

Introduction to Urban Planning
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Lecture - 37
National Environmental Legal Requirements

Welcome to the course introduction to urban planning. In today's session we are going to look at the legal requirements from the environmental point of view and will mostly focus on the national level. And in this lecture, you should comprehend urban planning objectives. At the same time, you should look at the environmental concerns which we are facing which we have already covered before and then other legislation in mind.

You should keep those things in perspective while you go through this. And this is a very wide area as we see that this is this can or this is completely a subject in itself. So, we are going to cover it in a very brief manner. So, I will just going to walk you through different different legislations which are available to us and I would say it is not a comprehensive list yet. But then we will just review though those in a very brief manner.

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Coverage	
①	Environment Protection Act, 1986
②	National Environmental Policy (NEP), 2006
③	EIA Notification, 2006
④	Comprehensive Environmental Protection Index
⑤	Environmental Quality Concern
⑥	Eco-sensitive Zones
⑦	Coastal Regulation Zone, 2011

So, accordingly our coverage for today would include that we will look into the environmental protection act of 1986 as well as we look at the national environmental policy then EIA

notification to certain detail will look at the comprehensive environmental protection index as well as will look at the environmental quality concerns which are there and adopted in the system will look at eco sensitive zones.

Further we will look at the coastal regulation zones and then we will also look at the e-waste management rules. Then how we are ah moving forward to address the urban rivers and then further we will look into energy sector then we will also briefly look into the Indian Forest Act. Further we will look at certain environmental guidelines which are important for us as urban planners.

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Coverage	
8	E-waste management Rule , 2016
9	Mainstreaming Urban River Management into Master Plans
10	Urban River Management Plan (URMP)
11	Strategic Plan for New and Renewable Energy Sector for 2011-17
12	The Indian Forest Act, 1927
13	Environmental Guidelines
14	Disaster Management Act, 2005
15	The Legal and Regulatory Framework For Environmental Protection in India

As well as briefly just will name the guidelines which are available for us in disaster management. And then we will look at the legal and regulatory framework for environmental protection. So, that would be our coverage.

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Learning Outcomes

- 1 Discuss the Environment Protection Act, 1986
- 2 Review the National Environmental Policy (NEP), 2006
- 3 Brief of EIA Notification, 2006
- 4 Discuss the Comprehensive Environmental Protection Index
- 5 Discuss Environmental Quality Concern
- 6 Discuss the Eco-sensitive Zones
- 7 Discuss the Coastal Regulation Zone, 2011

Accordingly, the learning outcomes which are expected is that you should take a comprehensive review of all these acts. And you should be able to look at all these acts you should be able to list them, you should be able to tell the purpose of these act.

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Learning Outcomes

- 8 Discuss the E-waste management Rule , 2016
- 9 Discuss about Mainstreaming Urban River Management into Master Plans
- 10 Review the Urban River Management Plan (URMP)
- 11 Discuss the Strategic Plan for New and Renewable Energy Sector for 2011-17
- 12 Review The Indian Forest Act, 1927
- 13 List the Environmental Guidelines
- 14 Discuss the Disaster Management Guidelines
- 15 List the Legal and Regulatory Framework For Environmental Protection

And you should critically review in terms of what they are able to achieve or not achieve and what kind of provision they give. And you should be able to connect it with the larger goal of planning as well as larger sustainability development goals. So, moving on and looking at environmental protection act of 1986 we see as per the URDPFI guidelines since we are looking at from the perspective of planning.

As per the URDPFI guidelines there are certain norms and standards which should be referred for preparation of all the plans which we had seen for a city or whichever level we are preparing. So based on that we should be looking at the rules identified in environmental protection act of 1986 as well as we have certain standards like air act 1981 as well as noise pollution regulation and control act of 2000. These all need to be referred.

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Statutory Obligations of Environment Clearances	
Type of Clearances	Statutory obligations
Environment Clearances	As per EIA notification, 2006
Forest Clearances	As per Forest Conservation Act, 1980
GEAC Clearances	Rules for Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells 1989, under EPA 1986
GEAC Clearances	Rules for Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells 1989, under EPA 1986

The Act may be referred from the web URL provided in Appendix O, Volume II B.

(URDPFI Guidelines, 2015)

For the purpose of environmental clearance, the various statutory obligations for difference clearance are EIA notification of 2006 which should be referred by planners as well as for the purpose of forest clearance. We look at forest conservation act of 1980 further anything related with manufacture use of import, export, storage of hazardous and genetically engineered organism or cells. For that we look at the EPA act of 1986 for GEAC clearance purpose.

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Environment Protection Act, 1986

So, let us first look into environmental protection acts of 1986. The environmental protection acts of 1986 has notified various rules under the environmental protection for protecting the environment related with manufacture, use, import, export and storage of hazardous substance waste and so on.

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Environment Protection Act, 1986

- The Bio -Medical Waste (Management and Handling) Rules, 1998,
- The Recycled Plastics Manufacture and Usage Rules,1999
- The Municipal Solid Wastes (Management and Handling) Rules, 2000
- The Noise Pollution (Regulation and Control) Rules, 2000
- The Ozone Depleting Substances (Regulation) Rules, 2000
- The Batteries (Management and Handling) Rules, 2001

(URDPFI Guidelines, 2015)

Including principle solid waste, noise pollution, ozone depletion substance. And likewise, you can see in the list here. The environmental protection acts of 1986, makes provision for the protection and improvement of the environment.

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The Environment (Protection) Act, 1986

No. 29 OF 1986

[23rd May, 1986]

**An Act to Provide for the Protection and Improvement of Environment
and for Matters Connected therewith.**

WHEREAS decisions were taken at the United Nations Conference on the Human Environment held at Stockholm in June, 1972, in which India participated, to take appropriate steps for the protection and improvement of human environment;

AND WHEREAS it is considered necessary further to implement the decisions aforesaid in so far as they relate to the protection and improvement of environment and the prevention of hazards to human beings, other living creatures, plants and property;

(The Environment
Protection Act, 1986)

This act was created at the backdrop of United Nations Conference on the human environment held at Stockholm in June 1972 in which India participated to take appropriate steps for the protection and improvement of human environment.

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National Environmental Policy (NEP), 2006

Further in 2006, we see National Environmental Policy.

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National Environmental Policy (NEP), 2006

- Emphasizes on conservation, prevention of degradation and equity of natural resources
- Aims at mainstreaming environmental concerns into all developmental activities
- Proactive measures taken at various fronts
 - Regulatory reforms
 - Process related reforms
 - Substantive reforms
 - Enhancing and conserving environmental resources
 - Prevention of land degradation
 - Desert ecosystem, and
 - Other factors

(URDPFI Guidelines, 2015;
NEP, 2006)

National environmental policy of 2006 covers an integrated approach to reduce the impact on environmental degradation on human life by taking proactive measure at various fronts. These include regulatory reform, process related reform, substantive reforms enhancing and conserving environmental resources, prevention of land degradation, desert ecosystem and also various other factors that influence the environment.

This policy we see that it focuses on ensuring that people who are dependent on natural resources for securing their livelihoods from the act of degradations should realize that a greater purpose will be served from the conservation of resources which includes land, desert ecosystem, water, wildlife forests, wetlands and so on. Now briefly and selectively we will not look at all the aspects electively.

