

## **COURSE CONTENTS**

### **SEMESTER – I**

**COURSE NAME: ENVIRONMENT, ECOLOGY AND RESOURCES**

**COURSE CODE: ES 429**

**CREDIT: (L-T-P): 03 (3-0-0)**

**HOURS: 03**

#### **OBJECTIVE**

To provide substantive understanding of environment, ecology and ecosystem, environmental resources and social perspective of environment

#### **OUTCOME**

The learners will acquire broad understanding of environmental and ecological dimensions of environmental management

#### **CONTENTS**

**Environmental Science-** Definition, nature and scope; The Earth's environment (Ecosphere) and its components (atmosphere, hydrosphere, lithosphere (geosphere) and biosphere); Environmental Factors: Geographical, Physical, Chemical and Biological

**Ecology and Ecosystem:** Concept, types and importance; Structure and functions of ecosystem

**Environmental Resources:** Land (minerals and soil), Water (fresh water and marine), Energy (conventional and new and renewable) and biological - Natural (Forest, Grassland and Wetland) and human-engineered (Plantation, Agriculture and Aquaculture) resources: Structure, distribution, exploitation and environment-related concerns

**Social Perspective of Environment:** Human population as a resource; Social impacts of growing human population and effluence; Food security and sustainability; Social impacts of water crisis, floods and droughts; Social impacts of hydro-electric and other development projects (e.g., infrastructure, mining, human rehabilitation etc.)

#### **SUGGESTED READINGS**

Botkin, D.B. and Keller, E.A 2002. *Environmental Science: Earth as Living Planet*, John Wiley and Sons, New York.

Chiras, D. D. 1985. *Environmental Science*, The Benjamin/Cumrouings Publishing Co. Inc., Menlo Park.

Cunningham, W.P. and Saigo, B.W. 1999. *Environmental Science: A Global Concern*, WCB-McGraw Hill Companies Inc., USA.

Khoiyangbam, R.S. and Gupta N. (eds.). 2017. *Introduction to Environmental Sciences*, The Energy and Resources Institute, New Delhi, 426 p.

Odum, E.P. and Gray, B.W. 2004. *Fundamentals of Ecology*, Cengage Learning, USA.

Santra, S.C. 2016. *Environmental Science*, New Central Book Agency (P.) Ltd., Kolkata.

Schumacher, E. F. 1973. *Small is Beautiful*, Blond and Briggs, UK.

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**COURSE NAME: ENVIRONMENTAL POLITICS**

**COURSE CODE: ES 431**

**CREDIT: (L-T-P): 03 (3-0-0)**

**OBJECTIVE**

To introduce learners to the politics of environmental issues at national (India) and international levels

**OUTCOME**

The learners will get familiarized with politics of environmental issues, the debate on environment and development, and environmental movements and governance in India and at the global level.

**CONTENTS**

**The Word Environment:** Ancient age, Middle ages and the new Millennium; Major global environmental issues of 21<sup>st</sup> Century

**Environmental Politics:** Paradigms of environmental politics; Global environmental politics between developed and developing nations, Dilemma of environment vs economic priority; Global warming and international policies

**Environmental Politics and Development:** Critics of modern development; Proposed alternatives to modern development in the contemporary world; Environmental politics in urban India

**Environmentalism and Environmental Movements:** Origin, nature and varieties of environmentalism and environmental movements in developed and developing countries; Civil society and environmentalism in India

**Environmental Movements in India:** Emergence of environmental issues on the political agenda; Indian environmental movements in different sectors; Case studies: Environment in the agenda of selected Indian political parties, such as, UPA, NDA and AAP

**Environmental Governance:** Concept, Global and national (India) initiatives

**SUGGESTED READINGS**

Bryant, B.P. Mohai. (Ed.). 1992. *Third World Political Ecology*, Routledge, London.

CSE. Undated, *Global Environment Governance Series (Green Politics, Poles Apart, Global Warming in the Unequal World)*, Center for Science and Environment, New Delhi.

Mukund, R. 1997. *Global Environmental Politics: India and the North-South Politics of Global Environmental Issues*, Oxford University Press, New Delhi.

