The Author	3
Co-Author	5
List of Abbreviations	31
Preface	41
List of Abbreviations Preface General Introduction Chapter 1. General Background §1. GEOGRAPHY AND POPULATION	43
Chapter 1. General Background	43
§1. Geography and Population	43
§2. LEGAL AND POLITICAL STRUCTURE	45
§3. ECONOMIC CHARACTERISTICS	46
§4. SOCIAL AND CULTURAL CHARACTERISTICS	47
§5. ENVIRONMENTAL PROBLEMS AND CONCERNS I. Nature and Extent of the Problem A. Report on Impact of Pollutants B. State of India's Environment 2014	48 49 49 50
Chapter 2. Basic Principles of Environmental Law	51
§1. Definitions and Notions	51
§2. Provisions in the Constitution	52
Chapter 3. Historical Background	54
§1. ANCIENT SCRIPTURES I. Vedas	54 54

	II.	Arthashastra	54
§2.	Bisi	HNOI MOVEMENT	54
§3.	Bri	tish Period	55
84	Pos	T INDEPENDENCE	55
3		Piecemeal Approach	55
		Development versus Pollution Control	55
		The Stockholm Conference 1972	56
	IV.	The Bhopal Gas Tragedy	56
		Environmental Movements	57
		A. Chipko Movement	58
		B. Silent Valley Movement	58
		C. Narmada Bachao Andolan	58
		D. Baliyapal Movement	58
Ch	ante	er 4. The Role of Government Institutions in the	
	F	Shaping and Administration of Environmental	
		Law and Policy	59
		Law and Foney	39
81	Тиг	GOVERNMENT INSTITUTIONS AND THEIR COMPETENCIES	59
γ1.		Establishment of the Ministry of Environment and Forests (MoEF)	59
		Central and State Pollution Control Board	60
		Study of the Functioning of PCBs and Their Competencies	61
	111.	A. Strength and Competence of PCBs	61
		B. Study by Centre for Science and Environment	61
		1. Organizational Structure of SPCBs	61
		2. Finances of SFCBs	62
		3. Performance of SPCBs	62
	IV.	Recombinant DNA Advisory Committee (RDAC)	63
		Review Committee on Genetic Manipulation (RCGM)	63
		Genetic Engineering Approval Committee (GEAC)	63
§2.	Тнв	ACTUAL ROLE OF THE GOVERNMENTAL INSTITUTIONS	64
		Notifications of Ecologically Sensitive Areas	64
		Environmental Statement	64
		Environment Information System (ENVIS)	65
	IV.	Establishment of Environmental Courts-National Green Tribunal	65
Ch	apte	er 5. Sources of Environmental Law	66
§1.	PRO	VISIONS IN THE CRIMINAL PROCEDURE CODE	66
82.	Ind	IAN PENAL CODE (IPC)	66

§3.	PREVENTIVE POW	VERS UNDER THE POLICE ACT	67
§4.	ENACTMENT, RUI	LES, REGULATIONS AND OTHER NOTIFICATIONS	67
	I. Environ	ment Protection: General	68
	A. Act		68
	B. Rule	- · ·	68
		fications	68
		Coastal Regulation Zone	68
	D. Poli		70 70
	II. Eco-mar	Delegation of Powers	70
		fications	71
	III. Eco-sens		71
		fications	71
		mental Clearance: General	72
	V. Environi	mental Labs	72
	VI. Public L	iability	72
	A. Act		72
	B. Rule		72
		ifications	72
		y and Tribunal	73
	A. Act VIII. Water P	allution	73 73
	A. Act	mental Labs Liability effications y and Tribunal collution es effications	73
	B. Rule		73
		fications	73
		elated Enactments	74
	X. Legislati		75
	A. Act		75
	B. Rule		75
		fications	75
		ther Enactments	76
		n and Vibration (Nuclear and Non-nuclear)	76
	A. Act B. Rule		76 76
		ous Chemicals/Waste/Pesticides	76 76
	A. Rule		76
		fications	77
		elated Enactments	77
	XV. Noise Po	ollution	78
	A. Rule	es	78
	B. Noti		78
	_	ion on Land Use	78
		fications	78 7 8
	XVII. Forest C	Conservation	79 70
	A. Act		79 70
	B. Rule	28	79

C. Policy and Guidelines XVIII. Wildlife A. Act B. Rules C. Guidelines and Policy Statements D. Notifications, Orders & Circulars XIX. Biodiversity A. Act B. Rule C. Coastal Zone Related Notifications XX. Animal Welfare A. Act B. Rules C. Notification	79 79 79 79 80 80 80 80 81 81 81 81
§5. International Conventions and Agreements	82
§5. International Conventions and Agreements Part I. Pollution Control Chapter 1. Introduction §1. Tackling Pollution	85
Chapter 1. Introduction	85
§1. TACKLING POLLUTION I. Policy Statement on Abatement of Pollution II. Impact Mitigation Measures III. Waste Minimization and Cleaner Production Scheme IV. Green Rating Projects V. Life Cycle Assessment (LCA) VI. Labelling of Environment Friendly Products VII. Environmental Statistics and Mapping	85 85 86 86 86 87 87
Chapter 2. General Jaw	88
§1. Introduction	88
§2. STATUTORY STRUCTURE AND LEGAL REGIME I. Legislation II. Salient Features of Legislation A. The Environment (Protection Act) of 1986 1. Umbrella Legislation 2. Hazardous Substances 3. Role of the Central Government 4. Directions by the Central Government B. The Environment (Protection) Rules of 1986 C. The Public Liability Insurance Act of 1991 1. Immediate Relief 2. Environment Relief Fund	88 88 88 89 89 89 89 90 90

