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Booklet - 4
Contents Of Important materials on
Environment & Ecology

Chapter-1. All about Environment Science

Introduction

Environment issues of Global concern

Values of Nature

Institution of Environment

People in Environment

Chapter-2 Natural Resources

Forest Resources

- (i) Forest Functions
- (ii) Ecological significance of forest
- (iii) Deforestation
- (iv) Conservation
- (v) Forest & People
- (vi) India's forest & REED +
- (vii) Forest Policy & Legislature frame work
- (viii) Forest governance

Mangroves

Water Resources

- Main Source of Water
- Consumption Pattern
- Reason for decline of ground water
- Dams
- Sustainable water management

Food Resources

- Introduction
- World food problem & Environment concern.

Energy Resources

- Introduction
- Energy Resource
- Types of Energy

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- Environment Impact of fossils fuels.
 - (a) Oil & its Environment impact.
 - (b) Coal & its Environment Impact.
 - (c) Natural gas & its Environment Impact
- Sustainable Energy
 - (a) Nuclear power & its environment impact.
- Renewable energy
 - (a) Hydro electric power
 - (b) Solar Energy
 - (c) Biomas Energy
 - (d) Wind Power
 - (e) Tidal & wave power
 - (f) Thermal Energy

Land Resources

- Land degradation & its causes.
- Land use planning
- Desertification & its causes.

Role of an individual in conservation of Natural Resources.

- Energy Conservation
- Water conservation
- Soil Conservation

Chapter-3 Biodiversity

Types of Biodiversity

- Genetic diversity
- Species diversity
- Ecosystem diversity

Method of measuring Biodiversity

- Alpha diversity
- Beta diversity
- Gamma diversity

Biographic Classification of India

Threat to Biodiversity

- Human population grown, industries land use pattern.
- Poaching

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- Man wild life conflicts

Conservation of Biodiversity

- In situ conservation
- Ex situ conservation
- Biological Diversity Act 2002

Conservation

- Biodiversity
- Forest conservation
- Forest Protection
- Forest management
- Forest invasive species
- Other conservation scheme
- Public Awareness

Chapter-4 Pollution

Air Pollution

- Causes of air pollution
- Effect of air pollution
- Control measures

Soil Pollution

- Causes of soil pollution
- Effect of soil pollution
- Control measures

Water Pollution

- Causes of Water Pollution
- Effect of Water Pollution
- Control Measures

Thermal Pollution

- Cause of Thermal pollution
- Effect of thermal pollution
- Control measures.

Marine Pollution

- Cause of marine pollution
- Effect of marine pollution
- Control measures.

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Noise Pollution

- Cause of Noise pollution
- Effect of Noise Pollution
- Control measures.

Nuclear Hazards

- Introduction
- Causes of Nuclear hazards
- Control Measures

Chapter-5 Solid Waste

Municipal Solid waste

- Functional Elements

Hazardous Waste

- Characteristics of Hazardous waste
- Source of Hazardous waste
- Effect of Hazardous waste
- Control of Hazardous waste

Industrial Waste

- Sources of Industrial waste
- Effect of Industrial waste
- Control & Industrial waste

Agricultural Waste

- Sources of agricultural waste
- Effects of agricultural waste
- Management
- (a) Waste to energy
- (b) Biogas production

Waste Management

- Reduce
- Re-use
- Recycling

Chapter-6 Disaster Management

Post Disaster Management & Disaster integration

- Mitigation Program
- Mitigation strategy

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Disaster Commonly occurring in India

- Floods
- (i) Causes
- (ii) Effects
- (iii) Mitigation strategy
- Earth Quakes
- Cyclones
- Land slide
- Tsunami

Chapter-7 Sustainable Development in India

Introduction

Policies & programmes

- (i) Economic
- (ii) Agriculture & food management
- (iii) Industry
- (iv) Investment
- (v) Trade
- (vi) Technology Up gradation
- (vii) Banking & Finance
- (viii) Infrastructure
- (ix) Social
- (x) Interventions for poverty eradication
- (xi) Urban housing & livelihoods
- (xii) Urban transport
- (xiii) Empowerment of Women
- (xiv) Health Policy
- (xv) Population control measures
- (xvi) Welfare & development of weaker sections
- (xvii) Financial Inclusion
- (xviii) Rural Support
- (xix) Education & skill development
- (xx) Traditional knowledge & practice
- (xxi) Rehabilitation & resettlement & disaster management
- (xxii) E-governance

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- (xxiii) Environment
- (xxiv) Forestry
- (xxv) Biodiversity
- (xxvi) Pollution Control
- (xxvii) Land Degradation
- (xxviii) Water Management
- (xxix) climate change
- (xxx) Marine & Coastal environment
- (xxxi) Clean Energy

Legal Provisioning

- (i) International legal principles on sustainable development: Definition, genesis & Evaluation.
- (ii) The Indian legal framework.
 - (a) First phase (1972-1983)
 - (b) Second phase (1984-1997)
 - (c) Third phase (1998-2004)
 - (d) Fourth phase (2005 & beyond)

Conclusion

Evolving Institutional Arrangements

- (i) Ministers & Department
- (ii) Inter-ministerial
- (iii) Centre-state & inter-state
- (iv) Other institutional mechanism
 - (a) Decentralized governance through local governments
 - (b) Participatory institutions for management of forest & water.
- (v) Pollution Control Boards
- (vi) Institutional related to the National Biodiversity Act.
 - (a) National Biodiversity Authority
 - (b) State Biodiversity Boards
 - (c) Biodiversity Management Committees
- (vii) Institutions for coastal management
- (viii) Environmental Impact Assessment
- (ix) National Green Tribunal
- (x) National Tiger Conservation Authority
- (xi) National Disaster Management Authority