Pathak, S, 2020. *The Chipko Movement: A People's History*, Orient Blackswan.

Patterson, M. 1996. *Global Warming and Global Politics*, Routledge, London.

Peets, R. and W. Michael. 1996. *Liberation Ecologies: Environment, Development and Social Movements*, Routledge, London.

Persoon, G. and A. Kalland. 1998. *Environmental Movements in Asia*, Curzon Press, New Delhi.

- Sabarwal, V. 1999. *Pastoral Politics: Shepherds, Bureaucrats and Conservation in Western Himalayas*, Oxford University Press, New Delhi.
- Sainath, P. 1996. *Everybody Loves a Good Drought*, Penguin, New Delhi.
- Sundar. N., R. Jefferey and N. Thin. 2001. *Branching Out: Joint Forest Management in India*, Oxford University Press, New Delhi.
- Sundar, N. *et al.* 2005. “*Land and Identity in Jharkhand*”, Special Section on Laws and Natural Resources, Economic and Political Weekly XI (4), Oct. 8<sup>th</sup>, 2005; pp. 4430-4462.
- Thoreau, H.D. 2013. *Walden*, Maple Classics, India.
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**COURSE NAME: ENVIRONMENTAL MANAGEMENT**

**COURSE CODE: ES 433**

**CREDIT: (L-T-P): 03 (3-0-0)**

**HOURS : 03**

**OBJECTIVE**

To introduce learners about the concept and practices of environmental management with special reference to the Indian environment

**OUTCOME**

The learners will get acquainted with the knowledge and practices of managing environment as required for ecological and urban development management.

**CONTENTS**

Environmental issues of India in new Millennium period; Concept, History and Scope of environmental management; Role of GOs and NGOs in environmental management; Ethics and environmental management – Concept, ethical theories (homocentric, biocentric and ecocentric), animal rights, deep ecology, land ethics and ecofeminism; Air, Water and Land (Soil) Management; Forest Management; Biodiversity Management; Environmental Standards – ISO 14000 Series and Eco-labelling (Eco-marks) schemes; Clean and green technologies

**SUGGESTED READINGS**

- Krishnamurthy, B. 2017. *Environmental Management, Text and Case Studies* 3ed Edition., PHI Learning P. Ltd., Delhi, 300 p.
- Sankar, R.N. 2015. *Environmental Management*, Oxford University Press, New Delhi, 588 p.
- Sulphrey, M.M. and Safeer, M.M. 2017. *Introduction to Environment Management*, PHI Learning P.Ltd., Delhi, 408 p.
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**COURSE NAME: INTERNATIONAL ENVIRONMENTAL ORGANIZATIONS AND LAW**

**COURSE CODE: ES 435**

**CREDIT: (L-T-P): 04 (4-0-0)**

**HOURS: 04**

**OBJECTIVE**

To impart substantive knowledge of international environmental organizations and sustainability-centric environmental governance

### **OUTCOME**

The learners would be able to develop fundamental understanding of international environmental organizations, sustainability and climate change mitigation

### **CONTENTS**

**International Environmental Organizations:** UNEP, UNESCO, WWF, IUCN, IUBS, FAO, WRI, WCSD, IPCC, CoP, GEF, WHO, WMO, IAEA, ILO, ICAO, WTO and International Law Commission

**International Environmental Law:** Concept of law; Concept of policy; Environment and governance- Conferences, Conventions and Reports, Treaties and Declarations; Sustainable development in India; Climate change and its processes- Carbon Disclosure Project (CDP). Clean Development Mechanisms (CDMs), and Climate change and carbon offsetting

**Multilateral Environmental Agreements and Negotiations:** Disputes and dispute settlement bodies (viz., International Court of Justice, International Tribunal for the Law of Sea, Permanent Court of Arbitration); Environmental dispute settlement mechanisms

### **SUGGESTED READINGS**

Desai, B. 2010. *Multilateral Environmental Agreements: Legal Status of the Secretariats*, Cambridge University Press, Cambridge.

WCED. 1987. *Our Common Future*, (World Commission on Environment and Sustainable Development, WCED), Oxford University Press, Oxford.

