Water Economics and Governance
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Lecture – 53
Water Governance in India :
Environmental Protection and Water Reforms

Hello everyone. We are into the last session of this week. And we will be talking about the governance in the perspective of environmental protection, and some of the reforms and challenges in the water governance in India in this session.

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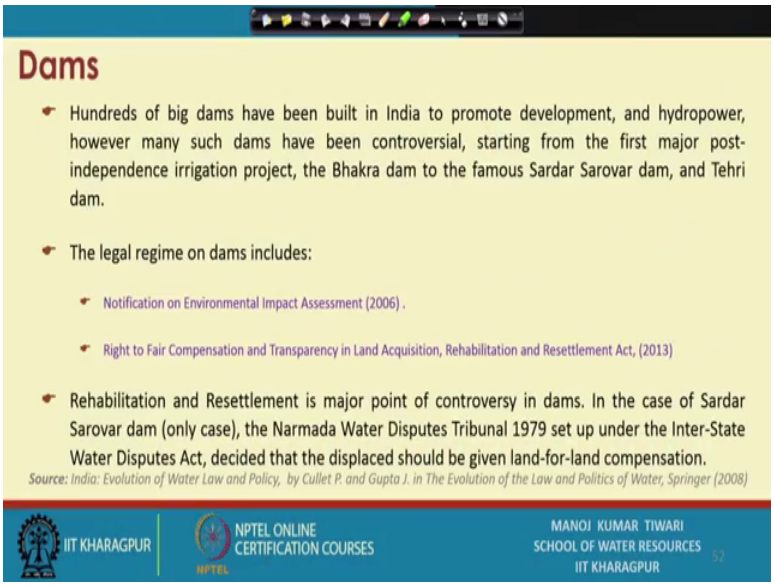

To begin with the dams are a very important component important water structures, and India has 100 of big dams have been built to promote development and for hydropower activities; however, many of such dams have been controversial. Starting from the major post-independence irrigation project, dam which was made the Bhakra dam to the various famous issues related to the like Sardar Sarovar dam at Narmada in MP and even the Tehri dam. So, the dams in the Assam so, we have sort of our most of the dam products projects particularly the large dam projects somehow undergo some sort of controversies.

The legal regime on dams includes the latest legal regimes. There has been sort of development across this, but there the available legal regimes at present includes the

notification on environmental impact assessment of 2006. So, there has been earlier versions which has been discarded when this 2006 notification was accepted, and we have right to fair compensation and transparency in land acquisition rehabilitation and resettlement act of 2013. So, further there has been basically attempts for the amendment of the act this particular act rehabilitation and resettlement act by the current government; however, it could not take shape as as it is. The rehabilitation and resettlement is a major point of controversy in the water projects large water projects. It is true for the dams it is true for various other water projects as well.

In case of dam when you go for a creating a large impoundment, you need to basically have you need to acquire or the agency need to acquire a large area land. Now the villages in and around has to be moved. So, there comes the issue of rehabilitation and resettlement, and that is one of the very important reasons for these creating lot of controversies across these dams. There has been a unique case particularly in the case of Sardar Sarovar dam which is in fact, the only case where Narmada water disputes tribunal was set up in 1979 to under the interstate water dispute act and this was to basically look for the rehabilitation and resettlement for the Sardar Sarovar dam that way. This decided and sort of that displaced people should be given land for land compensation. So, if government is acquiring the land, it should give the land as in a compensation to these people.

However, the government was willing to give cash for land. So, they were willing to procure land and giving them the cash, but the tribunal suggested tribunal in fact, gave it is decision that those who are getting displaced should be given land as a compensation for the land which is being acquired and not the cash. If we see the environmental issues with water resources projects particularly with the large water resources project. So, the environmental impact of these water resources project is one of the most contentious environmental issues of our generation over times. The water resources project fetch several beneficial impacts on the socio-economic status of the country, we cannot avoid water resources projects ok, we like for example, we have been discussing the river interlinking project ok.

So, it has a lot of benefits. We often see the floods in one area the drought in other area. So, if we are not able to manage it properly the condition will prevail like this there has to be something done in order to control the flood in order to control the draught even if

let us say forget about river interlinking, even if you want to control a flood system you will have to have give at least the safe passage or safe storage of the water.

