Water, Society and Sustainability
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Lecture - 08
The South Asian Context

Lecture number 7; it is going to share light on the South Asian context, that why discussing the South Asian context is so relevant so, far as the broader topic of Water, Society and Sustainability concern.

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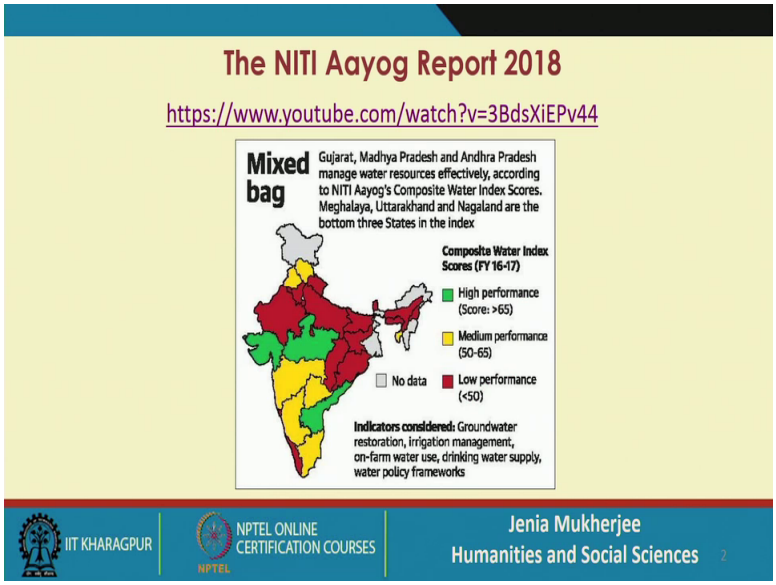

So, while we are actually recording the series of lectures on one hand, on the other hand the Niti Aayog Report on composite water management index have just been released and it is a report that you know provides lot of warning about what is going on in the water scenario in India during our contemporary times and it says that India is actually facing its worst water crisis these days and the composite water index scores, it shows, it had asses the high performance and medium performance and low performance state.

So, from this map you can see that these are the red ones these are the low performance states, the green once these are the high performance states and the yellow ones, these are the medium performance states. So, the indicators that have been considered to come up with this composite water management index are groundwater restoration, irrigation management, on farm water use, drinking water, supply water policy frameworks and all

these very important parameters. So, these all these indicators have been considered and they have come up with this very recent composite water index core, which shows the that the performance of most of the states is actually pathetic and it is not only shedding lot of light or drawing our attention on the rural sector, but also the urban sector as well.

So, we will see a very small clip or a video on this particular report or some of the key highlights or findings from these Niti Aayog Report. So, let us just watch this small clip. The Niti Aayog announced on Thursday that India was suffering the worst water crisis in its history, according to its composite water management index report, crisis is only going to get worse by 2030.

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The demand for water in India is projected to be twice the available supply implying and eventual 6 percent loss to the country's GDP. We are currently standing in Delhi area of New Delhi, which is considered Asia's biggest unauthorized colony and one of the least driest. The taps here do not have any water, but Delhi is not the only place that are suffering from a water crisis.

According to a report released by the Niti Ayog today, India is currently suffering from its worst water crisis in history. The report which is titled composite water management index rank states, according to various aspects; like availability of drinking water, groundwater, as well as policies made by the state government with regard to management of water resources. According to this report, Gujarat has come out as the

best performing state followed by Madhya Pradesh and Andhra Pradesh. Meghalaya on the other hand has come out as the worst performing state.

The more jarring facts that the report has come out with 2 lakh people in India die every year due to inadequate access to safe water, 75 percent households do not have access to drinking water on their premises, 84 percent rural households do not have access to pipe water supply and if the situation continues to remain as bad the forecast is, that by 2030 40 percent of India's population will not have access to drinking water and by 2020 21 cities like those of Delhi, Chennai, Bangalore and Hyderabad will not have access to ground water affecting nearly 100 million people. In New Delhi, this is Sukethi Devedhi for NDTV.

So, we can understand how shocking the entire scenario is and this data is really shocking and it is quite frustrating to learn that India is really going through its worst water crisis. So, this is the current scenario right now. On the other hand, I mean before moving into like what are the grand initiatives and plans that are being considered or that are be implemented, that are being getting plan to get implemented we will just focus on the the from a little bit of theoretical perspective, that why I focusing on the South Asian context remains important.