WWF and NLU. 2013. *Post Graduate Diploma in Environmental Law and Policy, Vols – 1 and 2*, Centre for Environmental Law, WWF – India, New Delhi and National Law University, New Delhi.

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## **COURSE NAME: INTERNATIONAL ENVIRONMENTAL LAW AND POLICY- I (PHYSICAL ENVIRONMENT)**

**COURSE CODE: ES 437**

**CREDIT: (L-T-P): 03 (3-0-0)**

**HOURS : 03**

### **OBJECTIVE**

To impart knowledge of the basics of international environmental law and major international environmental policies

### **OUTCOME**

The learners would be able to upscale their perspectives on international environmental law

### **CONTENTS**

**International Environmental Law (IEL):** Genesis, Fundamental principles and Application; Trade and environment; Major IELs - Right to environment as human right, International

humanitarian law and environment, Environment and conflict management; UNFCCC and Kyoto Protocol, Treaty on Antarctic and Polar regions, UN Convention on Law of the Sea, UNEP's Regional Sea Programme, Law on international water courses

### **SUGGESTED READINGS**

WWF and NLU. 2013. *Post Graduate Diploma in Environmental Law and Policy, Vols – 1 and 2*, Centre for Environmental Law, WWF – India, New Delhi and National Law University, New Delhi.

*Related publications of World Bank, UNEP, WWF, FAO etc.*

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## **COURSE NAME: INTERNATIONAL ENVIRONMENTAL LAW (IEL) AND POLICY-II (BIOLOGICAL ENVIRONMENT)**

**COURSE CODE: ES 439**

**CREDIT: (L-T-P): 03 (3-0-0)**

**HOURS : 03**

### **OBJECTIVE**

To impart knowledge of international environmental laws and policies related to traditional knowledge and bio-resources

### **OUTCOME**

The learners would be able to upscale their perspective on intellectual property and legal instruments for protection of bio-resources at global level.

### **CONTENTS**

**Intellectual Property Rights and Environment:** Intellectual property and its protection; Intellectual Property Rights (IPRs) and biodiversity; Legal instruments for protection of bio-resources – CBD, PGRFA Treaty, TRIPS; Protection of varieties of plants – Issues and concern

**Traditional Knowledge (TK) and Environment:** History and scope of TK, Why protect TK?; TK and CBD; Relationship between CBD and TRIPS; Protection of TK under existing modes of IPRs.

**Protection of New Varieties of Plants:** International convention on plant varieties protection; UPOV Convention; Protection of plant varieties under TRIPS; Plant varieties protection and breeder's and farmers's rights; Access and benefits sharing of genetic and biological resources; Disputes related to bio-resources – Case studies, such as, Basmati rice, Turmeric, Neem etc.

### **SUGGESTED READINGS**

Ortolano L. 1984. *Environmental Planning and Decision Making*, John Wiley and Sons, New York.

Selman, P. 1992. *Environmental Planning*, Paul Chapman Publishing Ltd., London, 191p.

WCED. 1987. *Our Common Future*, (World Commission on Environment and Sustainable Development, WCED), Oxford University Press, Oxford.  
*Related publications of World Bank, UNEP, WWF, FAO etc.*

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## SEMESTER - II

**COURSE NAME: NATIONAL ENVIRONMENTAL LAW AND POLICY- INDIA**

**COURSE CODE: ES 428**

**CREDIT: (L-T-P): 04 (4-0-0)**

**HOURS: 04**

### **OBJECTIVE**

To develop broad understanding of institutional aspect of protection and conservation of environment in India

### **OUTCOME**

The learners would be able to recognize existing institutional mechanisms in India, and make decisions on development issues centralized around environmental security and sustainability.