	Table of Con	ntents
	D. The National Environment Tribunal Act of 1995	91
	1. Objects Sought to be Achieved	91
	2. Strict Liability	91
	E. Prevention and Control of Pollution (Uniform Consent Procedure) Rules of 1999	92
§3.	FISCAL INCENTIVES TO ENCOURAGE PREVENTION AND	02
	CONTROL OF POLLUTION	92 92
	I. Exemption from Income Tax II. Depreciation Allowance	92
	III. Investment Allowance	92
	IV. Exemption from Tax on Capital Gains	93
	V. Excise Duty Exemption	93
	VI. Custom Duty	93
	VII. Easy Loans	93
	VIII. Sales Tax	94
	VIII. Sales Tax IX. Reduced Water Cess ENVIRONMENTAL CLEARANCE I. Projects Requiring Clearance A. Optimal Utilization of Finite Resources B. Notification C. Prior Environmental Clearance D. Projects and Activities Requiring Clearance II. Procedure for Clearance	94
§4.	ENVIRONMENTAL CLEARANCE	94
	I. Projects Requiring Clearance	94
	A. Optimal Utilization of Finite Resources	94
	B. Notification	94
	C. Prior Environmental Clearance	95
	II. Projects and Activities Requiring Clearance	95 96
	A. Environment Impact Assessment (EIA)	96
	B. De-licensed Industries	97
	C. Documents Required for Clearance	97
	D. Environmental Appraisal	97
	E. Rejection of the Report	98
	F. Appeal against an Order	98
	III. Environmental Monitoring	98
	IV. Environmental Audits	98
Ch	apter 3. Air Pollution	99
§1.	Introduction	99
82	STATUTORY STRUCTURE AND LEGAL REGIME	99
<i>γ</i> ∠.	I. Constitutional Position	99
	II. Legislation	99
	III. Salient Features of Legislation	100
	A. The Air (Prevention and Control of Pollution) Act of 1981	100
	B. The Factories Act of 1948	100
	C. Motor Vehicles Act of 1988 and Rules	101
	D. The Environment (Siting for Industrial Project) Rules of 1999	101

§3.	INDUSTRIAL POLLUTION I. Bhopal Gas Tragedy II. Industrial Pollution Abatement through Preventive Strategies	101 101 102
	III. Pollution Control in Highly Polluting Industries	102
	IV. Development of Environmental Standards	105
	A. Sector-Wise Approach	106
	B. Industrial Pollution Control along the Rivers and Lakes	106
	C. Environmental Surveillance Squad (ESS)	106
§4.	GLOBAL WARMING AND CLIMATE CHANGE	106
	I. The Stockholm Declaration of the UN Conference on Human	
	Development of 1972	107
	II. Kyoto Protocol and Framework Convention	107
	III. Sensitivity of India to Climate Change	108
§5.	ACID RAIN I. Acid Rain and Its Implications A. Meaning and Incidence B. Acid Deposition Formation II. Effects of Acid Deposition A. Effects on the Ecosystem B. Decline in Fish Numbers C. Effects on Soil D. Human Health and Livelihood	108
	I. Acid Rain and Its Implications	108
	A. Meaning and Incidence	108
	B. Acid Deposition Formation	109
	II. Effects of Acid Deposition	109
	A. Effects on the Ecosystem	109
	B. Decline in Fish Numbers C. Effects on Soil	109
	D. Human Health and Livelihood	110 110
	E. Effects on Heritage Sites and Buildings	110
	E. Effects on Heritage Sites and Sundings	110
§6.	TRAFFIC OR VEHICULAR POLLUTION	110
	I. Contribution of Vehicular Exhausts to Ambient Air Quality	110
	II. Mass Emission Standards	111
	A. Bharat Stage II to Stage IV	111
	B. Old Technology	112
	C. Fitness Certification	112
	III. Auto Fuel	112
	A. Auto Fuel Quality	112
	B. Expert Committee on Auto Fuel Policy	113
§7.	Enforcement and Control	113
	I. No Objection Certificate (NOC)	113
	II. Consent	113
	III. Setting of Air Quality Standards	114
	A. Emission Standards for Generator Sets	115
	B. Particulate Emission Limits for Thermal Power Stations	115
	C. Air Quality Monitoring of Vehicular Pollution	116
	D. Minimum National Standards (MINAS)	116
	IV. Air Quality Monitoring Network	117
	V. Online Ambient Air Ouality Monitoring Station	117

