

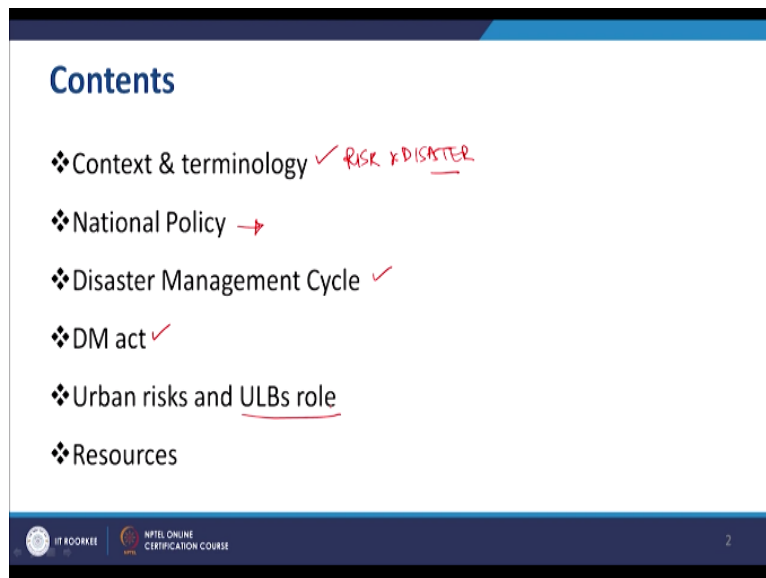
Urban Governance and Development Management (UGDM)
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Lecture - 35
Urban Risk and Disaster Management

Welcome to lecture 35. In this lecture, we will discuss various aspects of urban risk and disaster management. You know that urban risk and disaster is not a new term rather every year in our urban areas, it is recurring events that urban flooding and due to some other events there are deaths, there are losses of the property and so on and because the urban areas are much more congested than the rural areas therefore the loss and the deaths are more in urban areas due to various kinds of risks and the disaster.

Therefore, it is very important to discuss and to know about the various types of risk and the types of disaster in the urban areas and how to mitigate those.

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So today our topics of discussion will be the context and some basic terminology of the risk and disaster management. Then, the overview of the national policy on the disaster management and also the disaster management cycle and then will also discuss disaster management act, salient provisions. Then, what are the risks and the urban local bodies role in the disaster management and some resources which you can utilize.

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Why disaster and risk management ?

So why disaster and the risk management because as I have told just now that in urban areas there are frequent events and frequent disasters in last few decades. For example, there are chemical disasters, we all know about the Bhopal incident of the Bhopal gas tragedy and apart from the Bhopal also, there are incidents like the urban flooding, there are incidents like Tsunami, there are incidents like collapse of the building, there are incidents like terrorism.

So all these events and all these activities which happens in urban areas and makes maximum amount of deaths but on the contrary the urban local bodies and the development authorities or the urban government, they are not equipped with the appropriate knowledge and skill. Therefore, they cannot address and they cannot tackle the problem properly that is why we need to study the urban risk and disaster management.

So before I come to the overall policy at another essential information let me discuss some basic terminology which will be essential to understand.

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Terminology

- Risk *→ Estimated loss due to some possible events*
- Disaster (natural and manmade) *(EVENTS)*
- Hazard *Element creates the loss*
- Vulnerability *Condition of individual community or city susceptible to some hazards*
- Preparedness *Condition which fights/addresses disasters*
- Recovery *Process of getting normal normally after disaster*
- Prevention *Action to prevent disaster*
- Mitigation *Process of Eliminating or reducing disaster effects*
- Response *Immediate Actions*
- Retrofitting *fitting or construction retrospective to structure and structure*
- Rehabilitation

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First, I start with the risk. What is the risk? Risk is basically we define risk as an estimated loss due to some possible events. For example, some of us we pay money for the life insurance, so it is basically we pay money on the basis of the assessed risk of our life or assessed risk of our disease or something like that. Similarly, for urban infrastructure and urban situation, the risk can also be assessed and risk can also be estimated.