### **CONTENTS**

**The Indian Environmental Organizations:** Central Pollution Control Board; Botanical Survey of India; Zoological Survey of India; National Bureau of Plant Genetic Resources, Animal Genetic Resources, Fish Genetic Resources and Agriculturally-beneficial Microorganisms, Wildlife Institute of India, Salim Ali School of Ornithology, Bombay Natural History Society, Centre for Environmental Education, Centre for Science and Environment, The Energy and Resources Institute, Development Alternatives

**Framework for Environmental Administration:** Ministry of Environment Forest and Climate Change, National Action Plan on Climate Change, National Missions for combating climate change, National Authorities on Biodiversity, and Protection of Plant Varieties and Farmers Rights, National Environmental Awareness Campaign, the Environmental Information System; National Green Tribunal

**Constitution and Environment:** Article 14A, Article 19(1) (a), Article 19 (1) (g), Article 21, Article 48 A and Article 51 A, Remedies under Articles 226 and 32<sup>nd</sup>, 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendment Acts, 1992

**Environmental Policies:** National Forest Policy 1952 and 1988, National Water Policy 1987 and revised 2002 and 2012, National Land use Policy 2019, National Environment Policy 2006, National Electric Mobility Mission Plan 2013 and 2020.

### **Environmental Legislations:**

**(a) Environment in General:** Environment (Protection) Act 1986 and rules 1986; Public Liability Insurance Act 1991 and rules 1991

**(b) Water and Air:** Water (Prevention and Control of Pollution) Act, 1974; Coastal Zone (Regulation) Act, 1991 and amendments; Wetland (Conservation and Management) Rules, 2017; Air (Prevention and Control of Pollution) Act, 1981 and amendment 1987; Ozone

Depleting Substances (Regulation) Rules, 2000; Noise Pollution (Regulation and Control) Rules, 2000; The Recycled Plastic Manufacturing and Usage Rules, 2000

**(c) Wildlife, Forest and Biodiversity:** Wildlife (Protection) Act, 1972 and amendments 1992, 2013; Indian Forest Act, 1927 and revised 1982; Forest (Conservation) Act, 1980; The Biological Diversity Act, 2002 and Rules 2004; The Protection of Plant Varieties and Farmers Rights Act, 2002; The Scheduled Tribes and Other Dwellers (Recognition of Forest Rights) Act, 2006; Regulation of Genetically-Modified Organisms

**(d) Emissions and Wastes:** Motor Vehicle Act, 1988; The Batteries (Management and Handling) Rules 2010 and amendments; The Manufacture, Storage and Import of Hazardous Chemical (Amendment) Rules, 2000; The Hazardous and other Waste (Management and Trans-boundary Movement) Rules, 2016; The Solid Waste Management Rules, 2016; The Solid Waste Management Rules Specific to COVID-19 Pandemic, 2020; The Plastic Waste Management Rules, 2016; The e-Waste Management Rules, 2016; The Construction and Demolition Waste Management Rules, 2016

### **SUGGESTED READINGS**

CPCB. 2010. *Pollution Control Acts, Rules and Notifications Issued Thereunder (PCLS/02/2010) (Sixth Edition)*, Central Pollution Control Board, New Delhi.

Diwan, S. and Rosencranz, A. 2005. *Environmental Law and Policy in India*, Oxford University Press, New Delhi.

Diwan, S. and Rosencranz, A. 2008. *Environmental Law and Policy in India*, Oxford University Press, New Delhi.

Ganesamurthy, V.S.2011. *Environmental Status and Policy in India*, New Century Publications, New Delhi.

Kandpal, P.C. 2018. *Environmental Governance in India: Issues and Challenges*, SAGE Publications India Pvt. Ltd., New Delhi, 255p.

Keshav, K. 2017. *Law and Environment*, Singhal Law Publication, Delhi, 404 p.

Leelakrishnan, P. and Wadhwa, B. 2008. *Environmental Law in India*, Sage Publishers, New Delhi.

*Related documents of Ministry of Environment Forest and Climate Change (GoI), New Delhi and CPCB, New Delhi*

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**COURSE NAME: NATIONAL (INDIA) ENVIRONMENTAL LAW IN PRACTICE-INDIA**

**COURSE CODE: ES 430**

**CREDIT: (L-T-P): 03 (3-0-0)**

**HOURS: 03**

### **OBJECTIVE**

To promote skills of learners on the bio-physical and socio-economic environment management in post-millennial scenario in India

### **OUTCOME**

The learners will acquire and upgrade knowledge and skills of minimizing adversities of economic development projects on natural environment and human population.