So, one, we have already seen the present scenario, I mean present water scenario so far as the entire Indian subcontinent is concerned. Now on the other hand, we will be discussing the grand plans schemes and initiatives that are being perceived conceived and also that are, you know being plan to get implemented across the national sector affecting the national sector, as well as you know having transboundary transnational implications as well.

On the other hand, now, I will be basically focusing on, I mean little bit of theoretical conceptualization on why then we think that South Asia should get a little bit of, you know more focus should be emphasized as an unit of analysis when we are actually focusing on water society and sustainability as a whole.

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So, this is a paper which was written by me and one of my students, it is called environmental Towards Environmental Humanities: Relevance, Approaches and Agenda within the Indian Context. So, here we try to come up with two arguments that why we think, specifically Indian and broadly South Asian context should be incorporated within the broader ambit of environmental humanities that is the broad umbrella discipline that is the broad you know environmental discipline these days that talks about converging both methodologies and methods across natural and social sciences.

So, the first argument that we made is that we should include or incorporate South Asia within environmental humanities because this South Asian context is a very divergent from the west. You can see that and why this the context is divergent? Because it has this, I mean it is encountering the environmental problems that other regions are encountering as well; like for example, the western countries, the problems being encounter by western countries are also, I mean the Indian people or the South Asians, they are also encountering similar set of problems, but in addition South Asia encounters additional vulnerability. Now, additional vulnerability connected to the long historical past of colonial intervention; this is very important.

So, we had already encountered a colonialism and subjugation, domination and most importantly these, you know intervention or colonialism, the colonial legacy actually had continued even during the post independence years, especially against profound and

prominent functioning of trans-national aid agencies. So, we need to understand that South Asia faces additional vulnerability with its, you know long inherited past of a colonialism and the continued legacy of the colonial policies during our post independent times and when we have new players, other players in scene most importantly the trans-national aid agencies, including the world bank, world trade organization, IMF etcetera.

So, this is one reason why we need to a focus on South Asia and the second point that it is the, second point is also very relevant, because we have argued that South Asia offers rich historical traditions of ecological and humanistic knowledge. Now the idea is to not to the idea is not to romanticize or you know say that South Asia had a golden ecological past, but rather to make a point that the traditions or the, you know ecological knowledge that we had you know those should be explored, because those give lot of examples to ask that how we can actually, you know have reconciliatory relationship or interaction with nature.

So, because this ecological and humanistic knowledge of our past during the pre colonial period to a great extent, it is the history of metabolism between nature and society and here more specifically water and society. So, it is important for us to look into the Indian or broadly South Asian context to you know explore the historical traditions of ecological and humanistic knowledge and wisdom that were, and this is again another argument, a which is little political and extremely important; that is this knowledge had been deliberately not provided agency with or accorded importance due to political reasons; like enforcing a cultural hegemony and economic maneuverings

So, you can understand that I am actually hinting at you know the politics that had lead to the bifurcation or categorization of first world and third world, so called developed and underdeveloped or developing for that matter. So, how our reach knowledge, how the rheological, pre colonial ecological and humanistic knowledge of the past had not been accounted or had been, had not been to a great extent highlighted and how this project had actually remain political?

So, again I am emphasizing that the idea is not to romanticize our quote unquote golden past, but the ideas also to get explore to like what were the systems, what were the techniques, what were the practices and policies that were there before South Asia could encounter with the colonial rule.