For example, if there is a flood or there is a collapse of a bridge, what kind of risk is involved in terms of the death of the human being, loss of the property and that can be assessed. Those kind risks are there. There are several types of risk associated in the urban areas, so this is the basic understanding of the risk. Next, the disaster, disaster is basically some events major events which can be natural and manmade both.

But this event is such that it makes maximum loss and maximum casualty of the human being and the other animals that is the disaster. For example, it can be earthquake, it can be cyclone, it can be landslide, it can be chemical disaster or any other manmade disasters. So hazard, hazard is basically some element in the disaster which creates the loss. So it can be hazard due to the flooding situation.

Hazard could be due to some manmade situation. So hazard is basically the danger situation of any element or any event. Next is the basically vulnerability, vulnerability is basically the condition of an individual all community or a city which is susceptible to some hazards. For example, there is a building which is not constructed using the earthquake proof technology so that building becomes vulnerable to the earthquake hazard right.

Similarly, suppose a building is not properly constructed and it is constructed on a flood prone zone within the flood prone zone, so therefore that building becomes vulnerable to the flood hazard. Therefore, the vulnerability is the proneness or likelihoodness of situation like hazard for a particular building or individual or other animal or a community. Next is the preparedness, preparedness is basically the preparedness of a community to tackle the disaster or to manage the disaster.

So basically it is the condition which fights or addresses disasters. So for example, a local body which is having a dedicated cell, technical cell and equipped cell who has the adequate skill to fight with the disasters and urban local bodies which does not have that cell dedicated cell for tackling disaster definitely the preparedness are not same. The urban local bodies which is having the preparedness that is much more prepared than the other urban local bodies we does not have the technical cell.

So then there is recovery. Recovery is any after any disaster or the risk or the life events or the hazard events, there is a period by which people try to recover the losses and people comes to the normal process. So recovery is the process of getting normal usually after the disaster situation. Similarly, there is a term called prevention. Prevention is taking action to prevent disasters.

Now in the preparedness and in prevention, there are similarities and there is a slight difference also. For example, in an earthquake prone zone, you are making your house with earthquake technology, earthquake proof technology. So that is your preparedness and you are trying to prevent the effect of the earthquake but actually you cannot stop the earthquake but you can create your building in such way so that it can resist the causes of the earthquake.

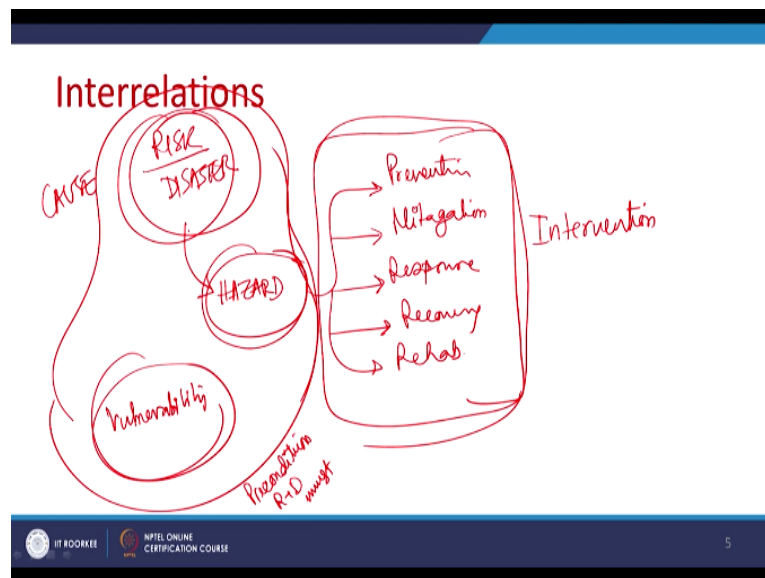
Therefore, the prevention is some action and your preparedness is the end product of your action. Therefore, preparedness is the final outcome of the prevention activity. Then mitigation, mitigation is the process of eliminating or reducing the disaster effects. So mitigation involves the preparedness, the prevention, recovery everything. Then, there is a term called response.