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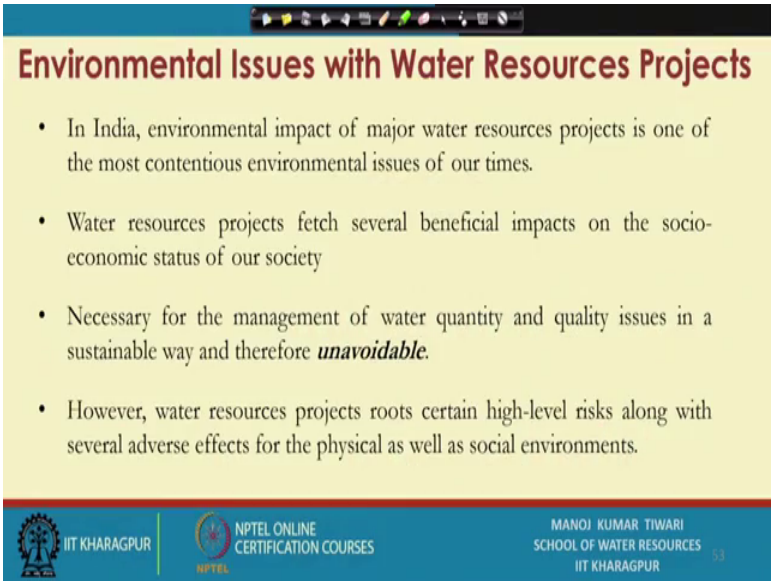

Further we have projects related to hydropower which is a renewable energy there has been issues of reducing carbon footprints. Now with thermal power plants which have a lot of carbon footprints it becomes very difficult. So, you have to look for the alternate sources of energy with low carbon footprint and hydro power gives an attractive option, where the power can be generated without fossil fuels and thus leading to the less carbon footprint. So, these calls for the some of the dams and this kind of things further we have irrigation project.

So, we have to make canals in order to supply water we have a waterways projects. So, this kind of then water supply sanitation crop projects the storm water management projects. So, these water projects. In fact, are necessary unavoidable, these are necessary for the management of water quality and quantity issues, and ensure a sustainable way. Therefore, these some of these projects or most of these projects are in fact, unavoidable. Only thing is we have to look a way, in which it can be basically accomplished in a most sustainable fashion.

However, at the same time, water resources projects routes certain high-level risks. Along with this several adverse effect for the physical as well as social environment. Now if you are creating a dam, acquiring lot of land people being displaced, they are

leaving their livelihood whatever they are set up their ancestor's place and they are forced to move to a new place even if they are given compensation for that. But then that has a lot of adverse social impacts.

Similarly, there is a risk involved, if dams and these kinds of structures are being created. So, although the engineering aspects are there, and if proper design and proper engineering is done in place. So, the risk can be reduced or can be minimized; however, still there is a possibility of some risk or at least as it is perceived from the social circles and geo civil societies that there is a large risk with the water resources related project.

Now, at one point they are unavoidable and at second point they have associated risk with this.

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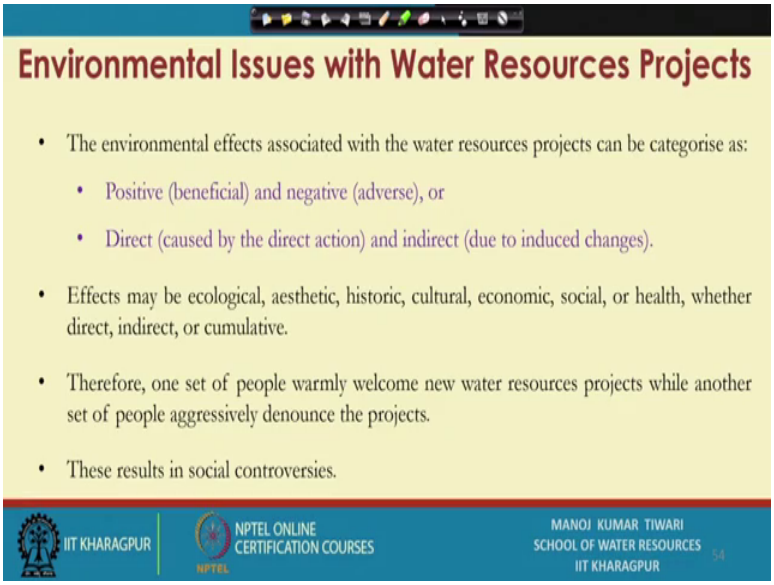

