PAs as well as development of alternative income generating schemes

in collaboration with local communities.

Rational use of a natural resource requires that an assessment be made of its status and its capacity for exploitation. To date we have undertaken, often in collaboration with Ministerial and other staff, studies and resource assessments at the national level that have led to the development of government policy and implementation of action plans. With our expertise in impact assessment we also specialize in conducting resource assessments following extreme natural events and human disturbances such as cyclones, earthquake, severe storms & floods, oil spills etc.

Emerging areas of natural resource use, such as bio-prospecting, eco-tourism and aquaculture, require the formulation of new government policy, zoning plans and guidelines for best practices.



These are the areas where we can provide guidance and expertise.

### Main Projects

- Baseline Study of Indus Dolphin in Game Reserve & from Guddu Barrage to Kotri Barrage
- Ecological Studies of selected protected areas in Khyber Pakhtoonkhawah
- Ecological and Archeological Survey in Hingol National Park
- Minerals Resource Survey of Saindak Mines
- Baseline Survey of Khirther Range

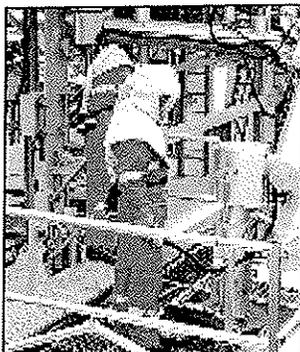




## Applied Research and Training

We organize, design and conduct a number of applied long-term research programs relating to the brown and green issues of the environment in Pakistan, UAE and elsewhere. Over the years this has led to the acquisition of a large body of pertinent scientific literature and innumerable links with local and international researchers providing an essential resource on which we draw specialist advice and background information.

The results of our research are presented at international workshops, conferences and symposia, and published in scientific journals. This information is also used in the development of public awareness and educational purposes. We provide information based on our applied research to governments and international bodies as well as a number of academic institutions.



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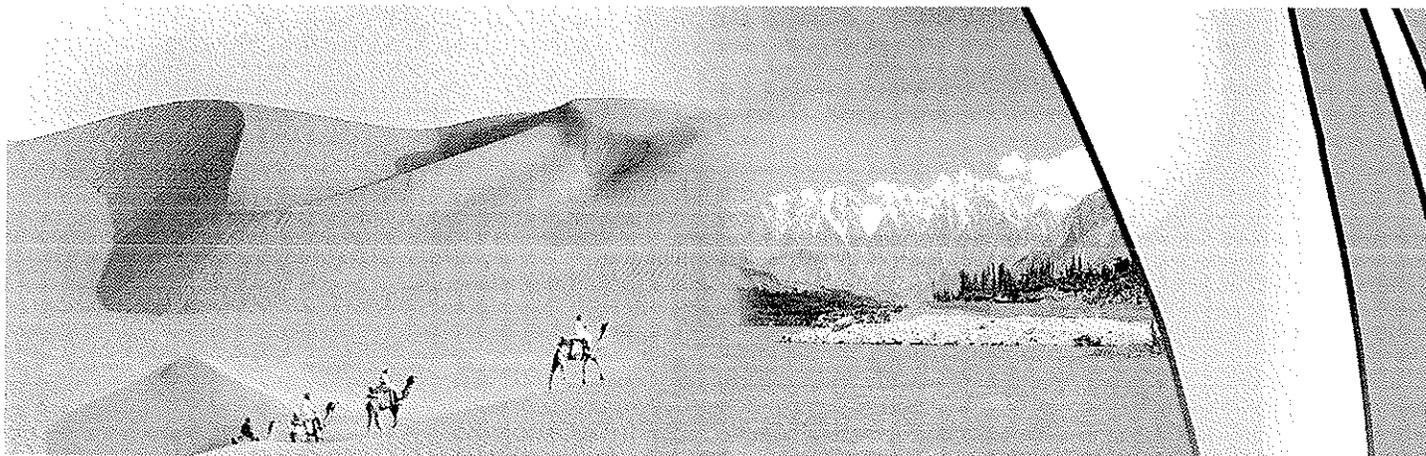
- Biodiversity Conservation & Management
- Rehabilitation/ Resettlement
- Emergency Response Programs
- ISO Trainings
- Waste Generation & Storage Practices
- Hazardous Waste Manifest
- Pollution Prevention Programs
- Project Design & Management
- Protected Area Planning & Management
- Urban Planning
- Corporate Governance



### Main Areas of Training and Capacity Building

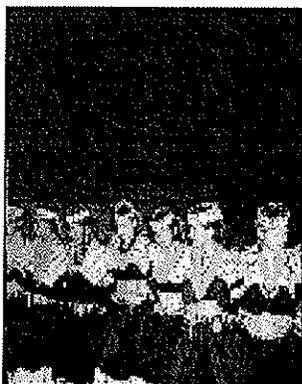
- Health Hazard Awareness
- Safety, Health and Environment
- Environmental Management Systems
- Environmental Resource Management
- Fire Prevention and Protection