Response is the immediate response after the disaster. So response is the immediate actions after the disaster. Then, there is a term called retrofitting, retrofitting is the fitting or construction done retrospective to strengthen any structure right. For example, there are various buildings which is not constructed using earthquake proof technology.

But even in a retrospective effect, later on also some kind of retrofitting actions can be taken to strengthen the strength of the building so that it can at least withstand some amount of earthquake effect and it can be safe for the citizens or for the users. Then, there is rehabilitation. After any disaster happens, after the disaster the affected people or affected community can be rehabilitated to some areas.

They can be given additional shelter, additional infrastructure, basic services that is called rehabilitation. So I hope that you could see the basic terminologies which I discussed. These are much related in disaster events starting from the prevention to the recovery and the rehabilitation.

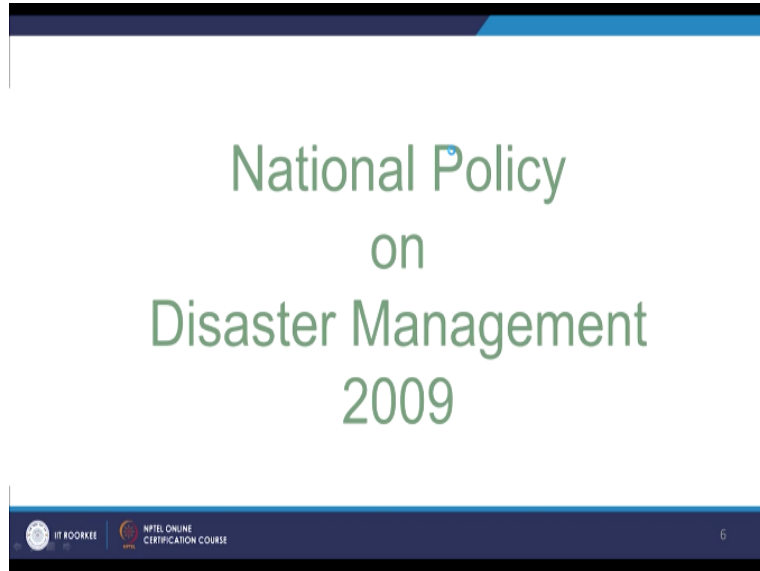
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Now let us see that how it is interrelated. Basically, the risk and disaster is the cause and with that it is making hazard and for the hazard the actions are like prevention, mitigation, response, recovery and rehab. So these are basically our intervention and this intervention is dependent to vulnerability. So in one side, there is hazard, another side there is risk and then vulnerability and effect of these 3 makes our intervention.

So this is the basically the precondition for risk and disaster management. These 3 factors risk, hazard and vulnerability and intervention what we do is the prevention, mitigation, response, recovery and rehabilitation. This is the interrelation between the terminologies.

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Next, we see the salient provisions in the national policy on the disaster management which came in 2009.

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So it says that it gives the institutional and legal framework in terms of the NDMA, National Disaster Management Authority and the other institutes at the state level, district level; financial arrangement, how the financial arrangement will be there to tackle the disasters and the risk; disaster prevention, mitigation and preparedness; techno-legal regime, how it can be

