ENVIRONMENTAL STUDIES

(CONCEPTS, IMPACTS, MITIGATION, AND MANAGEMENT)

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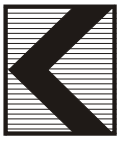

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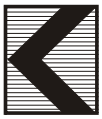

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PREFACE

Environmental degradation has been a major concern since past few decades, because of economic growth and development across the world has caused major impacts on the Earth's ecosystems and natural resources to an extent that can limit the well-being of future generations.

The ignorance of people about retaining the ecological balance, distancing from Indian traditions which used to emphasize the need for conservation and sustainable use of resources are also the reasons for degradation of environment. The continuing large scale urbanisation, population explosion, industrialisation, commercialisation and agriculture has caused such vast impacts on our environment that the very existence of man has come under a threat. Sustainable development, under these circumstances has become the prime necessity of today.

All the above factors are responsible for progressive decline in the quality and magnitude of natural resources including clean air, water, healthy soil, forests, bio-diversity. This has also caused other environmental problems such as desertification, hunger, malnutrition, acid rain, ozone depletion, global warming etc.

In view of the above, efforts are being made at international and national levels towards the right to healthy environment. These efforts have created awareness on environmental issues in NGOs, environmentalists, intellectuals etc.

India has recently started realising the importance of the environment and of the environmental education. Following the 2001 Supreme Court directive, the environmental education has been or is being included in the curriculums right from school stage to the College/University level.

This book covers the UGC syllabus for under-Graduate courses, and also the syllabii for technical and other Universities for different disciplines, may it be in the name of environment studies, environmental science, ecology, or natural resource management. This book is written to bring about an awareness of a variety of environmental concerns and deals from concepts through impacts, mitigation to management.

I hope this book will be useful for the students of all the streams as well as professionals in the field. I would welcome suggestions which may be received from the readers, for further improvement of this book.

ACKNOWLEDGEMENT

We feel great pleasure in presenting the first edition of Environmental Studies in the hands of the readers, the students. Even though, there are many textbooks available in the market, the authors have attempted to bring the material in the best possible manner after realizing the difficulties generally faced by the students while studying the subject.

The help received from Er. Himmi Gupta, Assistant Professor, National Institute of Technical Teachers Training and Research, Chandigarh for checking and proof reading the manuscript is thankfully acknowledged. The valuable comments led to the betterment of the book.

We are grateful to the entire team of M/s Khanna Book Publishing Company (P) Ltd., Delhi for extending their full cooperation for early publication of this first edition.

ABOUT THE AUTHORS

Prof. M.P. Poonia. Born on 7th July, 1959 in a small village of Rajasthan state in India, Prof. M.P. Poonia is specialized in the areas of Mechanical Engineering (IC Engines, Gas Dyanics, Ref. & AC), Renewable Energy and Sustainable Development. He is M.Tech (Mech.) and Ph.D (Thermal Engg) from Indian Institute of Technology, Delhi. He possesses more than 30 of total experience, out of which 6 years as Principal of Govt. Engg. College, Bikaner (Rajasthan) and 1 years and two months as Dean, Planning and Development in MNIT, Jaipur, (Rajasthan). He has published 80 papers in National and International Journals and published several books and manuals in the field of Mechanical Engineering. He has published/edited 08 Nos. books and 02 Lab Manuals. He is the Member of IEI, ISTE & Society of Automotive Engineers. Prof. Poonia is also a google Scholar. On 20th January, 2017, Prof. Poonia took up the responsibility of Vice Chairman, All India Council for Technical Education (AICTE), New Delhi. During the period from 20th July, 2012 to 18th January, 2017, say around a period of 4½ years, Prof. Poonia served as Director, National Institute of Technical Teachers Training and Research (NITTTR), established by Ministry of Human Resource Development, Govt. of India, Chandigarh (India). Prof. Poonia made significant contribution as a Director, NITTTR, Chandigarh for the growth and development of technical education in the northern states of India and to conduct of sub-regional and in-country programmes in collaboration with Colombo Plan Staff College for Technician Education, Manila, Philippines. Under his able leadership, the institute has to its credit the conduct training programme for Nigeria. He has undertaken projects sponsored by All India Council for Technical Education, Deptt. of Science and Technology, Delhi and Govt. of Rajasthan and MHRD, Govt. of India. He is the recipient of many Awards for his academic achievements and National Award for the Empowerment of Persons with Disabilities – 2013 by the Hon'ble President of India on 3rd December, 2013 in New Delhi in recognition of outstanding performance in the field of Best Institution for Empowerment of Persons with Disabilities in the country. During his tenure as Director, NITTTR, Chandigarh, he remained member of Board of Governors of, as many as 20 Government/ Autonomous bodies/Universities in the state of Punjab, Haryana, Himachal, Delhi and Chandigarh. He has visited many countries USA, China, Canada, Thailand, Singapore & Sri Lanka.

S.C. Sharma. After graduation in 1966 joined as Lecturer in Mechanical Engineering. He had been associated for more than 4 decades in various fields including teaching and management of projects in Indian and abroad in different capacities. While working in hydropower projects for more than 15 years he was actively associated with various environmental, and Rehabilitation & Resettlement issues and successfully resolved various complicated issues. He has also worked as consultant for matters related to safety, environmental, and R&R.

He has written about a dozen books on subjects related to engineering and management including management of projects.

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