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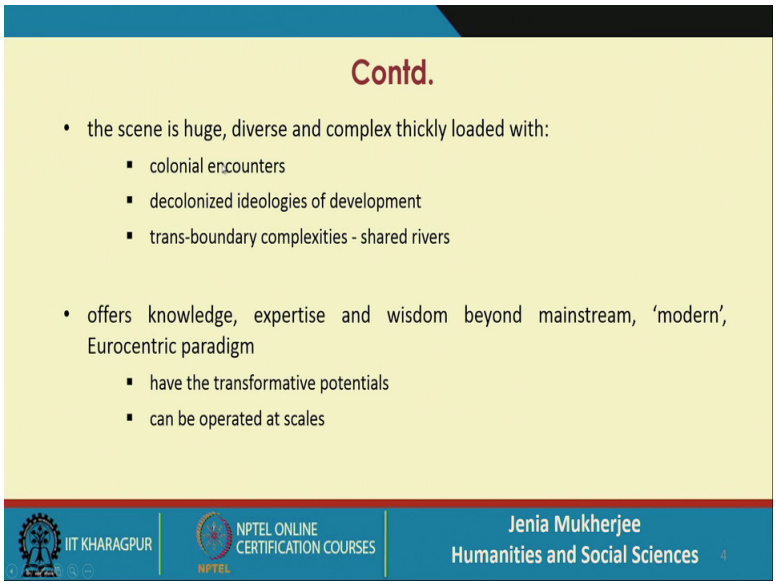

So, yes this is an elaboration of the same, where I would like to argue that we should interpolate South Asia or incorporate South Asia, you know while discussing environment, while discussing water as specifically, because South Asian scene is huge, diverse and complex loaded with colonial encounters, followed by decolonized ideologies of development, which means that you know when this colonial rule ended and the country in particular and the, and different countries of global south in general became decolonized.

Then of course, there were the decolonized desires or ideologies or for that matter sometimes imposition of the development discourse. So, this is there and finally and another important very pertinent point is this, trans-boundary complexity, because we need to keep in mind.

So, I am not saying India. I am basically saying South Asia, because if I say South Asia then I will be able to highlight that you know South Asian rivers or South Asian ecosystem, it means that it is I mean this ecosystems are sometimes this ecosystem resources are shared ecosystem resources, the rivers are shared rivers. For example, the Ganges basin or the Brahmaputra basin, these are shared river basins so which we need to keep in mind. So, there should be some kind of a multilateral you know multilateral cooperation at the basin level.

So, we need to understand this trans-boundary complexities, when we have to focus on South Asian rivers, because this is a South Asian rivers not Indian or Bangladeshi river in particular, but rivers which are shared, you know by different nations. So this is one and the second point is I mention that we also really need to be aware of the knowledge expertise and wisdom that is there in this in the, you know ancient South Asian tradition.

So, because we need to you know unveil or we need to move beyond mainstream so called quote and unquote modern, western, Eurocentric paradigm and we also need to see whether this practices, whether these techniques, whether these policies today can be implemented at scales? Whether they have the potential to get operated or to be operated at scale and weather they really have the transformative potentials?

So, in order to assess and in order to map that, first we need to explore this you know array of practices that are available in within the South Asian context before South Asia could encounter with the colonial rule.

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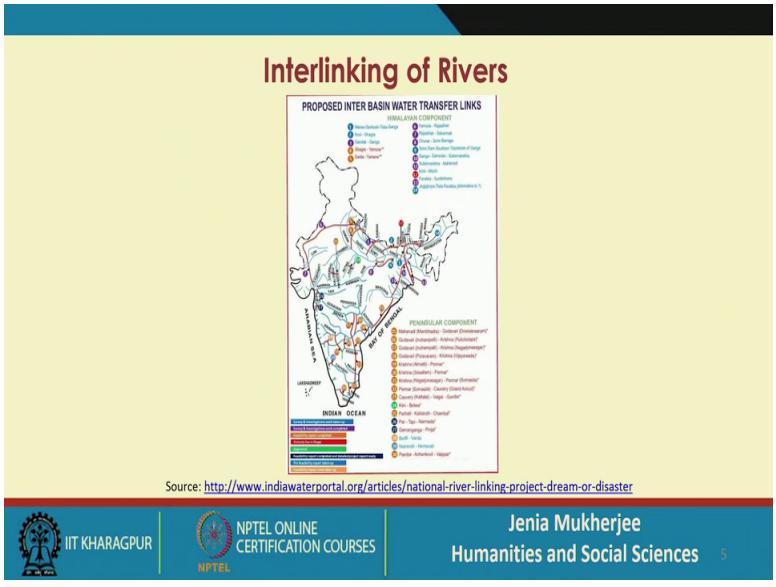

Yes. So, this is again the present context, the grand initiatives, the major plan or the major dream that India is dreaming at and this is the interlinking of rivers project which is considered as I mean largest project not only, I mean not only in India, but in the world. So, because you can see from this map that there are different components within this projects; one is this Himalayan component, the northern component and the other one is this southern component or the peninsular component and.