So, we see that the water resources project have both positive and negative impacts. There are positive or beneficial impacts, and there are negative or adverse impact. Further these could be direct impact which caused by the direct action ok. So, most of the beneficial impacts are by the direct action. It could be indirect impact due to induced changes. So, there are some beneficial and some non-beneficial or some negative adverse impacts could be due to the indirect action as well, the rehabilitation and all that could basically lead to the indirect, even indirect effects as well some of the direct effects. While some of the indirect effects now these effects may be ecological aesthetic historic cultural economical social or health impacts ok. It could be direct-indirect or both type of

effect. So, there is like large degree of variation of the kind of impact kind of effect it can create on society, it can create on nature it can create on the environment aesthetics financial environment.

So, because of these complexities, one set of people welcome the new water resources project, who are pro development and that way. While another set of people aggressively oppose or denounce these projects. And these results typically in the social controversies. So, there has been lot of public movements against variety of large water resources projects particularly the dam projects. We have seen the controversies related to the Sardar Sarovar dam Narmada Bachao Andolan, and then there was Tehri dam Chipko movement, there is Assam against dam.

So, those kind of this thing even in the case of river interlinking project, there is a large section who is actually opposing it, the river interlinking project based on all these that what would be the requirement of land from where it is going to come what will happen to the rehabilitation issues and various it can disturb the ecology or the environmental conditions, the nature lot of land requirement would be there. So, all those things are coming in, and that is how the social controversies are created particularly with the large water resources projects.

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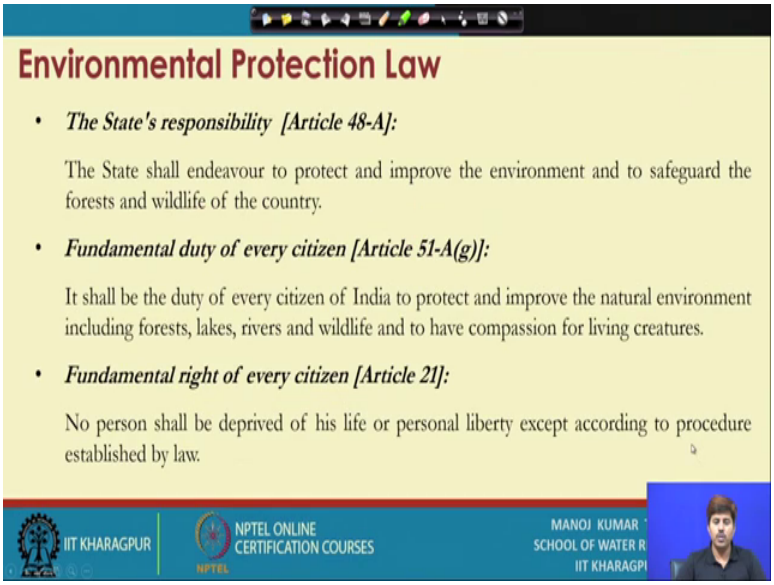

From law prospective the environmental protection for the projects, not only water resources projects, but all projects including water resources, as per the constitutions are

actually under different this thing. So, there is states responsibility as article 48 A. So, states l endeavor protect improve environment and to safeguard the forests and wildlife of the country. So, the environmental protection comes under states purview; that is, as per the constitutions article 48 A. It is the fundamental we earlier we talked about the right to water and sanitation or right to life under which and article 21 and we have fundamental rights for every citizen so, there is a right to life. So, no person shall be deprived of his life or personal liberty except according to procedure established by law.

So, under article 21 we have a right to basically have safe and clean environment for leading our lives; however, there is a fundamental duty of every citizen also which are mentioned in article 51 A g and it shall be duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers, wildlife and to have compassion for living creatures. So, this is a fundamental duty also. We often talk about the rights, but we many times ignores or the basic or the fundamental duties. So, in fact, like when we have a schemes like Swachh Bharat mission or those kind of thing.

So, it is essentially because we have not been doing our fundamental duty properly of keeping the environment clean; so, these issues of the various pollutions and these things have surfaced up had we been more responsible towards the environment towards the nature had been more responsible towards the constitutional fundamental duty, the situations would have been much more pleasant for living.