### **CONTENTS**

**Environmental Impact Assessment (EIA) :** Concept, Notifications, Process and Practices, Public hearing in EIA; Case studies – EIA of River Valley Projects, Infrastructure Projects, Impact assessment of invasive alien species

**Environmental Auditing (EA):** Concept, Benefits of EA, Requirements of EA

**Social Impact Assessment (SIA) -** Land Acquisition Act, 2013; Land Bill 2015; Tenure and Property rights, Community rights; SIA - Concept, process and public hearing, Displacement and rehabilitation concerns; Case studies – SIA of SEZ, Green Field Airport (s), High Speed Railway

### **SUGGESTED READINGS**

GBU.2018. *Social Impact Study of Noida International Greenfield Airport, Jewar*, Gautam Budh Nagar, Uttar Pradesh, Gautam Budha University, Greater Noida.

GBU. 2019. *Social Impact Assessment of Noida International Greenfield Airport, Jewar, Site Jewar Banger*, Gautam Budha University, Greater Noida.

GBU 2020. *Social Impact Assessment of Multi-Model Logistic Huband Integrated Transport Hub*, Gautam Budh Nagar, Uttar Pradesh.

Glasson, J., R. Therievel and A.Chadwic. 2005. *Introduction to Environmental Impact Assessment*, 3<sup>rd</sup> Edition, Routledge, Taylor and Francis Group, Oxfordshire, U.K.

Wathern, P. 1988. *Environmental Impact Assessment-Theory and Practice*, Routledge, Taylor and Francis Group, Oxfordshire, U.K.

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## **COURSE NAME: NATIONAL ENVIRONMENT PROTECTION MECHANISMS-INDIA**

**COURSE CODE: ES 432**

**CREDIT: (L-T-P): 03 (3-0-0)**

**HOURS: 03**

### **OBJECTIVE**

To develop understanding of institutional set-up of environmental protection in India, and familiarize learners about the contribution of notable Indian environment and natural resources protectors

### **OUTCOME**

The learners would be able to perform as a citizen responsible to society and responsive to the environmental crisis.

### **CONTENTS**

**Public Interest Litigation:** Introduction and usefulness, Cases and responses related to natural forest resource; Right to Information (RTI) Act, 2005; Introduction to Environmental Tribunals; National Environment Tribunal, National Environment Appellate Authority, National Green Tribunal (NGT), National Green Tribunal Act, 2010; Indian environment and natural resources



protectors- Bishnois, M.K. Gandhi, Gaura Devi, Chandi Prasad Bhatt, Sunder Lal Bahuguna, Vandana Shiva, Medha Patkar, Anupam Mishra and Rajendra Singh

### **SUGGESTED READINGS**

- CPCB. 2010. *Pollution Control Acts, Rules and Notifications Issued Thereunder (PCLS/02/2010) (Sixth Edition)*, Central Pollution Control Board, New Delhi.
- Diwan, S. and Rosencranz, A. 2008. *Environmental Law and Policy in India*, Oxford University Press, New Delhi.
- Kandpal, P.C. 2018. *Environmental Governance in India: Issues and Challenges*, SAGE Publications India Pvt. Ltd., New Delhi, 255p.
- Keshav, K. 2017. *Law and Environment*, Singhal Law Publication, Delhi, 404 p.

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## **COURSE STRUCTURE SEMESTER-II**

### **DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-II)**

#### **ES 416 ENVIRONMENTAL PLANNING, POLICY, CONVENTION AND LEGISLATION**

**CREDIT: (L-T-P): 03 (3-0-0)**

**HOURS : 03**

#### **OBJECTIVE**

To develop broad understanding of institutional aspect of environmental conservation and management

#### **OUTCOME**

To learners would be able to utilize scientific and technological skills, and institutional understanding in policy planning and decision-making to achieve environmental security, biodiversity conservation and sustainable development.