Looking at the EIA notification of 2006, EIA we have another subject on this EIA environmental impact assessment.

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Environment Impact Assessment Notification 2006

So, this was taken as a tool to take care of the sustainability aspect.

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Environment Impact Assessment Notification 2006

- To ensure the economic growth and development in conformity with regulations for environmental conservation
- 39 developmental sectors require prior environmental clearance (EC)
- MoEF&CC has prepared EIA guidelines: Elaborates the procedure and mandatory requirements of EIA with respect to the sector.

(EIA Notification, 2006;
drishitas, 2020)

So, EIA notification of 2006 we see that considering environmental concerns and to ensure that the economic growth and development in India is in conformity with regulations for environmental conservation. The ministry of environment and forest and climate change notified the environmental impact assessment notification in 2006. The EIA notification 2006 has notified the various developmental sectors which require prior environmental clearance.

So, you can find a list which gives various sectors, activities and projects which need environmental clearance. Considering recent developments and to ensure that the economic

growth and development in our country is in conformity with regulations for environmental conservation. The ministry has notified this environmental clearance process under implementation prior to 2006 highlighted the need to reduce specific processes, categories activities.

And also, the need for new sectors such as coal, washeries to be brought in the ambit of environmental clearance process because such kind of things had a larger environmental impact. So, EIA notification 2006 has notified 39 development sectors which require prior EC. We further see that ministry has prepared EIA guidelines on each sector as identified by EIA notification 2006 which elaborates the procedure and mandatory requirements of EIA with respect to each sector.

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Categorization of Projects and Activities

- I. All projects and activities are broadly categorized in to two categories -
 1. Category A and
 2. Category B,

based on the spatial extent of potential impacts and potential impacts on human health and natural and man made resources.

- II. All projects or activities included as **Category 'A'** in the Schedule, including expansion and modernization of existing projects or activities and change in product mix, **shall require prior environmental clearance from the Central Government in the Ministry of Environment and Forests (MoEF)** on the recommendations of an Expert Appraisal Committee (EAC) to be constituted by the Central Government for the purposes of this notification;

(EIA Notification, 2006)

Further notification sets the requirement for prior environmental clearance. It sets list of projects and activities that shall require prior environmental clearance from the central government in the ministry of environment forest and climate change.

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SCHEDULE
(See paragraph 2 and 7)

LIST OF PROJECTS OR ACTIVITIES REQUIRING PRIOR ENVIRONMENTAL CLEARANCE

Sl. No.	Category with description	General Conditions
1	Mining, extraction of other minerals and power generation (of a specified production capacity).	
(i)	(a) Mining of minerals 200 ha of mining lease area in respect of non-ferrous lease 100 ha of mining lease area in respect of coal mine lease All projects All projects All projects	(a) Mining of minerals 200 ha of mining lease area in respect of non-ferrous lease 100 ha of mining lease area in respect of coal mine lease General Condition shall apply Note: Mineral processing is exempted. All projects All projects All projects
(ii)	(a) Many pipelines (road lights and other areas passing through national parks / sanctuaries / coral reefs, ecologically sensitive areas. All projects	(a) Many pipelines (road lights and other areas passing through national parks / sanctuaries / coral reefs, ecologically sensitive areas. All projects
(iii)	(a) Offshore oil and gas exploration, development & production. All projects	(a) Offshore oil and gas exploration, development & production. All projects
(iv)	(a) River Valley projects (i) 10 MW hydroelectric power generation, (ii) 10,000 ha of cultivable command area (i) 10 MW hydroelectric power generation, (ii) 10,000 ha of cultivable command area	(a) River Valley projects (i) 10 MW hydroelectric power generation, (ii) 10,000 ha of cultivable command area (i) 10 MW hydroelectric power generation, (ii) 10,000 ha of cultivable command area General Condition shall apply Note: Irrigation projects not involving submergence or inter-state domain shall be approved by the SAMA in Category 'B' Projects.

(EIA Notification, 2006)

For matters falling under category A in the schedule as per the list the matters which fall under category A are required to get clearance from central government. Further the projects and activities falling under category B require to take approval from the state environmental impact assessment authority.

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Stages in the Prior Environmental Clearance (EC) Process for New Projects

- Stage (1) Screening (Only for Category 'B' projects and activities)
- Stage (2) Scoping
- Stage (3) Public Consultation
- Stage (4) Appraisal

(pppinidia, 2010-11)

It also provides the procedure for EIA such as stages of screening, scoping, public consultation and appraisal. So, you see how the EIA act of 2006 makes provision for the process for which projects have to be considered and how it has to be processed.

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Comprehensive Environmental Protection Index (CEPI)

Now let us briefly look into comprehensive environmental protection index CEPI. Looking at this comprehensive environmental protection index, CEPI we see that CEPI is a rational number to characterize the quality of environment at a given industrial area following the algorithms of source pathways and receptor. CPCD, centre for pollution control board evaluated comprehensive environmental pollution index of hundred polluted industrial areas on environmental quality monitoring which was conducted in 2018 as per the report of 2021 of MOEFCC.

So, this environmental pollution index of air, water and land are evaluated based on presence of toxins, industrial activity level of pollution, health statistics and adequacy of waste management facilities.

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Comprehensive Environmental Pollution Index (CEPI)

Overall CEPI scores are calculated from the EPI score

In the scale of 0-100

- if score exceeds 70, then the industrial cluster is categorized as 'Critically Polluted Area (CPA)'
- if score 60 and above and less than 70, the industrial cluster is categorized as 'Severely Polluted Area (SPA)'

(CEPI Technical Report, 2019)

If you look at slight categorization based on the range they do. We see that overall index score are calculated from the EPI score and if score exceeds 70 in the scale of 0 to 100 then the industrial cluster is categorized as critically polluted area. And if score is 60 and above and it is less than 70 the industrial cluster is categorized as severely polluted area. So, we see two categories critically polluted areas and severely polluted areas.

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Critically Polluted Industrial Clusters			
Sr. No.	Name of State	Clusters with CEPI >70 (38 Critically polluted areas)	Clusters with CEPI 60-70 (31 severely polluted areas)
1.	Andhra Pradesh	--	Vijayawada
2.	Assam	Byrnihat	--
3.	Bihar	--	Hajipur
4.	Chhattisgarh	Raipur, Siltara Industrial Area	--
5.	Delhi	Najafgarh-Drain basin including Anand Parbat, Naraina, Okhla, Wazirpur	--
6.	Gujarat	Ankleshwar, Vapi, Rajkot, Surat, Vatva, Vadodara	Bhavnagar
7.	Haryana	Gurgaon, Panipat	Faridabad
8.	Himachal Pradesh	--	Baddi, Kala Amb, Parwanoo
9.	Jharkhand	--	Hazaribagh, Saraikela, Ramgarh
10.	Karnataka	Peenya, KIADB Industrial Area-Jigini	Bidar

(MoEF & CC annual report 2021-21)

In the list here you can see that Byrnihat in Assam, in Siltara industrial area in Raipur, Chhattisgarh, you can see Najafgarh drain basin including Anand Parbat, Naraina, Okhla, Wazirpur, all in Delhi. Ankleshwar, Vapi, Rajkot, Surat, Vatva, Vadodara in Gujarat, you can see they all are categorized under critically polluted areas.