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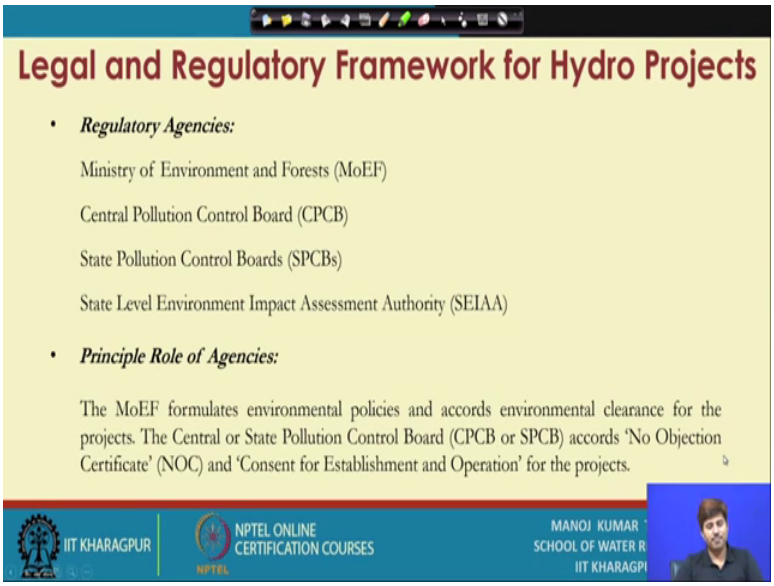

For hydro projects, if we look at the legal and regulatory frameworks. So, we have various regulatory agencies which look at different which look and work at different levels, we have ministry of environment and forests. Now it has ministry of environment and forest for the river and Ganga regeneration. This thing we have central pollution control board, the various state pollution control boards for different states, and we have state level environmental impact assessment authority.

So, all these work look at different levels, the principal role of agencies if we see. So, the ministry formulates the environmental policies, and accords environmental clearance for the projects. The central or state pollution control boards accords no objection certificate or NOC and consent for establishment and operation of the project. So, if any project is being planned, it needs to get the environmental clearance from the ministry. They are and it can get that clearance only after state level environmental impact assessment. Only after the appropriate environmental impact assessment whether it is being done at state level or central level that secondary thing, but there has to be a EIA report particularly and based on that the ministry.

In fact, records the environmental clearance, and when it is done, the for putting up industry or those kind of thing we need NOC from the central or state pollution control boards to see that the event or the activity which is being planned or the industry which is being which is going to be installed the factory which is going to be coming in a place will not create any sort of pollution. So, there has to be a NOC to be obtained from the pollution control boards, and a consent for establishment and operation for the projects.

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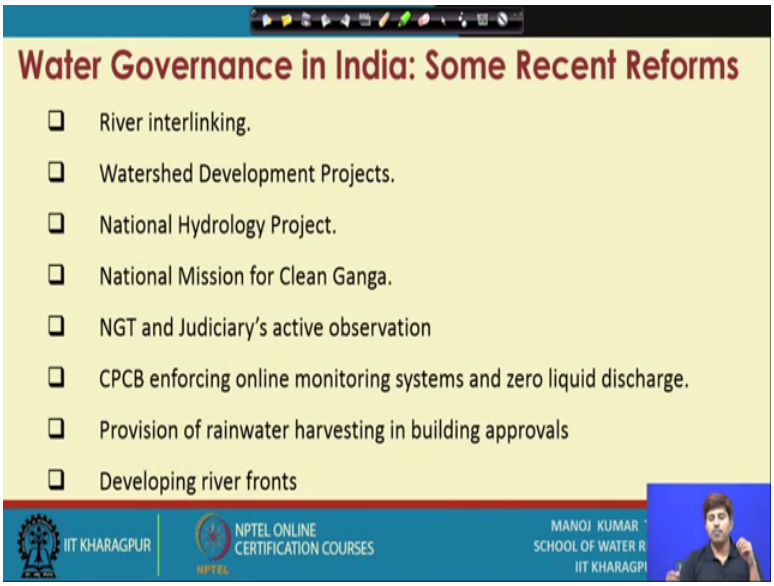

If we talk about some recent reforms in water governance in India; so, we have so many water programs and schemes going through we have river interlinking what we discussed, we have water set development projects from the ministry on a watershed level. So, various for water set for various rivers are being considered under that way we have ongoing national hydrology project, which look for the research and development activities as well as development of the hydrological basins in India for various rivers and it is a national project across all the states. We have national mission for clean Ganga and MCG under which this Namami Ganga and these kind of programs are going on. We have the active observation and involvement from the national green tribunal NGT and judiciary systems.