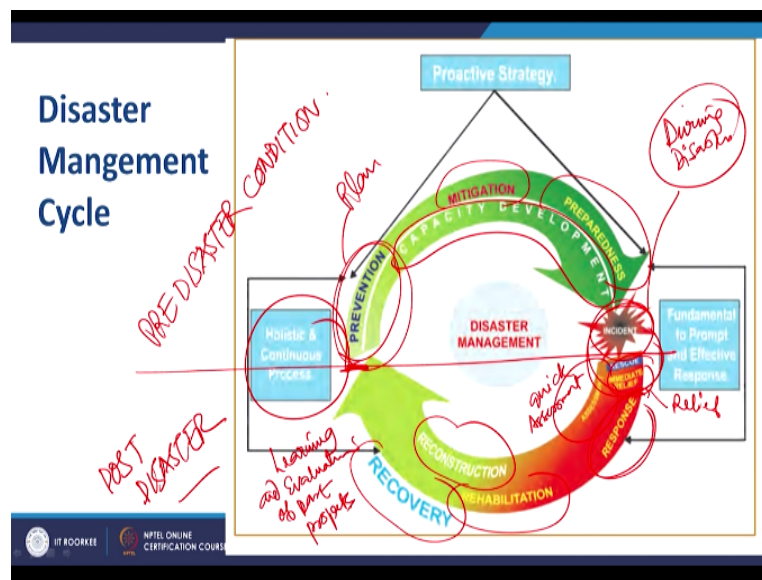
done; then response, what kind of response could be taken for the disaster; then relief and rehabilitation.

Then, reconstruction and recovery, capacity building, knowledge management and research and development. Now here I would like to mention one point that in the prevention and mitigation, there are two terms which is very common, one time is called structural mitigation, another term is called non-structural mitigation.

The structural mitigations are basically the interventions which is done for strengthening your building or infrastructure basically in the physical matter which is giving you some kind of safety and security in terms of against the natural disaster whereas the nonstructural mitigations are basically giving rehabilitation, counseling, mentoring, training, capacity building, etc which is not exactly the strengthening of the structure as such.

But strengthening of the overall ecosystem so that the people is much more enable now and so that they can construct much more building infrastructure and can be a better prepared against the disaster okay.

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Now based on the policy document this is the disaster management cycle. Now this disaster management cycle starts with the prevention. I am sorry that print quality is not that good. Prevention, then we do the capacity enhancement, mitigation and preparedness and then there could be disaster incidents and then after the incidents immediately will come with the relief and response.

Then, quick assessment of the laws and therefore we can go to the reconstruction and rehabilitation and the whole process is called as the recovery. So therefore this is the predisaster condition and this is post disaster condition and in this situation we can make a holistic plan here in this point because in this point we are trying to make a plan for the prevention and at the same time after a whole cycle we can get some amount of learning here.

Learning and evaluation of past project right, so this cycle should not be forgotten, this cycle says that predisaster, post disaster and some action during the disaster. So these are some action which is taken during disaster as well. So however, the predisaster and the post disaster actions are much more and it takes longer time to be prepared well to withstand a disaster and also post disaster activities also take longer time.

For example, in the Bhuj earthquake which happened in post 2000, it is the reconstruction and the rehabilitation is still going on, it takes even more than a decade. So therefore predisaster, post disaster and during disaster conditions and interventions are very important to know.

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National Disaster Management Act 2005

- ❖ Creation of NDMA, SDMA, DDMA → Central State Dist
- ❖ Measure by government — interventions
- ❖ Local authorities — R/D + job
- ❖ NIDM and NDRF — National Instt of Disaster Mngt, National D. Responson Fund
- ❖ Finance and accounts
- ❖ Offences and penalty

Handwritten notes: R/D/ Capabilty build, Action

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Then, I tell you some of the provisions of the National Disaster Management Act which is the mother act which came 2005 and this act says that creation of National Disaster Management Authority, State Disaster Management Authority and District Disaster Management Authority therefore you can understand that central, state and district every level there is a new organization which is created as a apex organization to fight with the disaster.

Then, the provision of the measures by the government basically these are interventions, then the role and job role and job of the local authorities, not only that there will be a kind of institute called National Institute of Disaster Management and NDRF, the role of NDRF will be national, it is basically disaster response. I think it is response fund or something, so the job of the NDRF team will be to take action and the NIDM is to take action on the research and development and capacity building.

