Strategies for Sustainable Design Professor Doctor Shiva Ji Indian Institute of Technology, Hyderabad Lecture 37 Environmental Laws

Hello everyone in this lecture we will discuss about environmental laws. So, the laws which are necessary to control the impact, from like a different quarter from like a different industry, even like us as like individuals, so that we do not actually end up harming our environment in this way or the other. So, for that actually we need environmental laws and in this lecture, we will discuss what are those laws and what do they do?

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So, the first one here you can see like some ISO international standards and technical reports regarding the LCA. So, we will actually proceed one by one. So, in this way if you see like, what these are actually ISO standards which we talk about. So, the ISO standard 14,040, 1997 It talks about environmental management, lifecycle assessment, principles and framework.

ISO 14,041, from like 1998, it talks about environmental management, lifecycle assessment, goal and scope definition and inventory analysis. ISO 14,042 in year 2000, it talks about environmental management, lifecycle assessment, lifecycle impact assessment. Similarly, 14,043 talks about life cycle interpretation, the next one talks about lifecycle assessment examples of application of ISO 14,042.

Further 14,048 talks about data documentation format, the ISO standard 14,049 talks about environmental management lifecycle assessment examples of application of ISO 14,041 to

goal and scope definition in inventory analysis. So, you see like this series of like a 14,040 to 49, these are actually ISO standards are majorly actually handling or dealing with the lifecycle analysis.

So, while lifecycle is analysis, we have discussed in the LCA chapter and how this can be actually brought, how this can be enforced, on the like a different manufacturing units, or the service sector or anyone who is causing actually, who has to do something with the product lifecycle. So, these are actually the ISO standards brought in force for the actually organizations to follow.

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| | Year 1974 | Environmental Law Water (Prevention and Control of Pollution) Act 1974. As amended through 2 June 2010 | | | | |
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| NPTEL | 1974 | The Water (Prevention and Control of Pollution) Act 1974. As anended through 2 June 2010 The Water (Prevention and Control of Pollution) Rules 1975. As amended through 24 November 2011 | | | | |
| | 1975 | The Water (Prevention and Control of Pollution) Cess Act 1973. As anended through 24 November 2011 The Water (Prevention and Control of Pollution) Cess Act 1977. As amended through 2 June 2010. | | | | |
| | 19// | The water (Prevention and Control of Pollution) Cess Act 1977. As amended through 2 June 2010. The Income Taxation Laws (Amendment) Act 2017 repeals the whole of Water (Prevention and Cont | | | | |
| | Pollution) Cess Act 1977, as enforced on 1 July 2017. | | | | | |
| | 1978 | The Water (Prevention and Control of Pollution) Cess Rules 1978. As amended through 6 July 1992. | | | | |
| | 1980 | The Forest (Conservation) Act 1980 | | | | |
| | 1981 | Air (Prevention and Control of Pollution) Act 1981. As amended through 2 June 2010. | | | | |
| | 1982 | Air (Prevention and Control of Pollution) Rules 1982. As amended through 18 February 1992. | | | | |
| | 1986 | Environment Protection Act 1986. As amended through 2 June 2010 | | | | |
| | 1986 | Environment Protection Rules 1986. As amended through 9 August 2017 | | | | |
| | 1988 | The Motor Vehicles Act 1988 as amended by Motor Vehicles (Amendment) Act 2015, dt 20 March 2015 and | | | | |
| | | 1 The Motor vehicles Act 1988 as amended by Motor vehicles (Amendment) Act 2015, dt 20 March 2015 at | | | | |
| | 1988 | | | | | |
| | 1966 | | | | | |
| | 1988 | The Central Motor Vehicles Rules, 1989 as amended by Central Motor Vehicles Amendment Rules 201 | | | | |
| | | The Central Motor Vehicles Rules, 1989 as amended by Central Motor Vehicles Amendment Rules 201 dated 27 June 2017 The Hazardous Wastes (Management and Handling) Rules 1989. | | | | |
| | | The Central Motor Vehicles Rules, 1989 as amended by Central Motor Vehicles Amendment Rules 201 dated 27 June 2017 The Hazardous Wastes (Management and Handling) Rules 1989. The Hazardous and Other Wastes (Management & Transboundary Movement) Rules 2016. As amended | | | | |
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| | | The Central Motor Vehicles Rules, 1989 as amended by Central Motor Vehicles Amendment Rules 201 dated 27 June 2017 The Hazardous Wastes (Management and Handling) Rules 1989. The Hazardous and Other Wastes (Management & Transboundary Movement) Rules 2016. As amend through 28 February 2017. These rules have replaced the earlier Hazardous Wastes (Management, Handlin | | | | |
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| | 1989 Week 1: Defi Lecture 4: 1 | The Central Motor Vehicles Rules, 1989 as amended by Central Motor Vehicles Amendment Rules 201 dated 27 June 2017 The Hazardous Wastes (Management and Handling) Rules 1989. The Hazardous and Other Wastes (Management & Transboundary Movement) Rules 2016. As amend through 28 February 2017. These rules have replaced the earlier Hazardous Wastes (Management, Handlin | | | | |