§8.	EVALUATION OF EFFECTIVENESS OF LEGAL PROVISIONS I. Air Quality Standards Developed under the Air Act II. Instrument of Enforcement A. Launching of Prosecution B. Inspection C. Environmental Auditing III. Problems in Enforcement	118 118 118 119 119 119
Ch	apter 4. Water Pollution	121
§1.	Introduction	121
§2.	Statutory Structure and Legal Regime I. Legislation and International Conventions A. Legislation B. International Conventions and Treaties II. Salient Features of Legislation A. The Water (Prevention and Control of Pollution) Act of 1974 1. Functions of the Board 2. Prevention and Control of Water Pollution under the Act 3. Action in an Emergency 4. Power of the Central Government to Give Directions (Section 33) B. The Water (Prevention and Control of Pollution) Cess Act of 1977 C. The Water (Prevention and Control of Pollution) Rules of 1975 (Water Rules of 1975)	121 121 122 122 122 123 124 124 124
§3.	FRESH WATER I. Surface Water Management A. Water Availability B. Rainful C. Pollution of Water Bodies Including Rivers II. Fresh Water: An Exhaustible Resource	125 126 126 126 126 127
§4.	WATER SUPPLY MANAGEMENT I. Accelerated Rural Water Supply Programme II. Groundwater Supply A. Overexploitation B. Underexploitation C. Central Groundwater Board (CGWB) III. Watershed Development	127 128 128 128 129 129
§5.	WASTE WATER AND OTHER POLLUTANTS	129
§6.	SEA WATER I. Transportation and Marine Pollution	130 130

§7.	ENFORCEMENT AND CONTROL I. Ambient Water Quality Standards II. Monitoring Water Quality III. The National Water Quality Monitoring Programme IV. Review of the Water Quality Monitoring Programme	131 131 131 132 133
§8.	EVALUATION OF THE EFFICIENCY OF LEGAL PROVISIONS I. MoEF Annual Report for 2012–2013 II. Study Conducted at the Instance of the Planning Commission III. Multiplicity of Agencies IV. Inadequate Water Cess V. River Water Pollution	133 133 134 134 135
Ch	apter 5. Waste	138
§1.	Introduction	138
§2.	Introduction Statutory Structure and Legal Regime I. Legislation II. Salient Features of Legislation A. The Municipal Solid Waste (Management and Handling) Rules of 2000 B. The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules of 2008 C. The Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 D. Bio-medical Waste (Management and Handling) Rules of 1998 E. Plastic Waste (Management and Handling) Rules of 2011 F. Battery (Management and Handling) Rules of 2001 G. Rules Relating to Collections and Recycling of Used Oil and Waste Oil H. E-waste (Management and Handling) Rules 2011 III. International Conventions and Protocols A. Basel Convention of 1989 on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal B. Rotterdam Convention on the PIC Procedure for Certain Hazardous Chemicals and Pesticides in International Trade C. Stockholm Convention on POPs	138 138 138 139 139 140 140 141 141 141 142 142
§3.	ORDINARY REFUSE/SOLID WASTE MANAGEMENT I. Collection and Disposal of Waste II. Efforts Made at Various Forums III. Guidelines on Fly Ash	142 142 143 143
§4.	HAZARDOUS CHEMICALS/WASTE/PESTICIDES I. Legal Instruments	144 144

	II. Sources of Hazardous Waste	144
	A. Import of Hazardous Waste	145
	III. Hazardous Waste Management Guidelines	145
	IV. Guidelines for Owner or Operator of Hazardous Wastes Storage,	1.44
	Treatment and Disposal Facility	146
	A. Licensing System B. Conv. of the Manifest	146
	B. Copy of the Manifest	147
	V. Common Transport, Storage and Disposal Facility (TSDP)	147
	VI. The Hazardous Substances Management Division (HSMD)	147
§5.	RECYCLING AND CLEANER TECHNOLOGY	148
	I. Regional Technical Assistance Programme and Cleaner Production	148
	II. Waste Minimization Circles in Small Scale Industries	148
	III. Waste Recycling	149
§6.	EVALUATION OF EFFICIENCY OF LEGAL PROVISION	149
	apter 6. Soil Pollution Introduction Statutory Structure and Legal Regime	
Ch	apter 6. Soil Pollution	151
Q 1	INTEROPLICATION	151
81.	Introduction	131
§2.	STATUTORY STRUCTURE AND LEGAL REGIME	151
	I. Legislation	151
	II. UN Convention to Combat Description (UNCCD)	151
§ 3.	Causes of Soil Pollution	152
0 -	I. Soil Erosion	152
	II. Intensive Cultivation	152
	III. Use of Agro-chemicals and Pesticides	152
	IV. Waterlogging and Salinity	153
	V. Industrialization	153
	VI. Mining Activities	153
84	ENFORCEMENT AND CONTROL	153
γ 1 .	I. Balanced and Integrated Use of Fertilizers and Integrated Pest	13.
		154
	Management	154
	II. Special Programmes	
	A. Drought Prone Area Programme	154
	B. Desert Development Programme	155
	C. Integrated Wasteland Development Programme (IWDP)	155
	D. Soil Conservation in the Catchments of River Valley	1.55
	Projects and Flood Prone Rivers	155
§5.	EVALUATION OF THE EFFICIENCY OF THE LEGAL PROVISIONS	155
Ch	apter 7. Noise Pollution	157
	T · · · · · · · · · · · · · · · · · · ·	/