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Sr. No.	Name of State	Clusters with CEPI >70 (38 Critically polluted areas)	Clusters with CEPI 60-70 (31 severely polluted areas)
11.	Madhya Pradesh		Singrauli (MP area)
12.	Maharashtra	Chandrapur, Tarapur	Aurangabad, Nashik, Dombivali, Navi Mumbai
13.	Orissa	--	IB Valey, Paradeep
14.	Punjab	Ludhiana, Jalandhar	Batala
15.	Rajasthan	Bhiwadi, Jodhpur, Jaipur, Pali, Sanganeer Industrial Area	--
16.	Tamil Nadu	Vellore-North Arcot, Manali, Tirupur, Mettur	Coimbatore, Cuddalore, Erode, Tuticorin
17.	Telangana	Pattancheru-Bollaram	Kukatpally, Kattedan
18.	Uttar Pradesh	Gajraula Area, Ghaziabad, Kanpur, Agra, Bulandshar-Khurza, Firozabad, Moradabad, Mathura, Varanasi-Mirzapur	Aligarh, Singrauli (UP area), Meerut, Noida
19.	Uttarakhand	Udham Singh Nagar	--
20.	West Bengal	--	Bandel, Durgapur, Howrah

(MoEF & CC annual report 2021-21)

Likewise, we see I am just picking up some of the examples here Vijayawada in Andhra Pradesh Hajipur and Bihar they are categorized under severely polluted areas. So, looking at this index, this index is actually used as a warning tool and to formulate appropriate action plan to restore environmental quality within as per the norms. So, we see that this particular index also has its implication on the EIA process.

Like any project or activity specified in category B 1 which as per the procedure is reviewed by the state level authority. For EIA if it falls under the critically polluted area or severely polluted area will be appraised by the central level. If it is located part or incomplete within the five kilometres from these boundaries of critically polluted areas or severely polluted areas.

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Environmental Quality Concern

Now moving forward, we are going to look at some of the environmental quality concerns and how different institutions are taking care of it. The concern for environmental quality has become the top most issue in the present scenario of rising population increasing, urbanization industrial pollution, shipping, aviation and vehicular emissions. So, you have experienced all that we have discussed in our initial class.

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Measures and Policies for Pollution Control

- Various steps have been initiated which include
 - stringent regulations
 - development of environmental standards and periodical revision of theirs
 - control of vehicular
 - industrial
 - air, noise and water pollution

(MoEFCC Annual Report 20-21)

So, in order to address that based on what I read through the environmental report of MOEFCC 2021, we see that to give effect various measures and policies for pollution control. Various steps have been initiated which include like stringent regulations, development of environmental

standards and periodical revisions of their of those standards as well as control of vehicular control on industry, air noise and also taking care of the water pollution.

So, now if you will see the ministry's emphasis is more on the pollution prevention rather than end of the pipe treatment. This has led to initiatives for identification of best available and practicable technologies as the key elements for pollution prevention. So, it is better to prevent than to really treat it at the later point.

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Focus Areas of the Various Programmes and Schemes

- Promotion of clean and low waste technologies
- Waste minimization
- Reuse or recycling
- Improvement of water quality
- Nationwide monitoring of air quality
- Environmental audit
- Development of mass based standards,
- Institutional and human resource development and so on

(MoEFCC Annual Report 20-21)

The focus of various program and schemes of the ministry and its associated organization is on promotion of clean and low waste technologies. We also look at the waste minimization, reuse or recycling, improvement of water quality, nationwide monitoring of air quality, environmental audit, development of mass based standards, institutional and human resource development and so on. So, we see such kind of initiatives.

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Sustainability Strategies in Urban Planning

- Regional Planning
- Compact city/ High Density Development
- Redevelopment / redensification
- Open Spaces
- Energy Efficiency- NonConventional /Renewal Energy, Energy Efficient Design, Building Performance Certification and Rating System
- Urban Transport
 - Transit Orient Development (TOD), Strengthening of Public Transport System, Reducing Fuel Consumption per passenger, Road Passenger with Urban Transport systems, NonMotorised Transport (NMT) and Intelligent Transport System (ITS), NonConventional source of Energy, Accessibility

(URDPFI Guidelines, 2015)

Further narrowing; it down if I would like to just name some of them. In the case of strategies particularly, sustainable strategies in the urban planning we see that regional planning is seen as one of the approach to address this also compact city, high density development. So, we have discussed on these as well and then also focusing on redevelopment, re densification, creation of open space.

Also looking at energy efficiency by employing non conventional as well as renewable energy sources. Further we see energy efficient design like looking at building performance certificate and rating system as well as handling the urban transport issues like transit oriented development. Then also looking at strengthening of public transport system reducing fuel consumption per passenger; road passenger with urban transportation system, non-motorized transport NMT and intelligent transport systems.

So, all these are strategies in the urban areas which we are looking at to address the environmental issues, environmental concerns. Also, we are looking at non-conventional source of energy and accessibility in the transport sector as well.

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Sustainability Strategies in Urban Planning

- Urban Infrastructure
 - Zero Waste and Waste Recycling, GHG mitigation measures for wastewater, Decentralised Wastewater Management, Low Water use and Ecological Sanitation, Recovery of Energy, Reducing need for pumping
- Climate Change Mitigation and Adaptation- Green Building, City Bio Diversity Index

(URDPFI Guidelines, 2015)

Further in the urban infrastructure segment. We see zero waste and waste recycling, GHG mitigation measures for wastewater, decentralized wastewater management, low water use and ecological sanitation, recovery of energy, reducing need for pumping. So, this all we; have been lot of interventions which are addressing this environmental concern in the area of urban infrastructure.

Further we see that with respect to climate change mitigation and adaptation we have been working on green building also developing index such as city biodiversity index. So, the whole issue of pollution, prevention and control is dealt with by a combination of command and control method as well as voluntary regulations, fiscal measures, promotion of awareness, advancement of research in pollution abatement technologies and so on.

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Items of Work Handled in 'Control of Pollution' Division

- Industrial Pollution,
- Water, Air and Noise Pollution including Marine Pollution,
- Common Effluent Treatment Plants(CETPs)
- Water(Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981
- Taj Trapezium Zone (TTZ)
- Recognition of private laboratories under Environment (Protection) Act, 1986
- Air pollution/Noise Pollution, Appeals under Air Act,
- Formulation and review of Environmental Standards.
- Emission Trading Scheme (ETS)
- Matters relating to Customs Duty Exemption for CNG kits.,
- Source Apportionment Studies
- Environment Health
- Comprehensive Environmental Protection Index (CEPI)
- Assistance for abatement of pollution
- Vehicular Pollution
- Administrative and financial matters of CPCB,
- Bilateral and Multilateral programs relating to pollution.

(MOEF&CC
annual report
2020-21)

So, looking at the items of work handled in control of pollution by the CPCB. This division we see some of the interventions items of work include industrial pollution, waste air and noise pollution including marine pollution, common effluent treatment plant, CETPs, water prevention and control of pollution act 1974, air prevention and control of pollution act of 1981, Taj Trapezium zone TTZ, recognition of private laboratories under environmental protection act 1986.