Further coming down to the precise like environmental laws and in which year you can see the column is on the left of the ear and then what is it is called, that actually title is given on the right side. So, I will read one by one, then we will discuss in the coming slides, the detail about these laws.

So, the Indian the 19 year, 1974 the water prevention and control of Pollution Act was placed and it was further amended in the year 2010. In the 1975, the water prevention and control of pollution rules 1975 was came and it was further like amended in the year like 2011. Further, we have now in the 1977 the water prevention and control of pollution Cess act 1977 as amended through like 2010, the income taxation laws Amendment Act 2017 repeals the whole of water prevention and control of like a pollution act Cess 1977 as it is enforced on first July 2017. Further in the 1978, the water prevention and control of pollution Cess rules 1978 was brought as amended to like this date in 1992. In the 1980, it was like the Forest Conservation Act was actually brought, so you see like a previously the focus was more on the water, because in the initial like decades, once the India actually got it's like independent independence, several actually manufacturing units, plants, and factories they came up in like many like cities and places across the like India and these started actually causing environmental issues and the major one to observe was in the like of water.

So, as a result, you can see like how this actually this control of the water, actually prevention and control of pollution actually, this act was brought in like a different, like a times and different like a versions to actually strengthen it is like the limitations and scope, so that it can serve in a better manner.

Further in the 1990 year, we see this Forest Conservation Act was brought. Further in 1981, we see the air prevention and control Air Pollution Act, were also coming. So, we see like how this progression has started. So, pollution is the actually a direct indicator of the imbalance, absorbed in the like ecology and this is how these actually acts have also got their names.

So, the first act of air pollution prevention was brought in year 1981, which was further rectified in year 2010 and the second act was actually brought the set of rules was bought in the like a year in 1982 and it was for the remainder in 1992. So, further like in 1986 Environmental Protection Act 1986 was brought and it was amended in 2012.

In 1986, only environmental protection rules were also brought, which was amended in 1917. Further in 1988, we can see this motor vehicles act 1988 was amended by motor vehicles Amendment Act 2015, dated like 28 March 2015 and the central motor vehicles rules 1989 as amended by set of Central motor vehicles amendment rules 2017, dated 27 June 2017 was actually.

Further in the year 1989 the hazardous waste management and handling rules 1989 was actually brought, the hazardous and other waste management transboundary moment rules 2016 was as amended to like a 28 February 2017, these rules have replaced the earlier Hazardous Waste Management handling and transboundary moment rules 2008. So, you can see like how this the framing of these laws and these set of like rules have progressed over time.

So, the first it was water, then it was about the forest, then it was about the air, then overall like environmental protection, then it was about the causing the major agents of like, these emissions and etc like motor vehicles and then hazardous waste which are actually getting accumulated, on getting actually piled up in the like cities and places. So, this is how actually it has progressed over the time.

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And further we will see like a different these laws and the notifications which have occurred over like a different time. So, the pollution related like control laws like Environmental Protection Act, Water Pollution Act, Air Pollution Act, Noise Pollution Act, Hazardous Substances and Organisms Act, climate change related ozone depleting substances related. So, these are the serious set of laws, which are central around one or the other kind of like a pollution.

An operational notification, so aside if you see like there we have like a pollution control board, we have like a central pollution control board we have like a state pollution control boards also different states have their own pollution control boards, we have like a Environmental Assessment EIA, we have like eco-levelling etc.