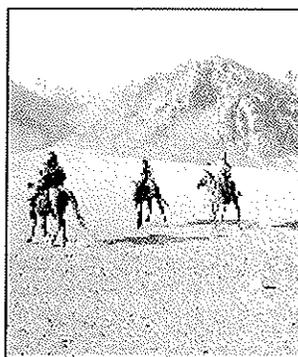
## Tourism Development

Over the last few decades there has been a spectacular growth in the number of tourists worldwide, and many of them travel specifically to experience the culture and natural environment overseas. The development of tourism in general, and ecotourism in particular, requires specialist environmental services in its planning and operation to ensure that the resource base on which it is founded is not damaged by the facilities, activities and tours themselves. With considerable experience in environmental impact assessments and resource management in the region, we can offer the necessary advice and planning to develop tourism resources, particularly in sensitive environments and protected areas. Increasingly, GEMS is working with developers at a strategic and conceptual level to increase the value of tourism development while avoiding activities that might degrade the quality of resources.



Apart from environmental considerations tourism can potentially affect the culture and socio-economics of hosting communities. Responsible tourism must understand and engage the local community before integrating them into the planning process. With our extensive network of contacts at the community level, we can assist in coastal and marine tourism and eco-tourism development.

Furthermore, the visitors' experience can be enhanced by specialist interpretation and explanation of the natural world. Our staff has growing experience in tour guiding, developing itineraries, tourism master planning, eco-tourism training, development of low-cost accommodation and camps,



logistics, marketing and promotion of tours and attractions, developing multi-media materials for visitor and interpretation centers, and best management practices within the eco-tourism sector.

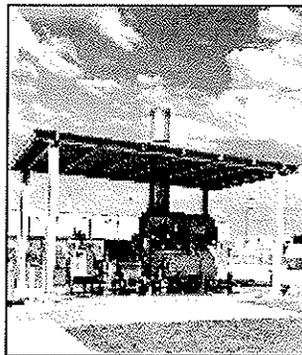
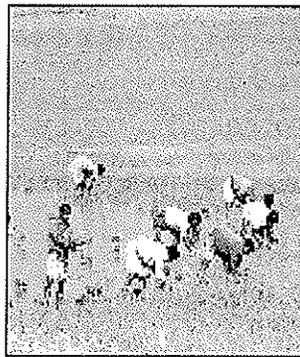
### Main Areas of Expertise

- Protected Areas & Natural Areas Tourism
- Coastal Tourism Development EIAs
- Nature Reserve and Natural Resource Management
- Master-Planning and Concept Design Support
- Tourism Activity Planning
- Tour Guiding
- Best Practice and Due Diligence