§1.	I.	Legislation Salient Features of Legislation A. Motor Vehicles Act of 1939 and 1988 B. The Noise Pollution (Regulation and Control) Rules of 2000 1. Categorizing the Area 2. Definitions 3. Ambient Air Quality Standards in Respect of Noise for Different Areas (Rule 3) 4. Restrictions on the Use of Loudspeakers/Public Address Systems (Rule 5) 5. Consequences of Violation in Silence Zones/Areas (Rule 6) 6. Complaints to be Made to the Authority (Rule 7)	157 157 158 158 158 159 159 160 161 161
§2.	I.	Noise in Factories Loudspeakers A. Regulation for Use	162 162 162 162 162
	III.	Generator Sets	163
§3.	TRA	AFFIC NOISE	163
§4.	Eva	ALUATION OF EFFICIENCY OF LEGAL PROVISIONS	164
Cha	apte	er 8. Radiation and Vibrations (Nuclear and Non-nuclear)	166
y 1.	I.	Enactments A. Atomic Energy Act of 1962 and Radiation Protection Rules of 1971 B. The Civil Liability for Nuclear Damage Act 2010 International Conventions A. United Nations General Assembly Resolution 913 (X) Establishing the Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) (3 December 1955) B. Convention on Early Notification of a Nuclear Accident (hereinafter 'Notification Convention'), and Convention on Assistance in the Case of a Nuclear Accident or a Radiological Emergency, Vienna, 26 September 1986 C. The Convention Concerning the Protection of Workers against Ionizing Radiation (ILO Convention 115, Geneva, 22 June	166 166 166 167 167 167
§2.			168 168

II. Radium-226 and Radon-222	168
§3. Uranium Mines	168
§4. Dumping of Nuclear Waste	169
§5. Vibrations	169
§6. Enforcement and Control	170
§7. EVALUATION OF THE EFFICIENCY OF THE LEGAL PROVISIONS	170
Chapter 9. Other Sectors	171
\$1. NOXIOUS SUBSTANCES I. Mercury Poisoning II. Persistent Organic Pollutants	171 171 171
§2. STATUTORY STRUCTURE AND LEGAL FRAMEWORK I. Legislation A. Ozone Depleting Substances (Pegulation and Control) Rules of 2000 1. Definitions (Rule 2) 2. Regulation of Production and Consumption (Rule 3) 3. Requirement of a License and Prohibition on Export to or Import from Certain Countries (Rules 4 and 5) 4. Regulation of the Sale, Purchase and Use of Ozone Depleting Substances (Rules 6, 7 and 8) 5. Prohibition on New Investments (Rules 9, 10 and 12) 6. Procedure for Registration, Cancellation of Registration and Right of Appeal (Rule 13) 7. Monitoring and Reporting Requirements (Rule 14) III. International Conventions A. The Vienna Convention for the Protection of the Ozone Layer (Vienna, 22 March 1988) and Montreal Protocol on Substances That Deplete the Ozone Layer (Montreal, 16 September 1987)	172 172 172 172 173 173 173 173 174 174 174
B. The Convention Concerning Protection Against Hazards of Poisoning Arising from Benzene (ILO Convention 136, Geneva, 23 June 1971) (hereinafter, 'Benzene Convention, 1971')	175
§3. Enforcement and Control	175
§4. EVALUATION OF THE EFFICIENCY OF THE LEGAL PROVISIONS	175
ST. DVALUATION OF THE LITTCIENCT OF THE LEGAL I KOVISIONS	1/0

Part II. Nature Conservation and Management	177
Chapter 1. Legislation in the Field of Conservation and Management and Shortcomings	177
Chapter 2. Pressures on Natural Resources I. Direct Dependence on Natural Resources II. Market Forces III. Development versus Environment IV. Using Natural Resources in a Sustainable Way	179 179 179 179 180
§1. NATURAL RESOURCE MANAGEMENT I. The Standing Committee on Bio-resources and the Environment (SC-B) II. The National Museum of Natural History	180 180 181
Chapter 3. Monuments and Landscapes	182
II. The National Museum of Natural History Chapter 3. Monuments and Landscapes §1. STATUTORY STRUCTURE AND LEGAL REGIME I. Legislation II. Salient Features of Legislation A. The Ancient Monuments and Archaeological Sites and Remains Act of 1958 (24 of 1958) B. Guidelines Framed for the Projection of Monuments C. Draft Model Regulations for Conservation of Natural and Man-Made Heritage, 1995 D. Biological Diversity Act of 2002	182 182 183 183 184 184
§2. INTERNATIONAL CONVENTIONS AND CONCERNS I. Convention Concerning the Protection of the World Cultural and Natural Heritage 1972 (Paris, 12 November 1972) II. Archaeological Park and World Heritage Complex	185 185 185
§3. TAJ PROTECTION MISSION I. Protection of the Taj Mahal II. Taj Heritage Corridor Controversy	185 185 186
§4. Biosphere Reserves	187
Chapter 4. Parks and Reserves	188
§1. DESIGNATION AND PROTECTION I. National Parks and Sanctuaries II. Holding Last Surviving Population	188 188 188