So, that is like we have very proactive judiciary system, these days and we keep on hearing the big impact decisions from the judiciary. Few other important things CPCB'S enforcing online monitoring system and 0 liquid discharge ZLD. So, that is another important aspect the central pollution control board in fact, towards the water quality management this is going to be one of the landmark step, because we know that many industry release the untreated or partially treated sewage directly into the untreated or partially treated effluent directly into the water directly into the primary rivers, and that is the one of the major regions for the pollution in the rivers.

So, if those kind of practices are to be stopped, it has to be we further we have issues of corruption and these things. So, on a on a human level or administration level or authoritative level, it becomes very difficult to control and regulate these things; however, the automation or this kind of tools if it is adopted, it will reduce the chances of misleading. And it will ensure the transparency in the system. So, in line to that CPCB is actually enforcing online monitoring system to all industries so that their ETP channel or the finally, tp channel should have sensor-based detection of various water quality parameters. And the data would directly transfer to the CPCB server as well.

So, CPCB's will get these data recorded directly from the sensors. No like no possibility of fudging with the data that recording is something else and reporting is something else. Or detecting is something else and this before the data gets to the CPCB it is the change. So, whatever is being recorded is actually being transferred over to these CPCB central server, where it can be observed the pollution control board either central or state pollution control board has an has an observation of what is being done with what industries.

Further it is bringing a policy of 0 liquid discharge which is typically called ZLD; that means, all the industries or all such units should use their affluent in totality and should not discharge anything to the river or surface water bodies. So, it has to be used in the premises of this thing. So, that is the concept of 0 liquid discharge means no water is going to be discharged or no polluted water is going to be discharged. So, if industry is clean it is water anyway. So, they will have preferably a reuse option for whatever purpose within the industry why they will discharge the clean water and then again abstract that water and pay for it.

So, that brings a concept of 0 liquid discharge which is another important reform in the current age. There is a provision of rainwater harvesting in a building approval. So, large for the large building approval some of the state or some of the places it is coming that if your area is larger than this you have to have a rainwater harvesting system. So, again that is a pretty good step in order to ensure that these kinds of at least largest structures could take a step further towards the self-sustainability or their dependency more onto the rainwater and harvest harvested rainwater, and reducing the requirement of the piped water supply in that sense that fashion.

There has been steps towards developing riverfronts. So, variety of various steps are being taken for developing some particular riverfront areas we have Sabapathy riverfront developed in Ahmedabad. And similar steps are being planned for a few other places as well across the different rivers. Well apart from this, there are few other such schemes we did talk about the Pradhan Mantri Krishi Sichan Yojna, which is for the irrigation water we did talk about the earlier the clean Ganga mission Namami Gange, Namami Gange or the similarly for other rivers the Yamuna reform policies are being made and are being drawn. There has been a navigation project water waste navigation projects are also being thought about.

So, all these recent initiatives or reforms are being planned. In the water sector, the Mihir Shah committee which was which basically gave it is report in a couple of years back not even couple of years completely, it gave it is report in 2016.

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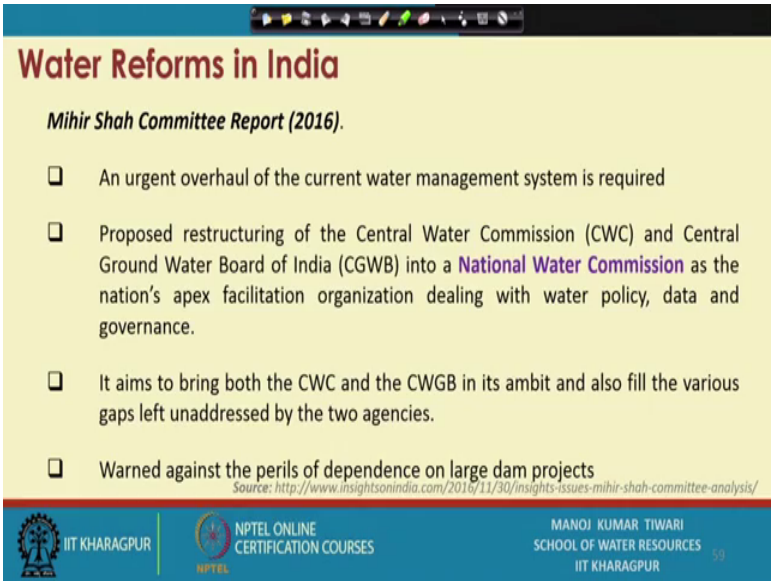

So, they said that there is an urgent overhaul of the current water management system is required. They proposed a major reform in the form of that the central water commission and central groundwater board we have should be abolished, or should be merged and we should have a national water commission kind of agency.