Further on the conservation related laws, we have these many sets you can see Indian forest Act, which works for the like conservation of forests and Forest Conservation Act in 1980. The first one if you see it was brought in the Indian Forest Act 1927 before independence and then the third one joint forest management circular then wildlife Protection Act particularly

for the like a biodiversity and the animals and the birds who are like living in the wild elements etc from the like a forest.

Then Coastal regulation zone notification, aquaculture authority notification, biosafety and recombinant DNA guidelines, biological diversity act 2002. On the procedural laws, if you see we have constitution 11th and 12th schedules. Appellate authorities anyone environmental tribunal we have like for example, we have national green tribunal NGT, we have public Liability Insurance Act, we have provisions of Indian Penal Code, obviously provisions of Criminal Procedure Code, provisions of like a Factories Act 1940. So, these actually to deal with the kind of crimes which happen somewhere in the like, the environmental actually domain. So, we have these like a standard like IPC and Criminal Procedure courts also, to tackle those actually situations. So, we will see like a one by one.

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| NPTEL | The National Green Tribu | nal Act, 2010 | | |
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| | The National Green Tribunal Act, 2010 (No. 19 of 2010) (NGT Act) has been enacted with the objectives to provide for establishment of a National Green Tribunal (NGT) for the effective and expeditious disposal of cases relating to environment protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto. | | | |
| | The Act received the assent of the President of India on June 2, 2010, and was enforced by the Central Government vide Notification no. S.0. 2569(E) dated October 18, 2010, with effect from October 18, 2010. The Act envisages establishment of NGT in order to deal with all environmental laws relating to air and water pollution, the Environment Protection Act, the Forest Conservation Act and the Biodiversity Act as have been set out in Schedule 1 of the NGT Act. | | | |
| | Consequent to enforcement of the National Green Tribunal Act, 2010, the National Environment Tribunal Act, 1995 and the National Environment Appellate Authority Act, 1997 stand repealed. The National Environment Appellate Authority established unders 3(1) of the National Environment Appellate Authority Act, 1997 stands dissolved, in view of the establishment of the National Green Tribunal under the National Green Tribunal Act, 2010 vide Notification no. S.O. 2570(E) dated October 18, 2010. | | | |
| P | | /waste-management/624836/environment-laws-in-india | | |
| | | Dr. Shiya Ji | | |

So, NGT act 2010. The entity act 2010, has been enacted with the objectives to provide for establishment of a national green tribunal for the effective and expeditious disposal of cases related to environmental protection and conservation of forests and other natural resources, including enforcement of any legal rights relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental their to.

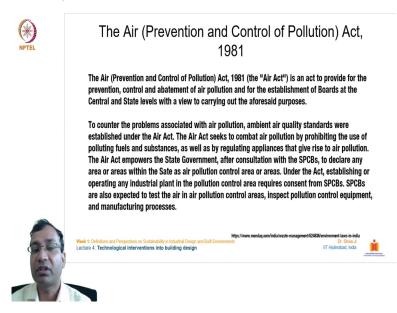
The act received the asset of the president of the assent of the President of India on June 2010 and was enforced by the central government vide notification this and this in like a year 2010

with effect from October 18 2010. The Act envisages the establishment of NGT in order to deal with all environmental laws relating to air and water pollution.

The Environment Protection Act, the Forest Conservation Act and Biodiversity act, as have been set out in schedule one of the NGT Act. The consequent to enforcement of the national green tribunal act 2010, the National Environmental Tribunal act 1995, and the National Environmental Appellate Authority Act 1997 stands rappelled.

The National Environmental applet authority established under Section 3 1 of the National Environmental Applet Authority Act 1997 stands to dissolve. In view of the establishment of the national green tribunal under the National Green Tribunal Act 2010 vide notification so and so from like a year 2010.

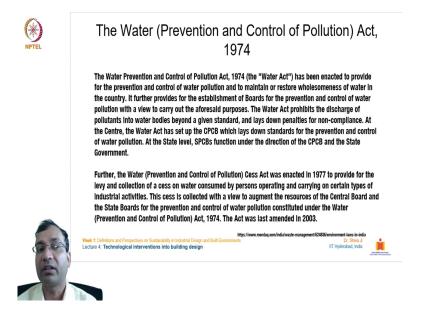
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Further the air prevention and control of Pollution Act 1981, the air prevention and control of Pollution Act 1981. That Air Act is an act to provide for the prevention control and abatement of air pollution and for the establishment of boards at the central and state level with the view of carrying out the aforesaid purposes.