§2.	STATUTORY STRUCTURE AND LEGAL REGIME I. The Wildlife (Protection) Act of 1972 A. Declaration B. Regulation with Respect to Entry C. Grant of a Permit II. Human Dwellings III. Institutions and Bodies A. Central Zoo Authority B. Botanical Survey of India (BSI)	188 189 189 189 190 190 190
§3.	PARKS, SANCTUARIES AND GARDENS I. Corbett National Park II. National Zoological Park (NZP), New Delhi III. Bandhavgarh National Park IV. Gir Forest National Park V. Keoladeo Ghana (Bharatpur) National Park VI. Little Rann of Kutch VII. Nagarhole National Park VIII. Ranthambor National Park IX. The National Botanic Garden at Noida-Dethi SPECIAL PROJECTS I. Biosphere Reserves	191 191 192 192 193 193 193 194
§4.	SPECIAL PROJECTS I. Biosphere Reserves A. World Network of Biosphere Reserves B. Details of Biosphere Reserves II. Biodiversity Conservation A. Convention on Biological Diversity B. National Biodiversity Strategy and Action Plan (NBSAP) Project C. Steps Initiated to Conserve Biodiversity	194 194 195 195 198 198
§5.	I. Compensation for Acquisition A. Claim B. Award for Compensation II. Financial Assistance III. Balance between Protection and Economic Development IV. Resettlement A. Financial Help B. Joint Forest Management of the Protected Areas C. Eco-development Scheme in and around National Parks and Sanctuaries Including Tiger Reserves D. India Eco-development Project	199 199 199 200 200 201 201 201 201 201
Ch	apter 5. Wildlife Protection	203
§1.	PROBLEM AREAS	203

	I.	Ille	gal Trade in Wildlife	203
			mmittee on Illegal Trade	203
	11.	C0.	minuted on megar trade	203
82	LEG	isi 4	ATIVE STRUCTURE AND LEGAL REGIME	204
g∠.			gislation	204
	11.		ient Features of Legislation	204
		A.		20.4
			1983, 1986, 1991, 2002 and 2006)	204
			1. Wildlife Advisory Board	204
			2. Prohibition on Hunting of Animals and Uprooting	
			of Plants	205
		В.	The Biological Diversity Act of 2002 (No. 18 of 2003)	205
			1. Definitions	205
			2. Biodiversity-Related Activities only with the Approval	
			of the National Biodiversity Authority (NBA)	206
			3. Transfer of Results of Research with the Approval of the	
			NBA	206
			4. Constitution of the National, State and Local Biodiversity	_00
			Funds (Sections 27, 32, 42, 43)	206
			5. The Central Government to Develop National Strategies	200
			Plans (Section 36)	207
			6. Protection of Local Knowledge	207
			7. Central Government Notifies Threatened Species	207
			(Section 36)	207
			8. The NBA is Bound by the Directions Given by the	
			Central Government (Section 48)	207
	III.		ernational Conventions	207
		A.	Convention on International Trade in Endangered Species	
			in Wild Fauna and Flora (CITES) (Washington, 3	
			March 1973)	207
		В.	Bonn Convention on the Conservation of Migratory Species	
			of Wild Animals (Bonn, 23 June 1979)	208
	IV	Ins	titutions and Bodies	208
	- · · ·		Wildlife Institute of India, Dehradun (WII)	208
		В.	The Indian Board for Wildlife (IBWL)	208
			The Zoological Survey of India	208
				208
			The National Biodiversity Authority (NBA)	
		E.	The State Biodiversity Board (Section 22)	209
		F.	Biodiversity Management Committees (Section 41)	209
		G.		210
		H.		210
		I.	The Committee for Control and Supervision of Experiments	
			on Animals (CPCSEA)	210
§3.	NAT	ΓΙΟN	AL WILDLIFE ACTION PLAN	210
	I.	Pro	ject Tiger	211
			Core-Buffer Strategy	213

	II. Project Elephant	213
§4.	WILDLIFE CONSERVATION STRATEGY 2002	213
§5.	ENFORCEMENTS AND CONTROL I. Enforcement Agencies II. Ban on Import and Export III. Penalty for Wildlife Offences IV. List of Endangered Species V. Special Coordination and Enforcement Committee VI. Disclosure of Wildlife Stock VII. Captive Breeding Farms VIII. Protection and Enforcement of Biological Diversity Norms A. Powers of the Civil Court B. Appeal (Section 52) C. Execution of Determination or Order (Section 53) D. Penalties (Section 55) E. Penalty for Contravention of Directions or Orders (Section 56) F. Offences (Sections 59 and 61)	2144 2144 215 215 215 2166 2166 217 2177 2177 2177
§6.	ANIMAL WELFARE I. Animal Welfare Board II. Actions Taken III. Schemes Implemented by the Animal Welfare Board	218 218 218 218
Ch	apter 6. Agricultural Resources	219
§1.	AGRICULTURE: THE MAIN OCCUPATION	219
§2.	METHODS EMPLOYED FOR SUSTAINABLE USE I. Crop Rotation II. Maintaining Cattle	219 219 220
§3.	GREEN REVOLUTION	220
§4.	DESERTIFICATION I. UN Convention to Combat Desertification (UNCCD) A. Aims and Objects B. Implementation of the Convention at the National Level C. Implementation of the Convention at the Regional Level D. Network on Agro-forestry and Soil Conservation in Arid, Semi-arid and Dry Sub-humid Regions in Asia	220 220 220 221 221 222
§5.	LAND DEGRADATION I. Extent of the Problem A. Wastelands II. Causes of Land Degradation	222 222 222 223