Then, the provision of the finance and the accounts, offences and penalty both are also provided under this National Disaster Management Act 2005. Under this act, the authorities are also empowered to create their own rules and regulations so that they can take their action at that every respective level.

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NDM Act

CHAPTER VI
LOCAL AUTHORITIES

41. Functions of the local authority.—(1) Subject to the directions of the District Authority, a local authority shall—

- (a) ensure that its officers and employees are trained for disaster management;
- (b) ensure that resources relating to disaster management are so maintained as to be readily available for use in the event of any threatening disaster situation or disaster;
- (c) ensure all construction projects under it or within its jurisdiction conform to the standards and specifications laid down for prevention of disasters and mitigation by the National Authority, State Authority and the District Authority;
- (d) carry out relief, rehabilitation and reconstruction activities in the affected area in accordance with the State Plan and the District Plan.

(2) The local authority may take such other measures as may be necessary for the disaster management.

Then, these are the, I am showing the under this act the job of the local authorities, it says that local authorities basically subject to the directions of the district authority. A local authority shall ensure that its officers and employees are trained for disaster management, ensure that resources relating to disaster management are so maintained as to be readily available. Therefore, it is basically during the relief and the response time it should be readily available and for use in the event of any threatening disaster situation.

Ensure all construction projects under it or within its jurisdiction conform to the standards and specification laid down and for prevention of the disasters and mitigation by National Authority, State Authority or District Authority. So basically this is the compliance with the

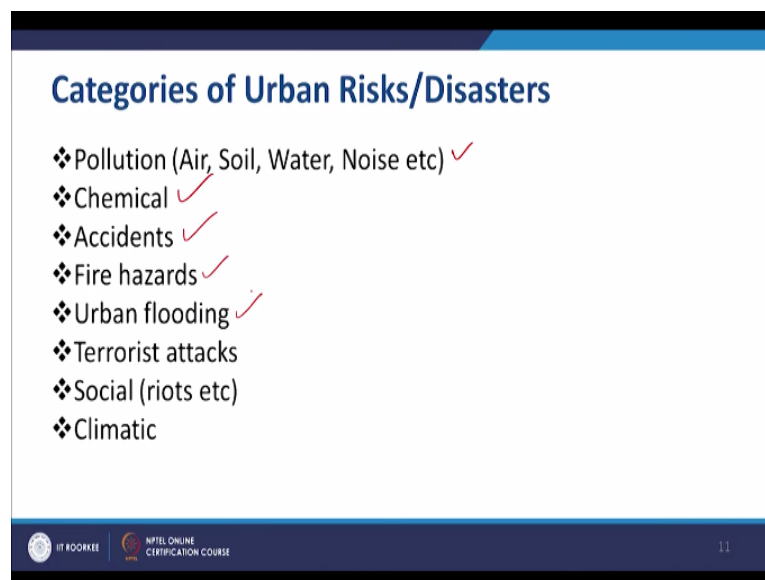
norms standards and the organization. The b is basically to ensure the relief and a is to enhance the skill and preparedness.

Then, d is the basically carry out relief, rehabilitation and reconstruction activities in the affected area in accordance with the state plan and the district plan. Under this Disaster Management Act, every state government at state level, district level they have to make a disaster management plan.

So how the disaster management plan at the district level is integrating the disaster management plan and action at the local level that also has to be taken up by the local authority. Therefore, it is the planning function which is mandated under the Disaster Management Act. Then, local authority may take such other measures which is notified time to time or which is felt required time to time during any particular disaster situation.

So these are the broad recommendation under the Disaster Management Act at the local level. Therefore, it is the task of the urban local government or the development authority to ensure this kind of jobs and the roles to play during the disaster or before disaster.

