Environmental Issues In Atlas Cartography

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ABSTRACT

In recent years environmental research has developed versatility, involving scientific survey, data generation, laboratory analysis, risk assessment and suggestion of action plans. Thematic cartography has incepted within this domain and environmental mapping is now considered essential for environmental management. Areas that are suitable for industrial development, monuments needing protection, industrial estates that are severely polluting the surroundings, areas where reforestation is needed, densely populated regions and the tribal territory where industrialization might cause health hazards, stretches of rivers where level of contamination is high, chemical quality of ground water in terms of its suitability for human use, coastal zones polluted by industrial effluents, location of wildlife sanctuaries, national parks and biosphere reserves-the dwelling places of endangered species and many more environmentally relevant issues could be shown in maps/ atlas. **The Environmental Atlas of India** is an outcome of aforesaid thoughts.

INTRODUCTION

India today is passing through a phase of rapid industrialization and development. This is leading to over exploration of resources and ecological degradation. The need for a judicial management of natural resources is necessary for maintaining the ecological balance. To assess the status of environment of any region, properly designed thematic maps showing the impact of different polluting elements are helpful; it makes the environmental information easily understandable by the decision makers as well as common people.

To implement this concept, National Atlas & Thematic Mapping Organization (NATMO), a specialized unit of the Government of India on thematic cartography, in collaboration with the Central Pollution Control Board (CPCB), the apex body for prevention and control of environmental pollution, has compiled the **Environmental Atlas of India**, the first of its kind in the country.

SCOPE AND OBJECTIVE

Now a days, environmental studies involve scientific survey, systematic data generation, laboratory analysis, risk assessment and suggestion of action plans. Thematic cartography has incepted within this domain and environmental mapping is considered indispensable for environmental management. Sites suitable for heavy industries, archaeological monuments needing protection, industrial nodes that are critically polluting the surroundings, areas needing reforestation, densely populated regions and tribal territories where industrialization might cause health hazards, stretches of river where surface water is highly contaminated, ground water quality, ambient air quality, coastal zones polluted by industrial effluents, wild-life sanctuaries, national parks, biosphere reserves-the habitat of a variety of endangered species and many more environmentally sensitive issues could be depicted in maps.

Environmental information is a vital tool for regional planning and decision-making process. That is why Central Pollution Control Board and National Atlas and Thematic Mapping Organization took initiative for bringing out the Environmental Atlas, the first of its kind in India.

The main objective of this Atlas is to compile information on various facets of environment and pollution control by means of maps, tables, illustrations, literature /text. The Atlas would help the regulatory bodies, entrepreneurs, planners, common people, students and academic institutions concerned with environmental research, protection and improvement.

DATA- BASE

This Atlas is a compilation work on environment related issues. It has been produced with the help of a variety of maps and documents existing at NATMO archive. Data on hazardous wastes, surface water quality of rivers, coastal water quality, critically polluted areas, 17 categories of grossly polluting industries, municipal solid wastes, organic waste water generation potential, ambient air quality and vehicular pollution were compiled on the basis of information available at CPCB. In addition, data were procured from other offices, like the Wetland Commission, Ministry of Environment & Forests, State Pollution Control Boards, Central Ground Water Board, Ministry of Surface Transport, Indian Council of Agricultural Research, National Bureau of Soil Survey & Land Use Planning, India Meteorological Department, Archaeological Survey of India, Oil Co-ordination Committee, Fertilizer Association of India, Census of India and Central Road Research Institute.

Developing a systematic data- base for a field like environment for the country as a whole is not an easy task. The information so far available on environment might be enormous but that is true for some specific areas, not for the country as a whole. Some of the constraints regarding data available for mapping were as follows:

Data from different sources may be contradictory to one another.

Data is not sufficient for mapping the country as a whole.

Data is not adequate enough to workout trends.

Information procured for a particular station may vary from season to season, year to year.

That is why, in this atlas, the cartographic work is often experimental type and to some extent generalized.

THEMATIC CONTENTS OF THE ATLAS

Thematic issues of this atlas have been selected keeping in mind the following issues:

To depict the natural and cultural ambience.

To preserve the eco-system.

To identify major sources of pollution.

To identify critically polluted areas.

To demarcate ecologically degraded areas needing conservation.

To plan optimum utilization of natural resources.

To highlight the pollution control organizations, research institutes.

The Atlas contains the following sections and chapters:

THEMATIC CONTENTS OF THE ATLAS:

Section 1 General		
Chapter 1	Administratrative divisions of India	Historical background of Indian states, situation after independence; up to district level.
Chapter 2	The Land Physiography Soil types Land capability Land use	Physiographic divisions of India. Genetic classification of soils, soil- depth. Productivity/ suitability classes. Land use categories.
Chapter 3	Climate and Natural vegetation Climatic regions Vegetation types and forest cover	Climatic regions, rainfall& temperature characteristics. Vegetation types, forest cover.
Chapter 4	Water resources Drainage Ground water resources Other water resources	Rivers, river basins. Ground water potential. Lakes, wetlands.
Chapter 5	Natural hazards	Cyclone, earthquake, flood, drought.
Chapter 6	Population Density of population Growth of population Cities and towns Areas with specialized skills Livestock	Density distribution (district-wise). Decadal growth. Urban centers and working force. Handicrafts centers. Bovine population.
Section II Major Sources of Pollution		
Chapter 7	Manufacturing industries	Industry profiles.
Chapter 8	Vehicular pollution	Vehicular emission load in major cities.
Chapter 9	Water supply and sanitation	Generation of organic load in domestic sector.

Chapter 10	Municipal solid waste generation	Ash, fine earth, paper, metals, glass, plastic, textile.
Chapter 11	Hazardous waste generation	18 categories of hazardous wastes.
Chapter12	Mines and minerals	Minerals extracted, mining centers.
Chapter 13	Consumption of fertilizer	Consumption in kg /ha.
Section III	**Environmental Quality**	
Chapter 14	Ambient air quality in cities: residential, industrial	Concentration of air pollutants.
Chapter 15	River and Coastal water quality	Surface water quality.
Chapter 16	Ground water quality	Chemical characteristics.
Chapter 17	Land degradation	Factor leading to land degradation.
Section IV	**Environmentally sensitive areas**	
Biosphere reserves, national park, wild-life sanctuary, tiger project, heritage sites, coral reef, wet land, forest classes, flood-prone areas, areas with specialized skills, beach resort, hill resort, archaeological sites, mining sites, industrial growth centers, critically polluted areas.		
Section V	**Pollution Control**	
Chapter 19	Pollution control authorities and other institutes	Environmental organizations: Pollution control boards, DOD, IIT, CSIR and other institutes.
Chapter 20	Pollution control in major polluting industries	Pollution control in 17 categories of industries.
Chapter 21	Pollution control in problem areas	Critically polluted cities.

The Atlas is an example of experimental cartography. It has to be updated and enriched from time to time.

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