To counter the problems associated with the air pollution, ambient air quality standards were established under this Act. The Air Act seeks to combat air pollution by prohibiting the use of polluting fuels and substances as well as by regulating appliances that give rise to air pollution. The Air Act empower the state government after consultation with the SPCBs, to declare any area or areas within the state as air pollution control areas. Under the Act establishing or operating any industrial plant in the pollution control area requires consent from SPCBs, SPCBs also like expected to test the air in like air pollution control areas, inspect pollution control equipment and manufacturing processes.

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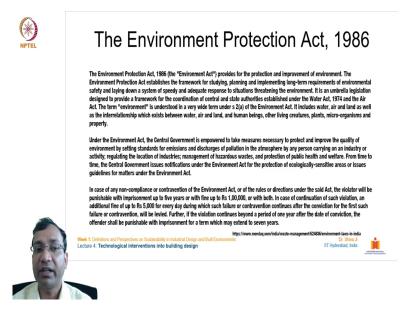


Further the Water Prevention and Prevention Act like 1974, the Water Prevention and Control of Pollution Act 1974. The Water Act has been enacted, to provide for the prevention and control of water pollution and to maintain or restore wholesomeness of water in the country, it further provides for the establishment of boards for the prevention and control of water pollution with the view to carry out their aforesaid purposes.

The Water Act prohibits the discharge of pollutants into water bodies beyond a given standard and lays down penalties for non-compliance. At the centre of the Water Act has set up the CPCB which lays down standards for the prevention and control of water pollution, at the state level SPCBs function under the direction of CPCB and the state government.

Further the water prevention and control or pollution Cess Act was enacted in 1977. To provide for the levy and collection of cess on water consumed by persons operating and carrying on certain types of industrial activities. The cess is collected with a view to augment the resources of the Central Board and the state boards for the prevention and control of water pollution constituted under the Water Act 1974. The Act was last amended in the year 2003.

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Further the Environmental Protection Act in 1986, the Environmental Protection Act 1986. The environment Act provides for the protection and improvement of the environment. The Environment Protection Act establishes the framework for studying planning and implementing long term requirements of environmental safety and laying down a system of speedy and adequate response to situations threatening the environment.

It is an umbrella legislation designed to provide a framework for the coordination of central and state authorities established under the water act 1974 and the Air Act, the term environment is understood in a very wide term under section 2 A of the Environment Act. It includes water, air, and land as well as the interrelationship which exists between air water and land and the human beings and other living creatures plants, microorganisms, and property.

Under the Environment Act, the central government is empowered to take measures necessary to protect and improve the quality of environment by setting standards for emissions and discharges of pollution in the atmosphere by any person carrying on an industry or activity, regulating the location of industries management of hazardous waste the protection of public health and welfare from time to time.

The central government issues notification under the environment act for the protection of ecologically sensitive areas or issues guidelines for matters under the environment act. In case of any non-compliance or contravention of the environment act or of the rules or directions under the said act, the violator will be punishable with imprisonment up to five years or with fine up to 1 lakh or with both.

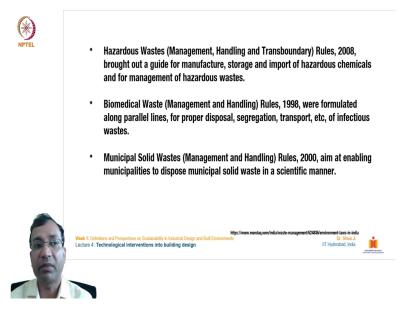
In case of continuation of such violation an additional fine up to like 250,000 every day during which such failure or contravention continues after the conviction of first such a failure or contravention will be levied, further if the violation continues beyond a period of one year after the date of conviction. The offender shall be punishable with imprisonment for a term which may extend to seven years.

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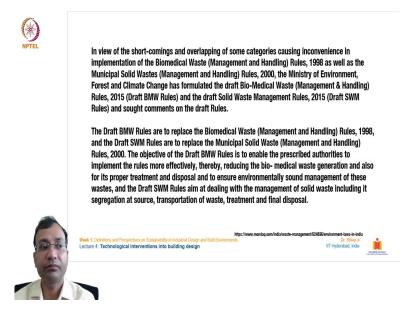
Hazardous waste management regulations. Hazardous waste means any waste which by the reason of any of its like physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other wastes or substances.