	A. Soil Erosion	223
	B. Intensive Cultivation	224
	C. Use of Agro-chemicals and Pesticides	224
	D. Waterlogging and Salinity	224
	E. Overexploitation of Common Property Resources (CPR)	224
	F. Industrialization	225
	G. Mining Activities	225
§6.	Enforcement and Control	225
	I. Marginal Farmers and Landless Labourers	225
	II. Balanced and Integrated Use of Fertilizers and Organic Farm	
	Waste and Municipal Solid Waste in Agriculture	226
	III. Integrated Pest Management (IPM)	226
	IV. Plant Quarantine Authority	226
	V. Committees on Agro-biodiversity	226
	VI. International Undertaking on Plant Genetic Resources (Rome, 23	
	November 1983) as supplemented	227
	VII. Programmes	227
	A. Drought Prone Area Programme	227
	B. Desert Development Programme (DDP)	227
	C. Integrated Wasteland Development Programme (IWDP)	228
	D. The Watershed Development Programme	228
	E. Soil Conservation for Enhancing Productivity of Degraded	220
	Lands in the Catchments of River Valley Projects and	
	Flood Prone Rivers	228
	F. Development of Degraded/Rainfed Land	228
§7.	WATER RESOURCE MANAGEMENT IN AGRICULTURE	229
Ü	I. Canal Water	229
	II. Groundwater	229
	III. Rain Water	230
§8.	THRUST AREAS FOR THE TWELFTH FIVE YEAR PLAN	230
Cha	apter 7. Forests	232
§1.	BENEFITS TO THE ECONOMY	232
82	HISTORICAL BACKGROUND	232
84.	I. Ancient India	
		232
	II. Pre-Independence Period	233
	A. Control over Forests	233
	B. Forest Department	233
	C. Categories of Forests	234
	D. Commercial Use	234
	III. Post-Independence	234
	A. Extending Cultivation to Forests	234

			Social Forestry Joint Forest Management with Local People	235 235
			Development versus Conservation	235
§3.	TYF	ES (OF FORESTS	236
	I.	The	e Evergreen Forests	236
	II.	Mo	nsoon Deciduous Forests	236
	III.	The	e Savanna Grasslands	236
			orn Forests	236
			nalayan Forests	236
	VI.	Ma	ngrove Forests	237
§4.			RE ON FORESTS	237
			forestation	237
	11.	Cul	ltivation in Forests	237
§5.	STA	TUT	ORY STRUCTURE AND LEGAL REGIME gislation ient Features of Legislation	238
	I.	Leg	gislation	238
	II.	Sal	ient Features of Legislation	238
			The Indian Forest Act of 1927	238
			The Forest (Conservation) Act of 1920 as Amended in 1988	239
		C.	Forest (Conservation) Rules of 2003	240
§6.			EMENT AND CONTROL	240
	I.		gional Offices of the Ministry of Environment and Forests	
			oEF)	240
	II.		titutes and Other Bodies	240
			Central Board of Forestry	240
		В.	Forest Survey of India	241
			1. Objectives of the FSI	241
			2. Organization	241
			3. Forest Cover Mapping	241 242
		C	4. Forest Inventory	242
			Indian Institute of Forest Management (IIFM) Indira Gandhi National Forest Academy	242
			Indian Council of Forestry Research and Education (ICFRE),	242
			Dehradun	242
		F.	Directorate of Forest Education (DFE)	243
		G.	Indian Plywood Industries Research and Training Institute (IPIRTI), Bhopal	243
		Н	G. B. Pant Institute of Himalayan Environment and	243
		11.	Development, Almora (Uttranchal)	243
		I.	National Afforestation and Eco-development Board (NAEB)	243
			1. Regional Centres	244
			 Professional and Special Services 	244
		T	Eco Task Forces	244

§7. THE NATIONAL FOREST POLICY, 1988	244
§8. AFFORESTATION I. National Afforestation Programme through Community	245
Participation	245
II. Watershed Programme III. National Forestry Action Programme (NFAP)	245 245
IV. Joint Forests Management	246
§9. Forest Fire Control Methods	246
I. National Fire Prevention and Control Guidelines of 1999	246
II. Integrated Forest Protection Scheme III. Village Forest Protection Committees	246 246
•	
§10. Conservation of Medicinal Plants	247
§11. CLEARANCE UNDER THE FOREST CONSERVATION ACT FOR	
DIVERSION OF FOREST LAND	247
I. Industrial Project under EIA	248
II. Single Window Clearance	248
§12. Conservation versus Development	248
§11. CLEARANCE UNDER THE FOREST CONSERVATION ACT FOR DIVERSION OF FOREST LAND I. Industrial Project under EIA II. Single Window Clearance §12. CONSERVATION VERSUS DEVELOPMENT Chapter 8. Fish Resources §1. DISTRIBUTION OF FISH I. Deep Sea Fisheries	249
§1. DISTRIBUTION OF FISH	249
1	249
II. Coastal and Estuarine Fisheries	249
A. Brackish Water Aquaculture	250
B. Control	250
III. The Inland Fisheries	250
§2. STATUTORY STRUCTURE AND LEGAL REGIME	250
I. Legislation	250
A. The Indian Fisheries Act of 1897 and the Fishing	250
Regulation Act of 1981	250
II. International ConventionsA. Third United Nations Conference on the Law of the Sea (1982)	251 251
B. The FAO Kyoto Conference, December 1995	251
III. Fishery Institutes and Bodies	252
§3. Capture Fisheries	252
I. Capture Fisheries Scenario	252
II. Problems Posed by Capture Fisheries	252
A. Overfishing and Discard	253
B. Coastal Fisheries	253
C. Problems of Inland Fisheries	253