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- (xii) National Rain-fed Area Authority
- (xiii) Central Water Commission
- (xiv) Central vigilance commission
- (xv) Prime Minister's council on climate change
- (xvi) Delivery monitoring unit
- (xvii) Unique Identification Authority of India
- (xviii) Research institutes & universities

Conclusion

Financial Provisioning

- (i) Some recent programmes addressing sustainable development.
- (ii) Domestic resource generation.
- (iii) Intergovernmental transfers.
- (iv) External assistance

Conclusion

Policy Instrument

- (i) Economic instruments
- (ii) Renewable purchase obligation
- (iii) Perform Achieve & Trade
- (iv) Coal cess
- (v) Clean Development mechanism
- (vi) Compensatory Afforestation Fund
- (v) Clean Development mechanism
- (vi) Compensatory Afforestation Fund
- (vii) Informational Policy Instruments

Conclusion

Major Groups & Innovations

- (i) Engaging major groups
- (ii) Innovations in MG-NREGS
- (iii) National Green Crops
- (iv) Waster Minimization Circles
- (v) National Knowledge network
- (vi) Women empowerment under integrated infrastructure development
- (vii) Swajaldhar
- (viii) Lighting a Billion lives
- (ix) Joint Forest Management

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(x) Green Rating for Integrated Habitat Assessment

Conclusion

Chapter-8 XIIIth Five Year Plan & Environment Forestry & Wildlife

Introduction

Review of the Eleventh Plan

(A) Progress Achieved

- (i) Increase forest & Tree Cover by 5% points
- (ii) Treat All Urban Waste by 2011-12 clean River
- (iii) Attain World Health Organization (WHO) standards of air quality in all major cities.
- (iv) Increase Energy Efficiency by 20% points by 2016-17 in the environment & forests sector.

(B) Major Policy Developments

Targets & action for the 12th Plan

- (i) Strategy for the 12th Plan
- (ii) Programmatic Strategies
- (iii) Organisational Strategies
- (iv) Regulatory Strategies
- (v) Policy Reforms & Metric-based management
- (vi) Infrastructure / Technology upgrade & investment strategic
- (vii) Biodiversity
- (viii) Capacity Building & international cooperation strategies
- (ix) Livelihood
- (x) Forest Management Strategy
- (xi) Wildlife & Animal Welfare
- (xii) Rationalisation of Schemes

New Institutes for the 12th Plan

- (i) Recasting the scheme of CEPTS
- (ii) Enhancement of Sewage Treatment Capacity
- (iii) National Plan for conservation of Aquatic Eco-systems
- (iv) National Environmental Monitoring Programme
- (v) National Forestry Information System
- (vi) Invasive – species management
- (vii) Coastal & marine conservation
- (viii) Valuation of Eco-system services & Biodiversity

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- (ix) Environment Performance Index (EPI)
- (x) Rangeland & Silni-pasture Development Scheme
- (xi) Satellite Based forest Resource Assessment
- (xii) Green India Mission
- (xiii) Plan Outlay

Climate Change

India's Emission Structure

Vulnerability Assessment & Adaptation

- (i) Agriculture
- (ii) Water
- (iii) Forests & other Natural Ecosystems
- (iv) Coastal Areas
- (v) Health
- (vi) Infrastructure
- (vii) Industry

National Action Plans on climate change

State Action Plans on climate change.

Climate Change Science & Assessment

Strategies for financing

- (i) Domestic Resources
- (ii) International Sources
- (iii) Carbon Markets & Clean Development Mechanism

Way Forward

Chapter-9 International Agreements & India

Introduction

(1) Economic

- (i) Global Trade agreements
- (ii) Regional Trade agreements
- (iii) Bilateral investment treaties
- (iv) Multilateral Investment treaty

(2) Social

- (i) International Labour Organisation
- (ii) Human Rights Convention

(3) Environment

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- (i) UNFCC
- (ii) Convention on Biological Diversity
- (iii) UNCCD
- (iv) Ramsan Convention
- (v) CITES
- (vi) Vienna Convention
- (vii) Rotterdam Convention
- (viii) Basel Convention
- (ix) Stockholm Convention

(4) Forestry

- (i) International Tropical Timber Organisation
- (ii) Cartagena Protocol on Biosafety
- (iii) Commission on sustainable development
- (iv) International Network for Bambood & Rattan
- (v) INBAR
- (vi) Asia – Pacific Forestry Commission
- (vii) Asia – Pacific Forest Invasive species Network

(5) Wildlife Conservation

- (i) IUCN
- (ii) UNESCO World Heritage Program
- (iii) Convention on conservation of migratory species of wild Animals.
- (iv) International whaling commission.

Chapter-10 Critically Endangered

Introduction

Endangered Birds of India

Endangered Mammals of India

Endangered Reptiles of India

Endangered Amphibians of India

Endangered Fish of India

Endangered Spiders of India

Endangered Corals of India

Chapter-11 India & Climate Change

Introduction

1. National Circumstances

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2. Greenhouse gas Inventory Information
3. Vulnerability Assessment & Adaptation
4. Climate Change Projection
5. Impact Assessment
 - (i) Impact assessment on water resources
 - (ii) Impact assessment on forests.
 - (a) Impact on net primary productivity to & soil organic carbon
 - (b) Vulnerability of India Forest
 - (iii) Impact assessment on Indian Agriculture
 - (a) Impact of Climate Change on crop
 - (b) Plantation Crops
 - (c) Vegetables & Fruits
 - (iv) Impact assessment on Human health
 - (v) Malaria under A1B Scenario

Multiple Choice Questions given for Final Practice

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