There are several legislations that directly or indirectly deal with hazardous waste management. The relevant legislations are the Factories Act 1948, the Public Liability Insurance Act 1991, the National Environment Tribunal Act 1995 and rules and notification under the Environmental Act. Some of the rules dealing in hazardous waste management are discussed like are in the next slides.



Hazardous Waste Management handling and trans boundary rules 2008 brought out a guide for manufacture, storage and import of hazardous chemicals and for management of hazardous waste. biomedical waste management and handling rules 1988 were formulated along parallel lines for proper disposal, segregation, transport etc of infectious wastes. Municipal solid waste management and handling rules 2000 aims at enabling municipalities to dispose municipal solid waste in a scientific manner.

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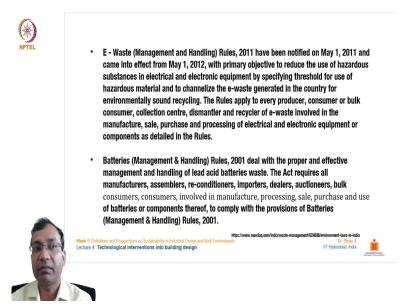


In view of the shortcomings and overlapping of some categories causing inconvenience in implementing of the biomedical waste management and handling rules 1998 as well as the municipal solid waste management and handling rules 2000. The Ministry of Environment

forests and climate change has formulated the draft biomedical waste management and handling rules 2015 and the draft Solid Waste Management rules 2015 and sought comments on the draft rules.

The Draft BMW rules are to replace the biomedical waste rules 1998 and the draft BSWM rules are to replace the municipal solid waste rules 2000. The objective of the draft BMW rules is to enable the prescribed authorities to implement the rules more effectively, thereby reducing the biomedical waste generation and also for its proper treatment and disposal and to ensure environmentally sound management of these wastes and the draft is SWM rules aim at dealing with the management of solid waste including it segregation at source, transportation of waste treatment and final disposal.

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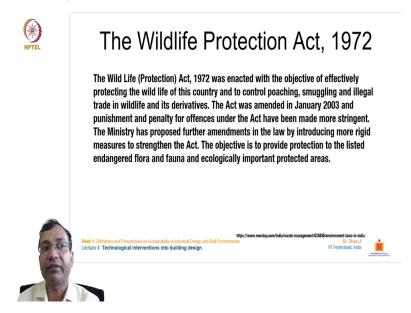


E waste management and handling rules 2011 have been notified on May 1, 2011 and came into effect on May 1 2012, with primary objective to reduce the use of hazardous substances in electronic equipment by specifying threshold for use of hazardous material and to channelize the E waste generated in the country for environmentally sound recycling. The rules apply to every producer consumer or bulk consumer, collection centre dismantler and recycler of each waste involved in the manufacture sale, purchase and processing of electrical, an electronic equipment or components as described in the rules.

Batteries management and handling those 2001, deal with the proper and effective management and handling of lead acid batteries based. The Act requires all manufacturers, assemblers, re-conditioners, importers, dealers, actioners, bulk consumers, consumers

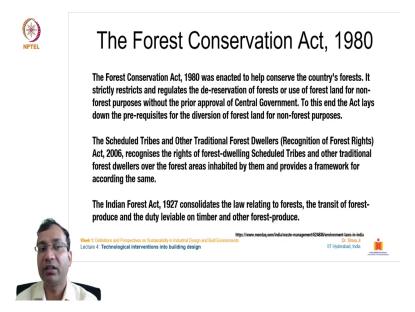
involved in manufacture, processing, sale purchase and use of batteries or components thereof to comply with the provisions of batteries management and handling rules 2001.

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Wildlife Protection Act 1972. The Wildlife Protection Act 1972 was enacted with the objective of effectively protecting the wildlife of this country to control poaching, smuggling and illegal trade in wildlife and its derivatives. The Act was amended in January 2003 and punishment and penalty for offenses under the Act have been made more stringent. The ministry has proposed further amendments in the law by introducing more rigid measures to strengthen the Act. The objective is to provide protection to the listed endangered flora and fauna and ecologically important protected areas.