Now, the point is, because if you see the purview of central water commission; so, central water commission generally looks for the water issues related to the related to the irrigation surface water management issues later the water supply irrigation and those

kind of some of the things we were basin management kind of activities, while groundwater board of India essentially looks at the groundwater. So, what is the pumping of groundwater this thing; however, if you keep these in isolation we have a central water commission and we have a central groundwater board, we know that the we have earlier study that there is a complete water cycle water is linked from here to there.

So, in such scenarios, there is a interaction takes place between surface water and groundwater, and if we make independent policies of groundwater without thinking about the surface what are our independent policies for river basin without thinking of the groundwater status, there is issues are supposed to arise. So, the Mihir Shah committee Mihir Shah was actually a former president of the planning commission chairperson of the planning commission. So, his the committee Mihir Shah committee recommended that we should take a integrated approach we should restructure the central water commission and central groundwater board, and rather have one single apex agency on a national scale, and we can probably call that as national water commission. So, we should rather have a national water commission as a nation or India's apex facilitation organization dealing with water policy data and governance.

Also, it should basically have all the purview all the jurisdiction of the CWC and CGWD, along with various gaps which has left unaddressed by these 2 agencies ok. Because like if you see the industrial water supply, that does not come in the purview of a CWC, or it does not come in the purview of CGWB. So, those kinds of things which have basically left as it is, so they should also bring into the umbrella of national water commission, and other that should have a look at it. Further warned against the perils of dependence on large dam projects, so that was the one of the recommendations of the Mihir Shah committee report.

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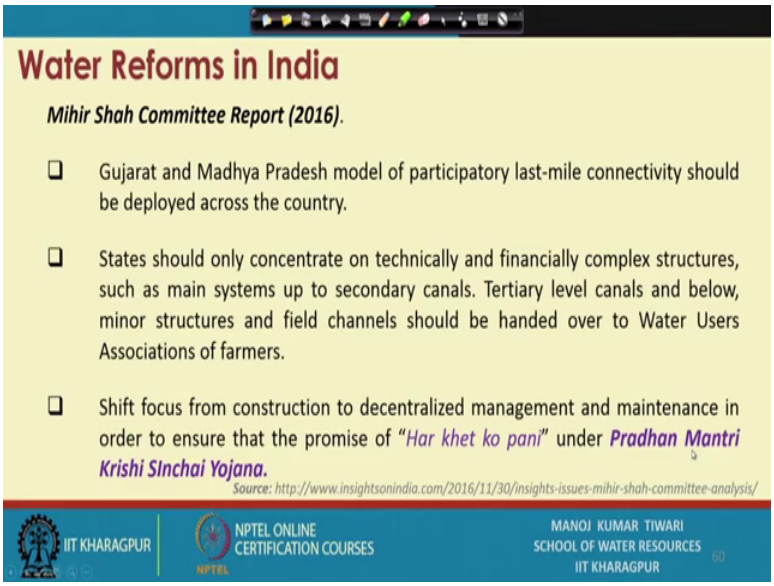

Further it asked for the Gujarat and Madhya Pradesh model of participatory last mile connectivity should be developed across the country. So, that model should basically be expended the model which is being adopted in Gujarat and MP should be expended on a national level it also said that states should concentrate on technically and financially complex structures, such as main systems up to secondary levels. So, the major primary and secondary system should under the purview of states, while tertiary level canals and below minor structures and field channels these kind of stuff the smaller channels should handed over to the to the water user associations of farmers.

So, they should be the one which should be given the responsibility of managing this. It further said that, the focus should shift from construction to the decentralized management and maintenance in order to ensure the promise which has been made under the Pradhan Mantri Krishi Sichan in the form of [FL]. So, those kinds of recommendations were made from the Mihir Shah Committee report which was came in 2016. Now if we look at the water governance issues and prospects in India, we have been discussing about the governance in previous week as well and in this week is specifically about the India. Now we if you just recall and have a holistic summary of the discussion so far; so, we have lot of rules and regulations, lot of policy frameworks. It becomes at time difficult to compile each and everything primarily, because if you try to see.