Then we also see air pollution, noise pollution appeals under air act formulation and review of environmental standards and so on. You can see and we have already looked into the comprehensive environmental protection index which is also another item looked into by CPCB.

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Draft Environment Impact Assessment (EIA) Notification 2020

So, moving forward further we see that ministry of environment forest and climate change has published the draft environmental impact assessment notification 2020.

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Draft EIA Notification 2020

- The Ministry of Environment, Forest and Climate Change (MoEF&CC) has published the draft Environment Impact Assessment (EIA) Notification 2020, with the intention of replacing the existing EIA Notification, 2006 under the Environment (Protection) Act, 1986
- The Key Proposals of the 2020 Draft include:
 - Reduced Time for Public Hearings
 - Exemption of Projects

(drishtias, 2021)

With the intention of replacing the existing EIA notification of 2006 under the Environmental Protection Act of 1986. The key proposal of 2020 draft include like reduction in time for public hearing for the exemptions of projects. You may look at notification and also align review with it that all are suggested in the readings given here.

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Eco-sensitive Zones

Moving forward.

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MoEF & CC Guidelines for Eco-Sensitive Zones (ESZs) around Protected Areas

- The Ministry of Environment and Forests (MoEF) has come out with new guidelines to create eco-sensitive zones (ESZs) around Protected Areas to prevent ecological damage caused due to developmental activities around National Parks and Wildlife Sanctuaries.

(Conservationindia, 2010)

We are going to look at the ministry's guidelines for eco sensitive zones around the protected areas.

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Eco Sensitive Zones

- Wild Life Protection Act, 1972 gave provision for the creation of National Parks, Sanctuaries and Closed Area
- Buffers around the protected areas: as shock absorber
- Eco-sensitive Zones: transition zone from areas of high protection to areas involving lesser protection
- The activities in the eco-sensitive zones are regulatory in nature rather than prohibitive nature

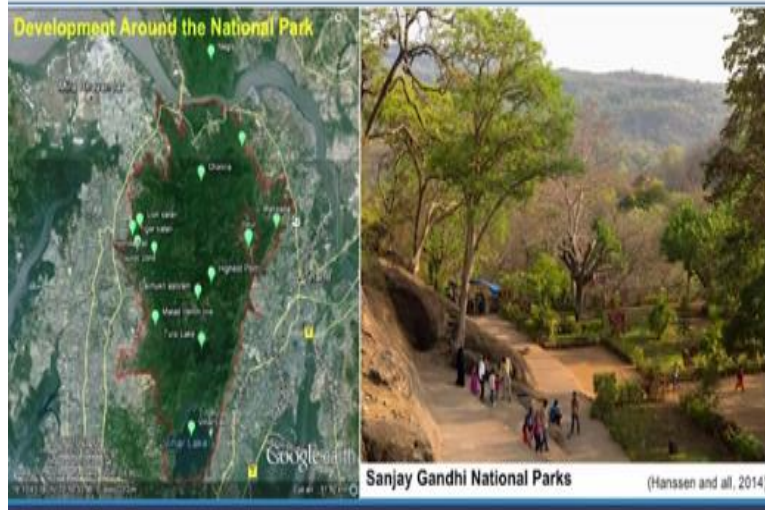
(URDPFI guidelines, 2015)

Referring from URDPFI guidelines Wildlife Protection Act 1972, Wildlife Protection Act 1972 gave provision for creation of national parks sanctuaries and closed area. The purpose of buffers around these protected areas as is to provide them as a shock absorber and based on that eco sensitive zones were declared. So, eco sensitive zones would also act as transition zone from areas of high protection to areas involving lesser protection.

The activities in the eco sensitive zones are regulatory in nature rather than prohibitive nature. You may look for details for the buffer and regulations for identified activities in the zone. You may refer to URDPFI guidelines table 7.2 for this purpose. So, this provides guidelines for declaration of eco sensitive zones, how do we really identify which are the eco sensitive zones. Many of the protected areas have undergone tremendous development in close vicinity of the national park such as Gandhi national park in Tamil Nadu.

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Large Development Near National Parks



And Sanjay Gandhi national park in Maharashtra. So, the width of eco sensitive zone and type of regulations differ from protected area to protected area. But general principle is that the width of the eco sensitive zone could be up to 10 kilometres around the protected area as per the wildlife conservation strategy of 2002.

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Coastal Regulation Zone

Now let us look at the coastal regulation zone. The central government declared certain areas as coastal regulation zone CRZ and imposed restrictions on the setting up and expansion of industries, operations or process and like in the CRZ through the coastal regulations zone notification 2011.

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Coastal Regulation Zone (CRZ)

Objectives

- To ensure livelihood security to fishing and other local communities
- To conserve/ protect coastal stretches
- To promote development based on scientific principles

Timeline of CRZ Regulations

- CRZ Notification 1991
- CRZ Notification 2011
- Draft CRZ Notification, 2018

(CRZ, 2011; drishtias, 2020)

In this the prime objective was to ensure livelihood security to fishing and other local communities living in coastal areas. And to conserve, protect coastal stretches while also promoting development based on scientific principles. The CRZ notification was issued in 1991, this notification was superseded by CRZ notification of 2011. And then we see further that draft coastal regulation zone notification is available of 2018 now.

The CRZ notification covers categorization of CRZ areas, permissible and prohibited activities regulation of permissible activities in CRZ areas, procedure for clearance, preparation of coastal zone management plan, mapping and area requiring special consideration and so on. So, these all are covered under this notification.

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Coastal Regulation Zone

- The coastal areas of seas, bays, creeks, rivers, and backwaters which get influenced by tides up to 500 m from the high tide line (HTL) and the land between the low tide line (LTL) and the high tide line
- Ministry of Environment, Forest and Climate change under the Environment Protection Act 1986 issued notification in 1991 for regulation of human and industrial activities in coastal areas.



(Parthasarathy, Gahlot, 2020; pczma, 2021)

So, the coastal area of seas, bays, creeks, rivers and back waters which get influenced by tides up to 500 meter from the high tide line and the land between the low tide line and the high tide line have been declared as coastal regulation zone in 1991. The coastal regulation zones have been declared by ministry of environment forest and climate change under the environmental protection act 1986.

While these CRZ rules are made by union government ministry, implementation is to be insured by the state governments through their coastal zone management authorities. So, rules are made by the central government and then this state government ensures its implementation.

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HTL, LTL and Spring Tides

- **High Tide Line:** the line on the land up to which the highest water line reaches during the spring tide
- **Low Tide Line:** the line on the land up to which the lowest water line reaches during the spring tide
- **Spring tides:** The position of both the sun and the moon in relation to the earth has direct bearing on tide height. When the sun, the moon and the earth are in a straight line, the height of the tide will be higher. These are called spring tides and they occur twice a month, one on full moon period and another during new moon period

(drishilas, 2020)

Briefly looking into the definition of high tide, low tide and spring tide as per the CRZ.