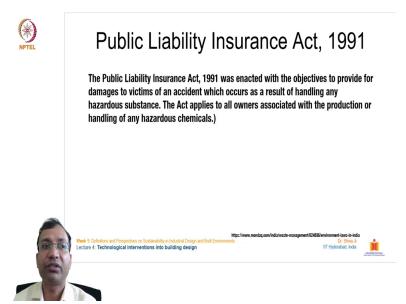
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Forest Conservation Act 1980. Forest Conservation Act 1980 was enacted to help conserve the country's forest. It strictly restricts and regulates the de-reservation or forest or use of forest land for non-forest purposes without the prior approval of central government. To this end, the act lays down the prerequisites for the diversion of forest land for non-forest purposes.

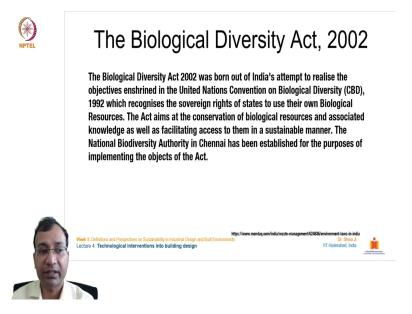
The schedule tribes and other traditional forest dwellers recognized, recognition of forest Rights Act 2006 recognizes the rights of forest dwelling scheduled tribes and other traditional forest dwellers or the forest area inhabited by them and provides a framework for according this thing. Then in Forest Act 1927 consolidates the law, relating to forest, the transit of forest produce and duty leviable on timber other forest produce.

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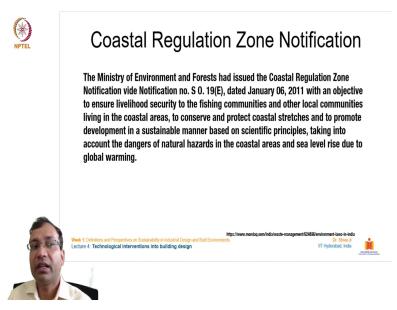
Public Liability Insurance Act 1991. The Public Liability Insurance Act 1991 was enacted with the objective to provide for damages to victims of an accident, which occurs as a result of handling any hazardous substance. The Act applies to all owners associated with the production or handling of any hazardous chemicals.

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The Biological Diversity Act 2002, the biological diversity act 2002 was born out of India's attempt to realize the objectives and shine in the United Nations Convention on Biological Diversity 1992 which recognizes the sovereign rights of states to use their own biological resources. The Act aims at the conservation of biological resources and associated knowledge as well as facilitating access to them in a sustainable manner. The National biodiversity authority in Chennai has been established for the purposes of implementing the objects of the Act.

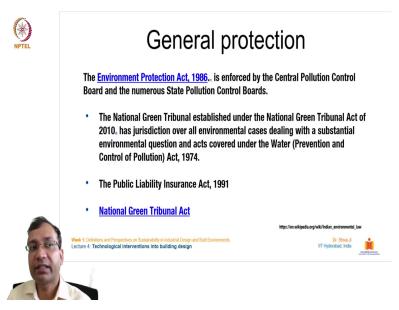
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Coastal regulation zone notification. The Ministry of Environment and forest had issued the coastal regulation zone notification, vide notification number 19 E. dated January 6th 2011

with an objective to ensure livelihood security to the fishing communities and other local communities living in the coastal areas, to conserve and protect coastal stretches and to promote development in a sustainable manner based on scientific principles, taking into account the dangers of natural hazards in the coastal areas and sea level rise due to global warming.

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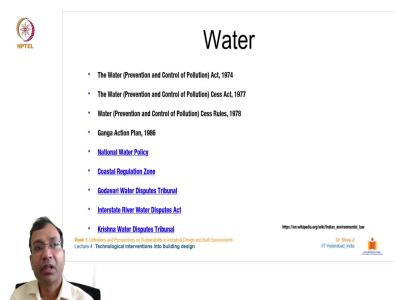
For the general protection, the Environment Protection Act 1986 is enforced by the central Pollution Control Board and the numerous state control pollution control boards. The National green tribunal established under the National Green Tribunal act of 2010 has jurisdiction over all environmental cases dealing with the substantial environmental question and acts covered under the water prevention and control of Pollution Act 1974. The public Liability Insurance Act 1981 and National Green Tribunal Act.

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For the air pollution we have the Air Prevention and Control Pollution Act 1981, we have Air Prevention and control of pollution union territories rules 1983 and we have Air Prevention and Control of Pollution Act.