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So, we have had the central laws and policies which we discussed have very limited role, they are limited to the policy making only and since water is in the purview of the state. So, each state has their own again have their own policy frameworks, their own regulations, their own laws on to the water governance systems.

So, there is a broad agreement, everybody realizes that India's water sector is facing serious challenge in almost every sector, almost everything. There is a problem with the irrigation water supply there is a problem of drinking water supply and coverage and quality as well, there is a problem of industrial supplies, there is a problem of scarcity river basin management, flood, draught, hydropower project. So, in almost every sector in almost every theme there are serious challenges the nation is facing in the water sector.

And our water establishment whether it is a central scale establishment or state scale establishment, they also more or less by and large accept this fact; that there are serious issues and challenges. The problem is that the most analysis talk about specific theme and how to deal with them. So, for example, if I am looking at a irrigation sector so, there will be basically all the research and people will sit and discuss that ok, this is needed to be done here, this is how the irrigation water should be brought in this is how it should be optimized is how it should be done, we should abstract from surface water

groundwater, all those things will basically trigger it about the irrigation sector and look at how to solve how to deal with the problems in the irrigation sector.

However, it becomes difficult because the water as a resource is interlinked. So, whatever policy as and this thing is being adopted in irrigation sector may have a net impact on to the other developmental aspects industrial supply, domestic supply. So, these kind of issues can actually come while looking if we look the problem in a very focused or very restricted manner. There is very less significant body of analysis about the state of water governance in India and our unique challenges and opportunities.

So, India's challenges if you see our context is very unique ok, the program and the policy which has worked in other nations may not work well in India. Forget about other nations, many times we see that the a water policy which is suitable for one of the states, in India may not be very well suitable for the other state in India. Many times, these issues can also occur because we have as difference in the geographies, differences in the cultural practices, differences in the availability of resources so, all those things are there, issues of multiple and exclusive this like in terms of governance if we see.

So, the major issue comes in terms of the multiple and exclusive and non-interacting agencies. So, we have various agencies which have control over or which have the water policy legislation framing under their own purview, even in a state level you see. We have a irrigation department which looks for the irrigation related matter, we have a drinking water supply section we have municipalities we have public health departments.

So, these there are different units different set of these things and they have their own priorities as we were discussing. They make the policies for their own objectives. So, when you do this, in a non-interacting fashion in a exclusive manner that I am just looking at this particular challenge this particular prospect, you are not interacting with other, you are not coordinating with other agencies in a transparent and participatory way. It becomes difficult to come with a integrated policy, and as we discussed earlier that integrated water management is need of the our for holistic management of the water resources.

So, the different tier of industries is fine. We should have decentralized responsibilities and decentralized control, but there has to have the proper coordination between. So, we will we actually need one such system where all these different stakeholders different

agencies can come and interact at a forum, and the policies which are being made let us say for drinking water purpose, what impact it will have in a sanitation sector, what impact it will have in a agricultural sector, what impact it will have in a industrial supply sector, or what kind of impact it will have on an environmental sector should be assessed. Similarly, for agriculture what impact it is going to have on all other sectors. So, when we come with the integrated policies that is how our management things can be improved. And there is a lot of scope as we discussed. Just like Mihir Shah committee if you that also if you see. So, they say that there is a large degree of reforms that in like complete overhauling of the water management is needed in this sector.

Lastly, we should look in our own context India's context is very unique as we were just discussing, it will not match with what is being done in the western world or what is being done in another country. So, we will have to figure out a solution to the issues related to water issues related not related to the see we can adopt a technology from the waste, but the management practices has to be tailor made for our own situations.

So, whatever conditions whatever challenges we have, we should have a solution fit for this situation fit for these contexts, and that can be done by exploring local conditions. And getting knowledge from all the different places the getting the idea of good practices from all different places is fine, but we should come up with a framework of managing or framework of adopting the policies principles and taking the management decisions in a specific localized fashion.

So, with this we conclude the discussions in this week, this week we basically talked about the water governance in India, earlier we discussed the basics of water governance. So, we are ending this week's session here. And in next week we will talk about some of the issues related to the dispute management.

Thank you.