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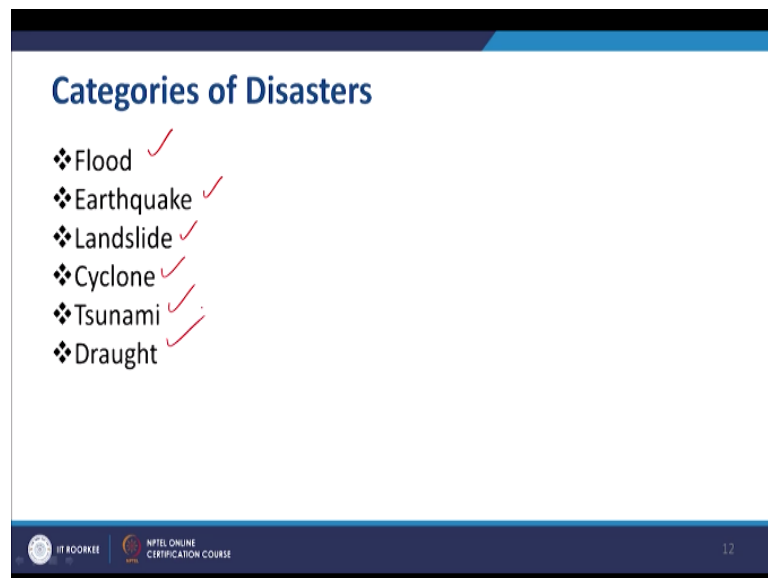
Then, let us see the categories of urban risk. You know that the first category will be basically the pollution. It can be air, soil, water or noise; the chemical disasters or chemical events; accidents, accidents could be road accidents, accidents could be the collapse of the building, accident could be collapse of the bridge. Recently, one bridge collapsed in city of Calcutta. So there are various accidents like that.

Then, fire hazards is common in urban areas. Urban flooding in last few years, it has been a recurring problem in the cities like Chennai, recently in Mumbai and various cities are facing this urban flooding situation. Terrorist attack, we know the incidents in the city of Mumbai. This is a very dangerous situation which we have felt and experienced.

Then, social conditions like riots or various kinds of social activities, strikes, random strikes and demonstration, delegation which happens in the public place or in the road condition that also create sometimes the disaster and the risky situation. Climatic effect, for example urban heat island or other climatic effect with climate change all together is a risk of the urban situation.

So apart from all these National Policy Act and rules and regulations, there is a climate change mission under which Government of India also have taken several action so that the cities are better prepared to take the action under the climate change paradigm.

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Then, apart from the risk, there are various categories of disasters like flood, now the urban flooding is caused due to manmade situations like the faulty planning or the worse development control regulation or lack of enforcement, etc whereas the flood which is classically termed as the natural reason or the natural disaster and then earthquake, landslide, cyclone, then Tsunami, then drought and so on.

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Role of ULBs

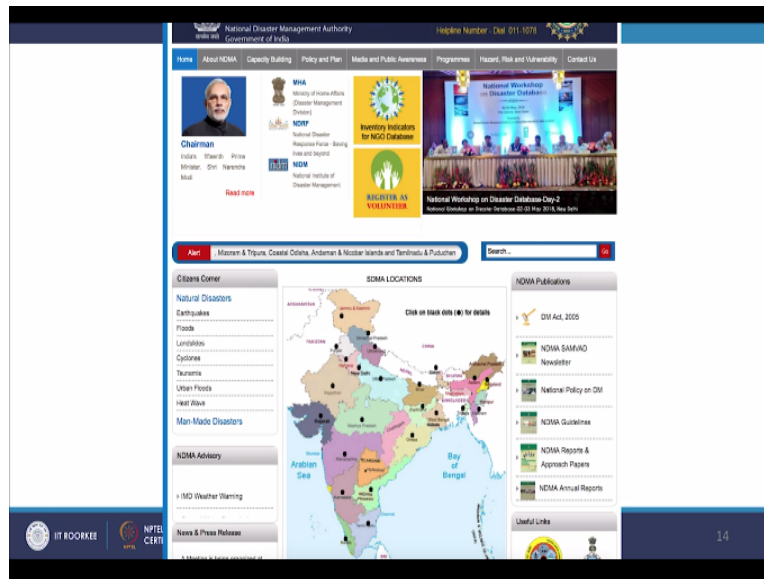
- Identify potential risks and hazards
- Make Plan & Action plan
- Mobilise funding
- Create & enhance capacity
- Take Actions during + post disasters.
- Evaluate and improve planning + preparedness.