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For the water we have these many actually acts and rules, the water prevention and control of Pollution Act 1974. Then we have the water prevention and control operation Cess Act 1977. The water prevention and control of pollution sets rules 1978, Ganga action plans in 1996, National Water policy coastal regulation zone, Godavari water disputes tribunal, interstate water disputes act, Krishna water disputes Tribunal.

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| Indian Forest Act, 1927 Wild life protection act, 1972 Forest (Conservation) Act, 1980 Kational Forest Policy, 1988 M. C. Mehta v. Kamai Kath (1997) 1 SCC 388 Biological Diversity Act, 2002 Protection of Plant Varieties and Farmers' Rights Act, 2001 Wild Life Protection Act, 1972, which does not fail within the jurisdiction of the National Green Tribunal., Appeals can be filed in Supreme Court of India. Prevention of Cruetly to Animals Act 1960 CAMPA bill | Forests and wildlife | | | | |
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| Forest (Conservation) Act, 1980 National Forest Policy, 1988 M. C. Mehta v. Kemal Neth (1997) 1 SOC 388 Biological Diversity Act, 2002 Protection of Plant Varieties and Farmers' Rights Act, 2001 Wild Life Protection Act, 1972, which does not fail within the jurisdiction of the National Green Tribunal Appeals can be filed in Supreme Court of India. Prevention of Cruelty to Animals Act 1960 | | Indian Forest Act, 1927 | | | |
| National Forest Policy, 1988 <u>M. C. Mehla v. Kamal Nath</u> (1997) 1 SCC 388 <u>Biological Diversity Act, 2002</u> <u>Protection of Plant Varieties and Farmers' Rights Act, 2001</u> <u>Wild Life Protection Act, 1972</u> , which does not fall within the jurisdiction of the National Green Tribunal Appeals can be filed in Supreme Court of India Prevention of Cruelty to Animals Act 1960 | | Wild life protection act, 1972 | | | |
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| Supreme Court of India. Prevention of Cruelly to Animals Act 1960 | | Protection of Plant Varieties and Farmers' Rights Act, 2001 | | | |
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| CAMPA bill https://ex.wikipedia.org/wiki/india_environr | | Prevention of Cruelty to Animals Act 1960 | | | |
| | https://en.wikipedia.org/wiki/Indian_environmental_law | · CAMPA bill | | | |
| | Dr. Shiva Ji IIT Hyderabad, India | | 00 | | |
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For the forest and wildlife, we have Indian Forest Act 1927, Indian Wildlife Protection Act 1972, Forest Conservation Act 1980, National Forest policy 1988, we have MC Mehta and V Kamal Nath 1997, 1 SCC 388, Biological Diversity Act 2002, Protection of plant varieties and farmers Rights Act 2001. Wildlife production in 1972, which does not fall within the jurisdiction of the national green tribunal appeals can be filled in the Supreme Court of India. Prevention of Cruelty to Animals Act 1960 and CAMPA bill.

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| NPTEL | Waste management | | | | | |
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| | Recycled Plastics, Plastics Manufacture and Usage Rules, 1999 | | | | | |
| | ents on Hazardous Wastes | | | | | |
| | Hazardous Wastes (Management and Handling) Amendment Rules, 2003. Construction and Demolition Waste Management Rules, 2016 | | | | | |
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| | | https://en.wikipedia.org/wiki/Indian_environmental_law | | | | |
| 10-6- | Week 1: Definitions and Perspectives on Sustainability in Industrial Design and Bult Environments Lecture 4: Technological interventions into building design | Dr. Shiva J IIT Hyderabad, India | | | | |
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For the waste management we have batteries management and handling rules 2001, recycled plastics plastic manufacturer and uses rules 1999, Basel convention on control of trans boundary movements of hazardous waste and the disposal 1989 and its protocols, hazardous

waste management and handling amendment rules 2003, then we have lastly construction and demolition waste management rules 2016. So, these are actually laws and acts and the set of rules you saw regarding the control of the pollution and the saving our lack of natural resources and elements.

So, we must actually remember and we must actually plan our designs and planning schemes. Addressing actually these rules and regulations, we must actually comply to these sets of rules and regulations and laws. These are framed for the wider actually purposes to conserve actually wildlife, our natural resources, our natural elements, etc, in turn actually promoting the sustainable growth and development. With this, we have come to the end of this lecture. Thank you, everyone.