#### **CONTENTS**

**Environmental Planning:** Definition, need of policy, law and ethics for environmental conservation and sustainable use of resources, policy frameworks for environment in India; Environmental economics-Concept, significance for environmental planning, valuation methods and case studies; Role of NGOs in environmental management

**Environmental Ethics:** Concept, importance for quality environment and living, ethical theories (homocentric, biocentric and ecocentric), animal rights, deep ecology, land ethics and ecofeminism

**International Environmental Institutions:** UNEP, IUCN, WWF, UNESCO (MAB, IGBP), IUBS (DIVERSITAS), IPCC, WRI, World Commission on Sustainable Development

**International Environmental Conventions and Agreements:** Stockholm Declaration, Ramsar Convention, Vienna Convention and Montreal Protocol, Basel convention, CITES,

Convention to Combat Desertification (CCD), Earth Summit-1992, CBD, Earth Summit at Johannesburg 2002, Rio+20, GEF, Conventions related to climate change (UNFCCC, Kyoto Protocol, CoPs, CDM, Paris Agreement 2015), UN Summit on Millennium Development Goals 2000 and Sustainable Development Goals 2015, Copenhagen Summit 2009

**Environmental Policies in India-** Constitution provisions-Article 48 A and Article 51 A, National Forest Policy 1988, National Water Policy 2002, National Landuse Policy 2019., National Environment Policy 2006, National Action Plan on Climate Change 2009, National Green Tribunal Act 2010, National Electric Mobility Mission Plan-2020, 2013

**Environmental Legislations in India:**

**(a) Related to Forest, Wildlife and Biodiversity-** Wildlife Protection Act 1972 and amendments 1992, 2013, Forest Conservation Act 1980, Indian Forest Act (revised) 1982, Biological Diversity Act 2002 and Rules 2004, Protection of Plant Varieties and Farmers Rights Act 2002

**(b) Related to Water, Air and Environment-** Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981 and amendment 1987, and Rules 1982, Environment (Protection) Act 1986 and Rules 1986, Noise Pollution (Regulation and Control) Rules 2000, Coastal Zone Regulation (CRZ) Act 1991 and amendments, The Public Liability Insurance Act 1991 and Rules 1991

**(c) Related to Wastes-** The Manufacture, Storage and Import of Hazardous Chemical (Amendment) Rules 2000, The Hazardous and other Wastes (Management and Transboundary Movement) Rules 2016, The Solid Waste Management Rules 2016, Solid waste Management Rules related to COVID-19 Pandemic, 2020; The Plastic Waste Management Rules 2016, The Bio-medical Waste Management Rules 2016, The e-Waste Management Rules 2016, The Construction and Demolition Waste Management Rules 2016

**(d) Related to Vehicular Emission-** Motor Vehicle Act 1988, The Batteries (Management and Handling) Rules 2010 and amendments

**Environmental Management Standards-** ISO 14000 series, Eco-labeling (ecomark) schemes  
**SUGGESTED READINGS**

Bhat, S. 2010. *Natural Resources Conservation Law*, Sage Publishers, New Delhi.

Desai, B. 2010. *Multilateral Environmental Agreements: Legal Status of the Secretariats*, Cambridge University Press, Cambridge.

Diwan, S. and Rosencranz, A. 2005. *Environmental Law and Policy in India*, Oxford University Press, New Delhi.

Diwan, S. and Rosencranz, A. 2008. *Environmental Law and Policy in India*, Oxford University Press, New Delhi.

Ganesamurthy, V.S. 2011. *Environmental Status and Policy in India*, New Century Publications, New Delhi.

Jamieson, D. 2008. *Ethics and the Environment: An Introduction*, Cambridge University Press, Cambridge.

Keshav, K. 2017. *Law and Environment*, Singhal Law Publication, Delhi, 404 p.

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- Leelakrishnan, P. and Wadhwa, B. 2008. *Environmental Law in India*, Sage Publishers, New Delhi.
- Ortolano L. 1984. *Environmental Planning and Decision Making*, John Wiley and Sons, New York.
- Sankar, R.N. 2015. *Environmental Management*, Oxford University Press, New Delhi, 588 p.
- Selman, P. 1992. *Environmental Planning*, Paul Chapman Publishing Ltd., London, 191p.
- Sulphey, M.M. and Safeer, M.M. 2017. *Introduction to Environment Management*, PHI Learning P.Ltd., Delhi, 408 p.
- WCED. 1987. *Our Common Future*, (World Commission on Environment and Sustainable Development, WCED), Oxford University Press, Oxford.