So these are the natural disasters which also affect the urban areas and most importantly the risky situations or the urban risk which I told earlier those are affecting in the urban areas as well. Now role of urban local bodies will be to identify the potential risk and hazards, then make plan and action plan. Then, mobilize, create and enhance capacity. In coming future, I will be happy if I see the bigger urban corporations, they are creating dedicated cell to fight with the disasters and the urban risky situation.

And then take action, take actions during or post disasters and also evaluate and improve planning and preparedness both right. So these are the broad role of the urban local bodies which can be taken at your place and please do not forget to integrate the projects or the actions with other regular development plans or the regular development projects which we have been discussing otherwise in the other lectures.

So therefore disaster management is not a separate subject or it is not an isolated subject at all. So disaster management and the risk management has to be considered during every stage of development, every stage of the planning but definitely if your city has some amount of very typical risk like manmade or the natural disasters, urban flooding or any typical situation that has to be given very special care and very special planning and development interventions. Therefore, these are the roles you should take.

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Now I show some of the resources, page I have taken from the Natural Disaster Management Authority. The front page of this website will give you information about the ongoing activities under the Government of India at the state level, at the district level for every state so therefore you can visit this website and have a look.

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Second, I tell you that this is the website from the National Institute of Disaster Management from there the Apex Institute which is giving the training and capacity building for the urban local bodies and also to the other agencies who is working on the disaster management. Therefore, if you have any training need or a particular need for capacity building, you can contact with them or you can attend some specialized training course under disaster management.

So NIDM and NDMA these two are basically Apex Organization which is very much pivotal in their role in disaster management in our country, so you should definitely visit their website. So with this I conclude today's lecture. Today, we discussed the various aspects of the urban risk and disaster management. We have started the discussion with the various terminologies like risk, disaster, hazard, vulnerability.

Then, preparedness, mitigation, management, response, recovery, rehabilitation and retrofitting, etc and then we have seen the provisions in the National Policy of Disaster Management 2009 and provisions in the Disaster Management Act 2005. We have seen that under this policy and act both, the creation of the national state and district level organizations are there and it is essential to make disaster management plan at every level in integrated manner.

And there are some task and job indicated for the urban local bodies. Then, we have identified or tried to see that what are the urban risk associated in the urban areas like fire hazards, accidents, terrorism, urban flooding, etc. There could be chemical hazards and also we have seen the natural and the manmade disasters in the urban areas. So your role will be to identify the disasters and the risky situation.

Try to assess the multiple hazard and multiple risk assessment, risk condition and then make a plan for the disaster and risk mitigation based on the guidelines given by the NDMA or the Disaster Management Act and plan accordingly and take action accordingly and if possible gradually in your urban local bodies you can create a dedicated cell which is equipped with the skills and knowledge of the disaster management.

And the response actions which are required during and after disaster management and if you want to take any particular project post disaster or before disaster in integration with the other centrally sponsored scheme do that in an integrated fashion and try to mobilize funds from all the centrally sponsored schemes. So with this I just thank you very much for attending this lecture.

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Next LECTURE

36. Managing Urban Environment-1

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And next lecture, we will be discussing on the managing urban environment and will see some very crucial issues in the urban environment and what is the skills and the competencies required and what are the strategies taken at the urban level to tackle all this environmental problem. So thank you very much.