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Importance of Regulation of Coastal Zones

- Protection of ecologically Sensitive Areas such as
 - mangroves,
 - coral reefs
- Improving the lives of coastal communities like fishing communities
- Resilient measures for mitigating impacts of Climate Change and high-intensity Cyclones
- To balance development with conservation of the coastal environment



Mangroves
Coral reefs

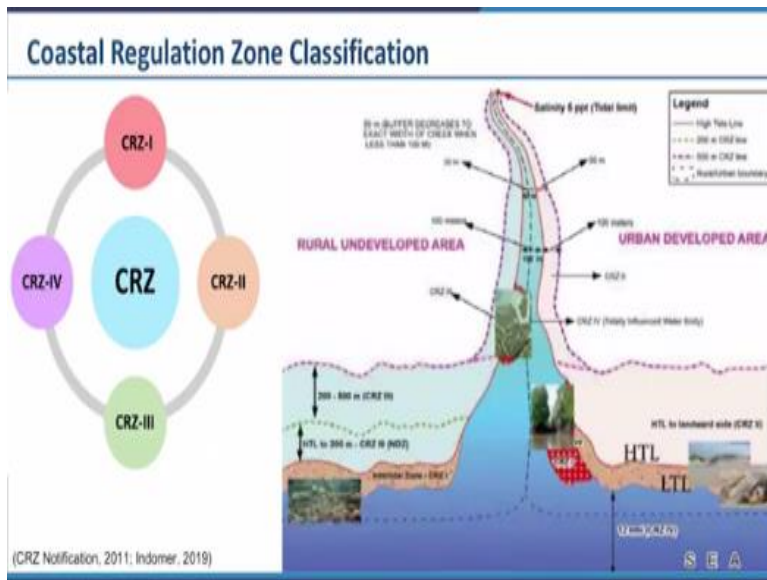
(Graham, 2020; Vema, 2017; Sundararaju, 2019)

Looking at the; importance of regulation of the coastal zones. So, why is it really important to regulate the zones? Coastal regulation zones are important for the protection of ecologically sensitive areas like mangroves, coral reefs which act as a shield against tsunami and cyclone, improving the lives of the coastal communities like fishing communities, resilient measures from mitigating impact of climate change and high intensity cyclones.

They are important to balance development with conservation of the coastal areas. In India the coastal regulation zone rules govern human and industrial activity close to the coastline in order to protect the fragile ecosystem near the sea. So, the kind of activities they restrict is like large construction setting up of new industries, storage or disposal of hazardous material, mining recreation and bunding.

So, all these restricted activities are mentioned. We will look into zones to have little understanding of different categories here.

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So, we see that these zones are classified into CRZ 1, 2, 3 and 4. We see CRZ constitutes the ecologically sensitive areas and the geomorphological features which play a role in the maintaining the integrity of the coast.

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Classifications of Coastal Zones under CRZ Notification 2018

(CRZ Notification, 2018)

- **CRZ-I: Environmentally most critical areas**
 - **CRZ-I A** shall constitute the following ecologically sensitive areas and the geomorphological features which play a role in the maintaining the integrity of the coast viz.:
 - Mangroves
 - Corals and coral reefs
 - Sand Dunes
 - Biologically active Mudflats
 - National parks, marine parks, sanctuaries, reserve forests, wildlife habitats and other protected areas under the provisions of Wild Life (Protection) Act, the Forest (Conservation) Act or Environment (Protection) Act; including Biosphere Reserves
 - Salt Marshes
 - Turtle nesting grounds
 - Horse shoe crabs habitats
 - Sea grass beds
 - Nesting grounds of birds
 - Areas or structures of archaeological importance and heritage sites
 - **CRZ-I B:** The intertidal zone i.e. the area between Low Tide Line and High Tide Line

We see that coastal regulation zone one constitutes the ecological sensitive areas and the geomorphological features which play a role in maintaining the integrity of the coast. We see the CRZ 1 B is the, inter intertidal zone the area between low tide line and high tide line constitutes CRZ 1 B.

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Classifications of Coastal Zones under CRZ Notification 2018

CRZ-II

- CRZ-II shall constitute the developed land areas up to or close to the shoreline, within the existing municipal limits or in other existing legally designated urban areas, which are substantially built-up with a ratio of built up plots to that of total plots being more than 50% and have been provided with drainage and approach roads and other infrastructural facilities, such as water supply and sewerage mains etc

(CRZ Notification, 2018)

Likewise, we see that there is CRZ 2 which constitute the developed land area to or close the shoreline with the existing municipal limits or in the other existing legal designated urban areas or any habitation which are substantially built up with the ratio of built up plots to that of the total plots being more than 50%. So, we see that these come under CRZ 2.

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Classifications of Coastal Zones under CRZ Notification 2018

- **CRZ-III:** Land areas that are relatively undisturbed (viz rural areas etc) and those do not fall under CRZ-II, shall constitute CRZ -III.
 - **CRZ-III A:**
 - Such densely populated CRZ-III areas, where the population density is more than 2161 per sq km as per 2011 census base
 - In CRZ-III A, area up to 50 mts from the HTL on the landward side shall be earmarked as the No Development Zone (NDZ), provided the Coastal Zone Management Plans (CZMPs) as per this Notification, framed with due consultative process, have been approved, failing which, a NDZ of 200 mts shall continue to apply.
 - **CRZ-III B:**
 - All other CRZ-III areas with population density of less than 2161 per sq km, as per 2011 census base
 - In CRZ-III B, the area up to 200 mts. from the HTL on the landward side shall be earmarked as the No Development Zone (NDZ).

(CRZ Notification, 2018)

Furthermore, we see that land areas that are relatively undisturbed and do not fall under the CRZ 2. They constitute CRZ 3, you may look at the sub classifications provided here. Land area up to 50 meters from the high tide line or the width of the creek whichever is less along the tidal influence, water bodies are also here marked as the NDZ in the CRZ 3 areas. And these shall not be applicable where areas fall within the notified port limits.

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Classifications of Coastal Zones under CRZ Notification 2018

- CRZ- IV: shall constitute the water area
 - CRZ- IV A:
 - The water area and the sea bed area between the Low Tide Line up to twelve (12) nautical miles on the seaward side
 - CRZ- IV B:
 - shall include the water area and the bed area between LTL at the bank of the tidal influenced water body to the LTL on the opposite side of the bank, extending from the mouth of the water body at the sea up to the influence of tide, i.e., salinity of five parts per thousand (ppt) during the driest season of the year

(CRZ Notification, 2018)

Further we see that CRZ 4 constitute the water area and are further classified as you may make note of it. We further see that CRZ 4 constitute the water area and is also further classified as you may note here. We further see that the act provides specific procedure that has to be adopted for obtaining project clearance including rapid environmental impact assessment, disaster management report and risk management report.

CRZ maps indicating the different lines, no objection certificates from CPCB and then other related stuff here. We see that this notification also points out certain ecologically sensitive areas which are given specific consideration under the CRZ.

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Areas Requiring Special Considerations



So, we say that there are critically vulnerable coastal areas which include for example which are the list is given here. You have Sundarbans region of West Bengal and other ecologically sensitive areas identified as under environmental protection act such as Gulf of Khambat and Gulf of Kachchh in Gujarat and so on. So, this list is provided to you.