	Table of Co	ntent
	D. Issues Related to Deep Sea Fishing	254
	III. Sustainability Concept for Capture FisheriesA. Introduction of New Breeds	254 254
§4.	CONSERVATION AND CONTROL	255
	I. Regulatory Measures	255
	II. Environment Impact Assessment (EIA)	255
Ch	apter 9. Subsoil and Minerals	256
§1.	MINING OF COAL AND OTHER ORES	256
	I. Coal Mines	256
	II. Coal Washeries III. Legislation Dealing with Control and Prevention of Pollution	256
	in Mines	257
	A. Prospecting License	257
	B. Responsibilities of the Licensee	257
	C. Rule-Making Power	257
§2.	HYDROCARBON SECTOR	258
	I. Legislation	258
	A. Prospecting License B. Responsibilities of the Licensee C. Rule-Making Power HYDROCARBON SECTOR I. Legislation II. Brief Description of the Legislation UPSTREAM PETROLEUM SECTOR I. Provisions in the Contract for the Environment A. Contractor to Minimize Damage B. Contractor to Remedy the Failure	258
§3.	UPSTREAM PETROLEUM SECTOR	258
	I. Provisions in the Contract for the Environment	259
	A. Contractor to Minimize Damage	259
	b. Contractor to Rein ety the Fantare	259
	C. Right of the Government to Direct	259
	D. Environmenta Impact Studies	260
	E. Environment Clearance by the Government	260
	F. Responsibility of the Contractor	260
	G. Contingency Plan	261
	H. Emergency	261
	I. Removal of Equipment and Site Restoration	261
	J. National Parks, Mangroves, etc.K. Terms Used in the Provision	262 262
	II. Abandonment and Site Restoration Fund Scheme 1999	263
	III. Production Operations and Pollution	263
84	Downstream	264
3	I. Refining and Pollution	264
	II. Storage	264
	III. Oil Spills	264
	A. Merchant Shipping Act	264
	B. International Conventions	264
	1. International Convention for the Prevention of Pollution	
	from Ships (London, 2 November 1973)	264

 The International Convention on Civil Liability for Oil Pollution Damage, Brussels 1969 (CLC) The International Convention on Establishment of an International Fund for Compensation of Oil Pollution Damage, Brussels 1971 (Fund Convention) 	265 265
Chapter 10. Other Sectors	266
Chapter 10. Other Sectors	200
§1. Dunes	266
§2. Rivers	266
I. Sources of Rivers	266
II. Water Quality Profile of Major Rivers	267
A. River Brahmputra	267
B. River Ganga	267
C. River Yamuna	268
D. River Cauvery	268
E. River Godavari	268
F. River Krishna	268
G. River Mahanadi	269
H. River Narmada	269
I. River Baitrani	269
A. River Brahmputra B. River Ganga C. River Yamuna D. River Cauvery E. River Godavari F. River Krishna G. River Mahanadi H. River Narmada I. River Baitrani J. River Brahmani K. River Mahi L. River Sabarmati M. River Subarnarekha N. River Tapi O. River Ramganga III. Bio-monitoring of Rivers/Water Bodies	269
K. River Mahi	269
L. River Sabarmati	269
M. River Subarnarekha	270
N. River Tapi	270
O. River Ramganga	270
III. Bio-monitoring of Rivers/Water Bodies	270
IV. National River Conservation Plan (NRCP)	271
V. Public Participation	271
VI. National River Conservation Directorate	272
VII. The Japan International Cooperation Agency (JICA) Study	272
vii. The saparational Cooperation Agency (SICA) Study	
§3. Lakes	272
I. National Lake Conservation Plan (NLCP)	273
§4. Wetlands	273
I. Wetland Conservation Programme	273
II. Ramsar Convention on Wetlands of International Importance	
Especially as Waterfowl Habitat (2 February 1971)	273
III. Management Action Plan for Wetlands	273
A. Achievement of the Management Action Plan	274
B. Thrust Areas in the Twelfth Plan	274
§5. THE COASTAL ZONE	275
•	

§6. MANGROVES I. Best Mangroves in India II. Scheme on Conservation and Management of Mangroves III. National Mangrove Genetic Resource Centre	275 275 276 276
§7. CORAL REEF I. Indian Coral Reef Monitoring Network II. National Coral Reef Research Institute	276 276 277
§8. MARINE NATIONAL PARKS (MNR) I. Gulf of Kutch A. Biological Diversity B. Sustainability Indicators C. Problems and Threats II. Gulf of Mannar A. Biological Diversity B. Sustainability Indicators C. Problems and Threats	277 277 277 278 278 278 278 278 278 279
 III. The Mahatma Gandhi Marine National Park, Wandoor Andaman and Nicobar Islands A. Biological Diversity B. Sustainability C. Problems and Threats 	279 279 280 280
Part III. Zoning and Land Use Planning	281
Chapter 1. Introduction	281
Chapter 2. Urban and Rural Zoning	283
Chapter 3. Statutory Structure and Legal Regime I. Constitutional Position A. The Constitution Seventy-third Amendment Act B. The Constitution Seventy-fourth Amendment Act of 1992 1. Right to Collect Taxes 2. Urban Local Bodies: Vibrant Self-governing Institutions	284 284 284 284 285 285
II. LegislationIII. Salient Features of LegislationA. The Urban Land (Ceiling & Regulation) Act of 1976 and	285 286
the Urban Land (Ceiling and Regulation) Repeal Act of 1999 B. Administration of Delhi Development Act of 1957	286 286
C. Delhi Urban Art Commission Act of 1973	287
D. National Capital Region Planning Board Act of 1985E. The Requisitioning and Acquisition of Immovable Property	287
Act of 1952	287