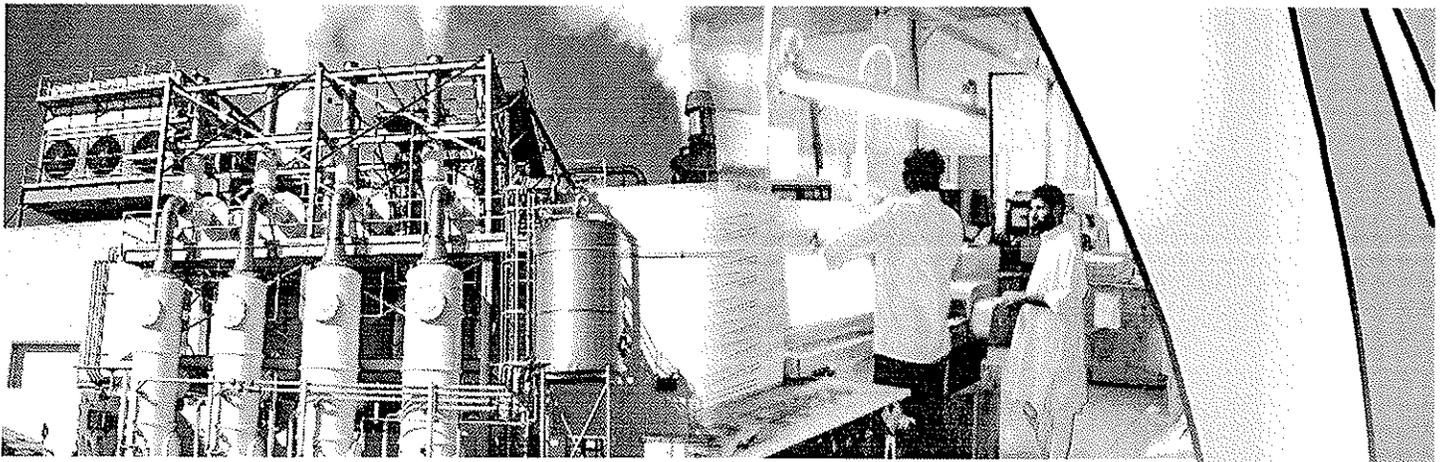


## Selected/ Flagship Projects



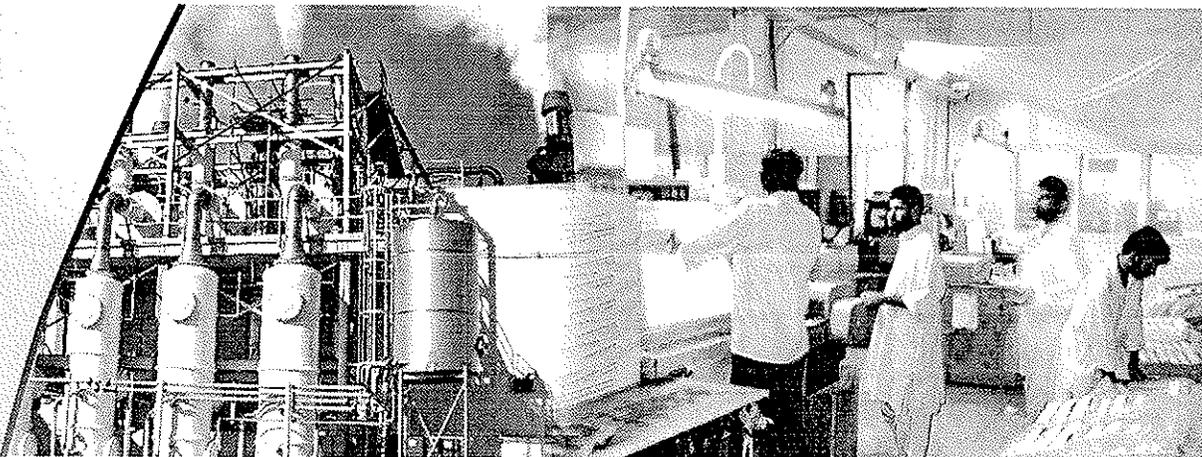
**G**EMS has conducted a number of projects since its inception. The highlights of our major projects are:

- More than 80 Environmental Impact Studies
- Environmental Audit of Over 70 Industries in Hub, Balochistan
- Conducted EIA of Pakistan's tallest 70 story building Bahria Icon Tower
- Conducted IEE of 1st Pakistan's Ground Control Station of Satellite in Karachi by SUPARCO
- EIA of 231.8MW Barge/Ship Mounted Rental Power Plant in Arabian Sea, near Karachi
- 5-year environmental monitoring project of National Highway Improvement Program
- EIA of Refinery Expansion Project, Chittagong, Bangladesh
- Pollution Survey for Waste Dumping Site Survey of Islamabad & Karachi (JICA)
- Conducted EIA of PAKGAS LNG Project in Port Qasim, Karachi
- Conducted EIA of NESTLE Bottle Water Plant Extension, Port Qasim, Karachi



## Major Clients

 <p>ICI Pakistan</p>	 <p>Nestle Pakistan</p>	 <p>Unilever</p>
 <p>Toyota Motors</p>	 <p>3M Pakistan (Pvt) Ltd.</p>	 <p>Mabani Steel</p>
 <p>Abbot Laboratories Limited.</p>	 <p>Wyeth Pakistan Ltd.</p>	 <p>Japan International Corporation Agency</p>
 <p>Parke, Davis &amp; Company Ltd.</p>	 <p>English Biscuit MFG Pakistan</p>	 <p>Procter &amp; Gamble</p>
 <p>UNDP</p>	 <p>Habiburton Ltd. Pakistan</p>	 <p>Eli Lilly Gohar (Pvt.) Ltd</p>
 <p>Merck Sharp &amp; Dhome of Pak. Ltd.</p>	 <p>Muller &amp; Phipps (Pvt.) Ltd.</p>	 <p>Bayer Pakistan Ltd.</p>
 <p>Caltex Oil (Pakistan) Ltd.</p>	 <p>Karkey Karadeniz Electik Uretim A.s</p>	 <p>Engro Foods (Pvt) Ltd.</p>



## Major Clients

 <p>Oil &amp; Gas Development Company Ltd.</p>	 <p>Habib Oil Mills (Pvt) Ltd.</p>	 <p>Bosch Pharma (Pvt.) Ltd.</p>
 <p>Dawlance Pakistan Ltd.</p>	 <p>Polish Oil Gas Company (Pvt.) Ltd</p>	 <p>Government of Sindh</p>
 <p>Bristol-Myers Squibb</p>	 <p>Pakistan Tobacco Company</p>	 <p>Novartis Pharma (Pakistan) Ltd.</p>
 <p>Sante Private Ltd.</p>	 <p>Engro Group Ltd.</p>	 <p>National Institute of Oceanography</p>
 <p>Hino Park Motors Ltd</p>	 <p>BASF Chemicals &amp; Polymers Pak (Pvt.) Ltd.</p>	 <p>Rafhan Maize Products Company Ltd.</p>
 <p>Hilton Pharma (Pvt.) Ltd.</p>	 <p>Shan Foods Pvt. Ltd.</p>	 <p>Pakistan State Oil</p>