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Areas Requiring Special Considerations

- For the purpose of protecting critical environment and difficulties faced by local communities
 - CRZ for inland backwater islands and islands along the mainland coast
 - CRZ falling within municipal limits of Greater Mumbai

(CRZ Notification, 2018)

Further we see that special consideration is also given to inland backwaters island and islands along the mainland coast. Also, areas falling within the municipal limits of greater Mumbai. So, these all are identified as areas requiring special consideration.

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E-waste Management Rule , 2016

Moving forward we also find e-waste management rules of 2016.

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E-waste Management Rule , 2016

The Ministry of Environment, Forest and Climate Change has notified the E-Waste Management Rules, 2016 in supersession of the e-waste (Management & Handling) Rules, 2011



Indiaenvironmentportal, 2016)

The e-waste management in India is registered under the environmental protection act of 1986. With the objective of taking all steps required to ensure that e-waste is managed in a manner we shall protect health and environment against any adverse effect which may result from such e-waste. So, there is lot of e-waste which we generated and current times.

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Mainstreaming Urban River Management into Master Plans

Moving forward we also see interventions on mainstreaming urban river management into master plans. Seeing that; cities and rivers have an intrinsic relationship traditionally. The rivers have been at the centre of various cultural regional livelihood related and recreational avenues in cities. However, over the years in the pursuit of economic development cities have exploited rivers indiscriminately. Today many of our rivers as per the report is in highly vulnerable condition.

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Mainstreaming Urban River Management into Master Plans

The document, Mainstreaming Urban River Management into Master Plans, is a guide to help city planning authorities in mainstreaming Urban River Management practices into their existing Master Plans, or while preparation of their upcoming plans.



Draft Strategic Guidelines.

So, the document mainstreaming urban river management into master plan is a guide to help city planning authorities in mainstreaming urban river management practices into their existing

master plans or while preparation of their upcoming plans. So, it guides them guides the authority.

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URBAN RIVER MANAGEMENT PLAN (URMP)

Further urban river management plan jointly prepared by national mission for clean Ganga and URMP provides a framework for all river cities in the Ganga River basin.

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URBAN RIVER MANAGEMENT PLAN (URMP)

- To assist cities along the Ganga River to improve the state of the river in their stretch.

What is the need for an Urban River Management Plan?

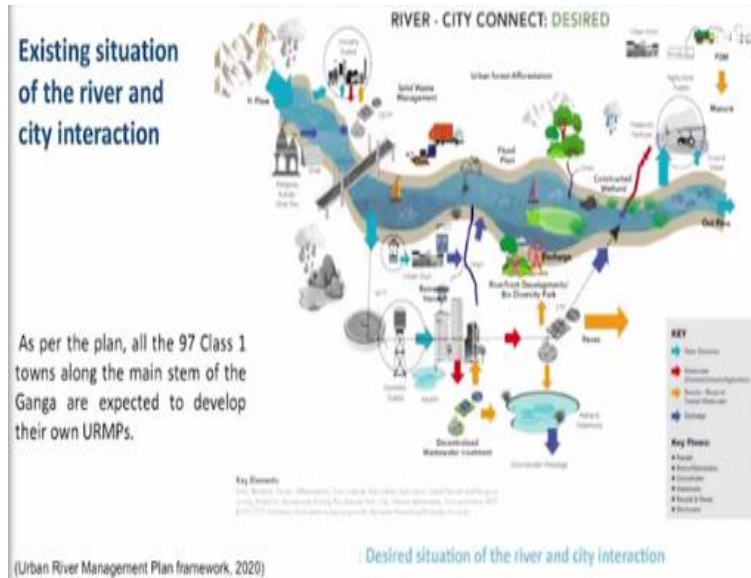
Any improvement in the river's condition cannot be achieved without first addressing the issues in urban areas.

Cities have been a major part of the problem and will need to be part of the solution as well.

(Urban River Management Plan framework, 2020)

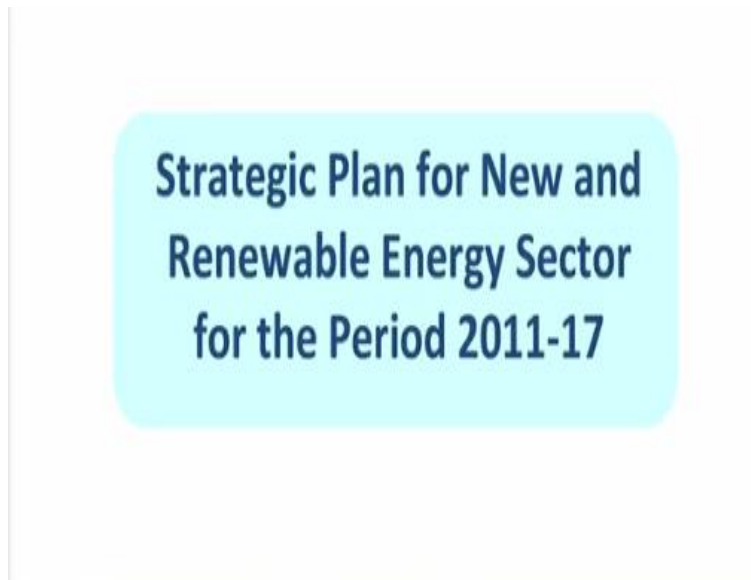
Looking at the overall objective of this document. We see that this is the intention of this document is to assess cities along the Ganga River to improve the state of the river in their stretch.

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And while the central focus is on Ganga the document also applies to other rivers flowing through these cities.

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Now we look at strategic plan for new and renewable energy sector for the period 2011-17 ministry of new renewable energy. As per the URDPFI guidelines statement India's substantial and sustained economic growth is placing enormous demand on its energy resources. The demand and supply imbalance in energy source is pervasive requiring serious efforts by government of India to augment energy supply.

So, we are in a very critical situation where we really need to work on the energy component. So, in India imports about 80% of its oil. There is a threat for its increasing further so creating serious problem for India's future energy security.

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The Vision of Ministry of New and Renewable Energy (MNRE)

- To upscale and mainstream the use of new and renewable energy sources in furtherance of the national aim of energy security and energy independence, with attendant positive impact on local, national and global environment
- The broad aim of the Ministry is to develop and deploy new and renewable energy to supplement the energy requirements of the country



(MNRE, 2021)

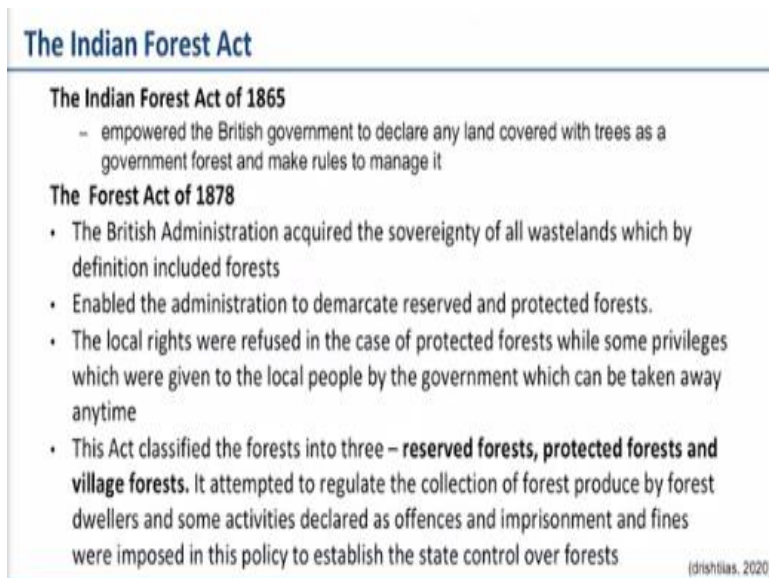
So, the vision of ministry of new and renewable energy is to upscale and mainstream the use of new and renewable energy sources and in advancing the national aim of energy security and energy independence with like attendant positive impact on local national and global environment. You may further look into smart city and document for funding sources and conversion provision for energy.