F. The Public Premises (Eviction of Unauthorized Occupants) Act of 1971	287
G. The Employment of Manual Scavengers and Construction	
of Dry Latrines (Prohibition) Act of 1993	287
IV. Initiatives by the Urban Development Ministry	288
A. Model Legislation	288
B. Legal Reforms in Related Areas	288
Chapter 4. Land Use Planning	289
I. Land Use and Five Year Plans	289
II. Consolidation of Holdings	290
III. Twenty-five-year Perspective Plan for the Development of	200
Rain-Fed Areas IV. Changes in the Land Use	290 290
	290
Chapter 5. National Planning Chapter 6. Regional Planning Chapter 7. Local Planning Chapter 8. Municipal Planning L. The Master Plan and Development Plan	292
	• • •
Chapter 6. Regional Planning	293
Chapter 7. Local Planning	294
Chapter 8. Municipal Planning	295
I. The Master Plan and Development Flan	295
II. Master Plan of Delhi 2025: Guidelines	295
III. No Change in the Development Plan	295
Chapter 9. Environmentally Sensitive Zones and	
Industrial Sites	296
Part IV. Liability Questions	297
	_,.
Chapter 1. Liability Under Environmental Legislation	297
Chapter 2. Liability under Criminal Law	299
I. The Indian Penal Code (IPC)	299
A. Public Nuisance	299
B. Spreading an Infectious Disease	299
C. Food Adulteration	299
D. Corrupting or Fouling Water	299
E. Vitiating the Atmosphere	300
F. Dealing with Poisonous Substances	300
G. Negligently Dealing with Explosives	300
H. Public Nuisance Not Otherwise Covered	300

Chapter 3. Substantive Rules of Liability	301
I. Deprivation of Life and Personal Liberty	301
II. Improvement of Public Health a Primary Duty	301
III. Duty Not to Dislocate and Disrupt Lifestyles IV. Duty of the State and Citizens to Protect and Improve the	302
Environment	302
V. Public Trust Doctrine	303
VI. Duty to Develop without Causing Pollution	303
VII. Duty to Take Positive Measures	304
VIII. Precautionary Principle	304
IX. Polluter Pays Principle (PPP) X. Rule of Strict Liability	305 306
·	500
Chapter 4. Duty to Preserve for Future Generations	307
Chapter 5. Balance between Development, Planning and	
Environment	308
Part V. Juridical Actions of Individuals Chapter 1. Civil Action L. Private and Public Nuisance	309
Chapter 1. Civil Action	309
I. Private and Public Nuisance	309
Chapter 2. The Criminal Procedure Code (CrPC)	310
I. Powers of Magistrates to Remove Obstruction or Nuisance	310
II. Powers to Direct and Abstain	311
III. Preventive Powers under the Police Act of 1861	312
Chapter 3. Actions Prescribed under Specific Legislation	313
, x, y, ,	
Chapter 4. Access of Citizens to Apex Courts	314
Chapter 5. Administrative Remedies	315
§1. Administrative Bodies	315
§2. THE COMMITTEES	315
§3. Administrative Action and Judiciary	315
§4. HIERARCHICAL RELATIONSHIP	316
§5. TYPES OF RECOURSE BODIES I. Central Pollution Control Board	316 317

 II. State PCBs III. National Environmental Tribunal IV. National Environment Appellate Authority (NEAA) V. The Loss of Ecology (Prevention and Payments of Compensation)	317 318 318 318 318
§6. RIGHT OF COMPLAINT I. Civil Action II. Criminal Prosecution III. Environmental Legislation IV. Class Actions or Representative Actions A. Procedure under the Civil Procedure Code (CPC) B. Protection of Public Interest	319 319 319 320 320 321
Chapter 6. Judicial Remedies	322
Chapter 6. Judicial Remedies \$1. THE COURT SYSTEM I. Supreme Court II. High Courts III. Subordinate Courts \$2. JUDICIAL OR ADMINISTRATIVE RECOURSE	322 323 323 323
§2. JUDICIAL OR ADMINISTRATIVE RECOURSE I. Writ Jurisdiction A. Exhaustion of Remedies Available in Special Legislation B. Constitution of Green Penches C. Judicial Review II. Action under the Civil Procedure Code (CPC)	324 324 325 325 325 325
§3. RIGHT OF ACTION I. Public Interest Litigation II. Sufficient Interest	326 326 326
§4. ENVIRONMENTAL GROUPS AND ASSOCIATIONS I. Evolution of Environmental Groups II. Letters, Newspaper Reports as Writs III. Environmental Groups Launching Criminal Prosecution IV. Success Stories and Achievements	327 327 328 329 329
Selected Bibliography	331
Index	335