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Indian Forest Act, 1927

Moving on we will quickly look into the Indian forest act. The imperial forest department set up in 1864, attempted to establish British control over forest by various legislations.

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The Indian Forest Act

The Indian Forest Act of 1865

- empowered the British government to declare any land covered with trees as a government forest and make rules to manage it

The Forest Act of 1878

- The British Administration acquired the sovereignty of all wastelands which by definition included forests
- Enabled the administration to demarcate reserved and protected forests.
- The local rights were refused in the case of protected forests while some privileges which were given to the local people by the government which can be taken away anytime
- This Act classified the forests into three – **reserved forests, protected forests and village forests**. It attempted to regulate the collection of forest produce by forest dwellers and some activities declared as offences and imprisonment and fines were imposed in this policy to establish the state control over forests

(drishitias, 2020)

The Indian Forest act of 1865 empowered the British government to declare any land covered with trees as a government forest and makes rules to manage it. By the forest act of 1878, the British administration acquired the sovereignty of all wasteland which by definition included forest. So, as a result the act enabled the administration to demarcate, reserved and protected forest.

The local rights were refused in case of protected forest while same privileges which were given to the local people by the government which can be taken away any time. This act classified the forest into three categories that is reserved forest, protected forest and village forest. It attempted to regulate the collection of forest produced by the forest dwellers and some activities declared as offenses and imprisonment and fines were imposed in this policy to establish the state control over forest.

So, India's forest act of 1927 aimed to regulate the movement of forest produce and like duty liable forest produce. It also explains the procedure to be followed by declaring an area as reserved forest, protected forest or village forest. This act has detailed of what a forest offense,

what are the act prohibited inside reserved for its and penalties which are liable on violation of the probation of the act.

So, observations indicate that many of the village communities were alienated from their age olds symbolic association with the forest. It was basically enacted to make forest laws more effective and to improve the previous forest law.

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Classification of Forests

- **Reserved Forests:** the most restricted forests and are constituted by the State Government on any forest land or wasteland which is the property of the Government
 - In reserved forests, local people are prohibited, unless specifically allowed by a Forest Officer in the course of the settlement
- **Protected Forests:** The State Government is empowered to constitute any land other than reserved forests as protected forests over which the Government has proprietary rights and the power to issue rules regarding the use of such forests
 - This power has been used to establish State control over trees, whose timber, fruit or other non-wood products have revenue-raising potential
- **Village forest:** Village forests are the one in which the State Government may assign to 'any village community the rights of Government to or over any land which has been constituted a reserved forest'
- **Degree of protection**
 - Reserved forests > Protected forests > Village forests

(dishitias, 2020)

So, we see types of forests. You can see here reserved forest. Reserve forest are the most restrictive forest then you see another type is protected forest in which the government has the proprietary rights and the power to issue rules regarding the use of such forest. Then we see village forest, you may take note of this village forests are the one in which the state government may assign to any village community the rights of government to or over any land which has been constituted as a reserved forest.

And if you look at the; degree of protection so reserved forest is highly protected. Then you have protected forest and then village forest which has less governmental protection.

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Forest Policies/ Acts

- Indian Forest Policy, 1952
- Forest Conservation Act, 1980
- National Forest Policy, 1988
 - provided strong and significant basis for Joint Forest Management

(drishtias, 2020)

For the acts we see are like Indian Forest Policy 1952, Forest Conservation Act 1918 and then we see act in 1988. In 1988 particularly national forest policy act provided strong and significant basis for joint forest management.

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Environmental Guidelines

Moving forward we see certain environmental guidelines.

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Environmental Guidelines

- Environmental Guidelines for Industries
- Guidelines for Rain Water Harvesting
- Guidelines for Buffer Zones
- Environmental Guidelines for Planning Eco-fragile zones such as
 - coastal area
 - eco-sensitive zones
 - water bodies in urban areas
 - desert areas and wetlands
 - hilly areas

(URDPFI Guidelines, 2015)

So, we have environmental guidelines for industries. So, that can be referred while making plans. This guideline for industry provides area to be avoided and it also provides citing criterias. Then you have guidelines for rainwater harvesting, you have guidelines for buffer zones. So, various kind of buffer zones related with eco sensitive zone, industrial area and so on are available. So, you also see environmental guidelines for planning eco fragile zones.

Such as coastal area, eco sensitive zone, water bodies in urban areas, desert areas, wetlands and hilly areas. So, for those all environmental guidelines are available.

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Environmental Guidelines

- Disaster management guidelines
 - Flood management,
 - Earth quake management
 - Drought management
 - Cyclone management
 - Tsunami Management
 - Landslides/ Snow Avalanches Management
 - Urban Flooding Management
- For man made disaster
 - Chemical Terrorism Disasters(CTD) Management
 - Chemical (industrial) Disaster Management
 - Nuclear & Radiological Disaster Management
 - Fire Services Management

(URDPFI Guidelines, 2015)

Moving on we see that there is also guideline for disaster management by NDMA with respect to flood management, earthquake management, drought management, cyclone management, tsunami management, landslides, no avalanches management even for urban flood management. And the guideline also includes man-made disaster such as chemical terrorism disaster then also nuclear and radiological disaster and fire disaster and so on.


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Disaster Management (DM) Act 2005

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Disaster Management Plan

- **State Disaster Management Plan (SDMP)**
 - The Section 23 of Disaster Management (DM) Act 2005 states that there shall be a DM plan for every state
- **District Disaster Management Plan (DDMP)**
 - Section 31, DM Act, 2005 makes mandatory to formulate District Disaster Management Plan by District Authority in consultation with local authorities



(URDPFI guidelines, 2015)

So, we find the section 23 of the disaster management act, 2005 states that there shall be disaster management plan for every state. So, every state is required to prepare a disaster management

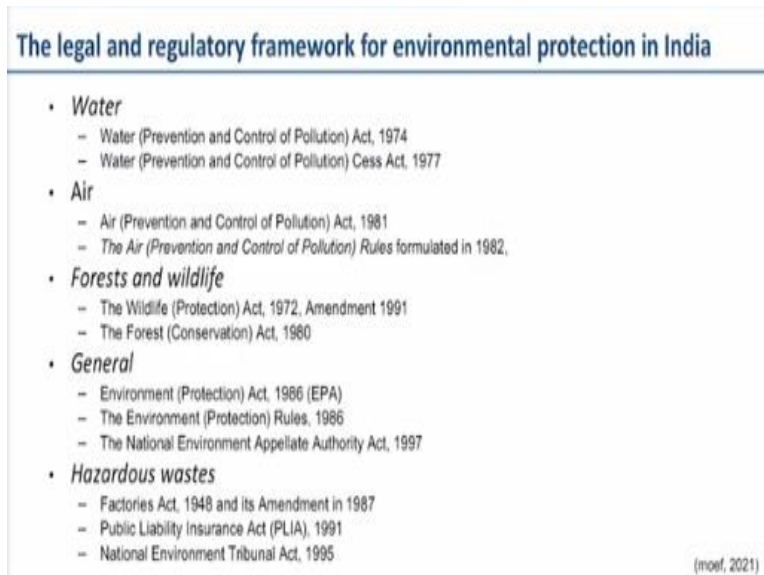
plan as well as we see that every district is required to make a district disaster management plan under this provision of same act of 2005.

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We find other led legal and regulatory framework as well.

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So, entire list is provided to you with respect to water, air, forest and wildlife in general and then hazardous waste.

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The legal and regulatory framework for environmental protection in India

- **International agreements on environmental issues**
 - *Convention on International Trade in Endangered Species of wild fauna and flora (CITES), 1973*
 - *Montreal Protocol on Substances that deplete the Ozone Layer (to the Vienna Convention for the Protection of the Ozone Layer), 1987*
 - *Basel Convention on Transboundary Movement of Hazardous Wastes, 1989*
- *UN Framework Convention on Climate Change (UNFCCC), 1992*
- *Convention on Biological Diversity, 1992*
- *UN Convention on Desertification, 1994*
- *International Tropical Timber Agreement and The International Tropical Timber Organisation (ITTO), 1983, 1994*

(moef, 2021)

And then we also see that international agreements also are there on environmental issues such as UN framework convention on climate change and then convention on biological diversity. So, these all act as a reference for us how to abide by it at the national and international level.

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Summary

- 1 Discussed the Environment Protection Act, 1986
- 2 Reviewed the National Environmental Policy (NEP), 2006
- 3 Looked into EIA Notification, 2006
- 4 Discussed the Comprehensive Environmental Protection Index
- 5 Looked into Environmental Quality Concern
- 6 Discussed the Eco-sensitive Zones
- 7 Discussed the Coastal Regulation Zone, 2011

Summarizing here: So, this was all about the all rules and regulations which are there it was in a very very brief manner brought to you. So, here we see that today we studied about environmental protection act. We also looked at national environmental policy we looked at EIA notification then also very briefly touched upon comprehensive environmental protection index. Then also looked at environmental quality concerns, eco sensitive zones, coastal regulation zones

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Summary

- 8 Discussed the E-waste management Rule , 2016
- 9 Discussed about Mainstreaming Urban River Management into Master Plans
- 10 Reviewed the Urban River Management Plan (URMP)
- 11 Looked at Strategic Plan for New and Renewable Energy Sector for 2011-17
- 12 Reviewed The Indian Forest Act, 1927
- 13 Listed the Environmental Guidelines
- 14 Discussed the Disaster Management Guidelines
- 15 Listed the Legal and Regulatory Framework For Environmental Protection

As well as e-waste management rules then how, we are looking at mainstreaming urban river management and mainstreaming it into master plan as well as guideline for urban river management. Then we looked into the plan for new and renewable energy. As well as we looked into forest act as well as we listed environmental guidelines which are available for planners and as well as disaster management guidelines by NDMA. And then we listed legal and regulatory framework for environmental protection in India.

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Key References

- URBAN AND REGIONAL DEVELOPMENT PLANS FORMULATION AND IMPLEMENTATION (URDPFI) GUIDELINES, Volume I and Volume II 2015
- Guidelines for Eco-Sensitive Zones around Protected Areas
- Urban River Management Plan framework, 2020
- Comprehensive Environmental Assessment of Industrial Clusters, 2009
- Monitoring, Sampling and Analysis of Ambient Air Quality, Surface and Ground Water Quality in the Identified 10 Critically Polluted Areas of India (Under Phase-1) Programme, 2014
- Draft CRZ Notification, 2018
- Draft EIA, 2020
- EIA Notification 2006
- Ministry of Environment, Forest and Climate Change, Annual Report 2020-21
- Environment protection Act 1986
- E-waste (Management) Rules, 2016
- The Indian Forest Act, 1927
- Mainstreaming urban river management into master plans, NA
- Mechanism for environmental management for Critically and severely Polluted Areas, 2019

So, these were the references.

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Suggested Watch

<https://www.youtube.com/watch?v=rLNzVeg092Q>
What's causing pollution in India

<https://www.youtube.com/watch?v=vzqH4MsroAQ>
How does the new draft EIA affect the environment and us?

<https://www.youtube.com/watch?v=A54IM7kqISY>
In Ludhiana, the Demand of Cheap, Trendy Clothes Is
Closely Linked with Death and Disease

<https://www.youtube.com/watch?v=isycOW9INcA>
Environmental Law in India

Our coverage was limited with the scope to make you aware of the topic.

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Suggested Readings

URBAN RIVER MANAGEMENT PLAN (URMP)

COMPREHENSIVE ENVIRONMENTAL ASSESSMENT OF INDUSTRIAL CLUSTERS

THE INDIAN FOREST ACT, 1927

THE ENVIRONMENT (PROTECTION) ACT, 1986

MECHANISM EVOLVED AFTER CONSULTATION WITH STAKEHOLDERS FOR NEW ACTIVITIES EXPANSION BY RED & ORANGE CATEGORY OF INDUSTRIES IN CRITICALLY/RECENTLY POLLUTED AREAS

GUIDELINES FOR DECLARATION OF ECO-SENSITIVE ZONES AROUND NATIONAL PARKS AND WILDLIFE SANCTUARIES

(To be published in the Gazette of India, Extraordinary, Part III, Section 3, Sub-section (ii))

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

New Delhi, the ———— March, 2019

NOTIFICATION

(PUBLISHED IN THE GAZETTE OF INDIA, EXTRAORDINARY PART-III, SECTION-3, SUB-SECTION (ii))

GOVERNMENT OF INDIA

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 27th March, 2018

DRAFT CRZ NOTIFICATION 2018

(TO BE PUBLISHED IN THE GAZETTE OF INDIA, EXTRAORDINARY, PART-III, SECTION-3, SUB-SECTION (ii))

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, dated: 2018

(Published in the Gazette of India, Extraordinary, Part-III, and Section 3, Sub-section (ii))

MINISTRY OF ENVIRONMENT AND FORESTS

New Delhi 14th September, 2006

NOTIFICATION

There are enormous readings and movies available to explore few are suggested here. This is not an extensive list; you may feel free to suggest more from your experience.

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Please feel free to ask Questions.



Let us know about any Concerns you have .



Do share your Opinions, Experiences and Suggestions.

Looking forward to Interacting and



Co-learning with you while exploring Cities and Urban Planning.



Please feel free to ask questions let us know about your concerns, you have do share your opinion experiences and suggestions. Looking forward to interacting and co-learning with you while exploring cities and urban planning, so, that was all for today. Thank you.