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So, it is being carried forward or being conceived and carried forward and the aegis of the National Water Development Agency there are, as I mentioned there are different components within the projects. So, like 14 inter-linked projects for Himalayan component in the north 16 inert link projects for the peninsular component in the south and apart from there are also like 37 interstate river linking projects.

So, it is a very very big, so it is a mammoth a project as the grand so, called Grand, I do not know whether grand or not, because grand is again a kind of a subjective term, but it is mentioned that it is a grand initiative, it is a mammoth project with so many components, involving multiple stakeholders and of course, huge costs. Now, these interlinking of rivers it is, it has not happened suddenly, it is not a you know sudden development in the Indian water policy framework, but you know I mean there is a historical context we will come to it, but one important point is that once this particular project was concealed, immediately there was whole lot of debate, there was a hotbed of controversy among the scientist, the experts, the you know the protest groups and organizations that whether this project is a feasible project or not or whether this project would ultimately benefit the Indian water scenario and the Indian people at large or not?

So, the whole a debate was surrounding whether to link or not to link the rivers? So, this is the whole argument all about like, you know people giving pointing out different numerical facts and figures justifying the implementation of the project or different

components of project. On the other hand there are of course, you know this radical groups and organizations and also scientist pointing out that no, it is going to be a quote unquote, I am quoting Medha Patkar, it is going to be a millennium fally and disaster and the fiasco.

So, the debate is surrounding whether to link or not to link river and you will find many works many, you know, I mean different reports, different book chapters and articles on I mean whether these grand initiative is going to benefit the Indian water sectors or the Indian society for that matter at large or not.

Because, the whole idea as we all know is, I mean India has both water scars and water flashed region. So, this idea is, the idea is to transfer water from the water flash region to the water scars region through inter basin and inter intra basin transfer of water. So, this is the idea that I mean in that way the ultimate purpose is to basically increase the area of irrigated land and why this is important, because it is predicted by the, by scientist that by 2050 India is going to have major crisis in the production of food grains.

So, it is very important to bring more and more lands under the irrigated area. So, the only option to this is basically a you know to come up with a project that can you know to a great extent make possible the transfer of water from water scars to water flash region.

So, this is the idea all about, but you know there are lot of social concerns and there are lot of environmental concerns that are going on, because you know this scientist they have come up with reports and publications which show that, if even part of the project is implemented then it would lead to massive displacement and it will incurred massive social cause. And on the other hand not only it will affect people at large on, it will not only affect the people in the project sites, but it will also to a great extent affect the environmental flows which is called the e flows. So, e flows in river system, so it will affect aquatic ecosystem, wildlife and disrupt the entire ecological balance in the river.

So, if you go through some of these articles which are cited in the reference list, you will be able to find out the hardcore concrete empirical, you know arguments or empirical facts which shows that how it is going to incur both, you know huge ecological and social cost. And another important thing is that beyond or apart from ecological massive ecological and social cause, the project one has to keep in mind that it is a grand project

or it is a matter of South Asian proportion; this is what which needs to get highlighted. Because we are saying it is inter linking of rivers in India, but it is going to affect the entire South Asian basin.

So, this is not you know getting lot of stress or emphasis in some of the reports or some of the publication which is actually justifying the implementation of ILR. So, we need to keep in mind that it is a matter of South Asian proportions, because I had already mentioned that South Asia is also loaded with trans-boundary water and river complexity.

So, it is a matter of South Asian proportion, we need to really come up with an international legal framework before we start implementing ILR. So, now, I mean by portions of ILR or different components of ILR all are becoming ready to get implemented. For example, you know the Ken Betwa Link Project that will be implemented very soon, so, it is almost ready. But then the question is, whether an international legal framework has been choked out before that? So, maybe the argument might be done, I mean there MOU have been signed between the states, I mean which will be affected positively or negatively due to Ken Betwa link a project, but then the whole question is that before coming up with an international legal framework, it is, I mean it is not quite justifiable to implement even a different components that are there within the ILR.

So, the idea is that unilateral decision by the Indian nation unfortunately is been taken for a multilateral project. So, this should not be the case and this is one of the major or one of the strong criticisms that this particular project is facing during the recent times.

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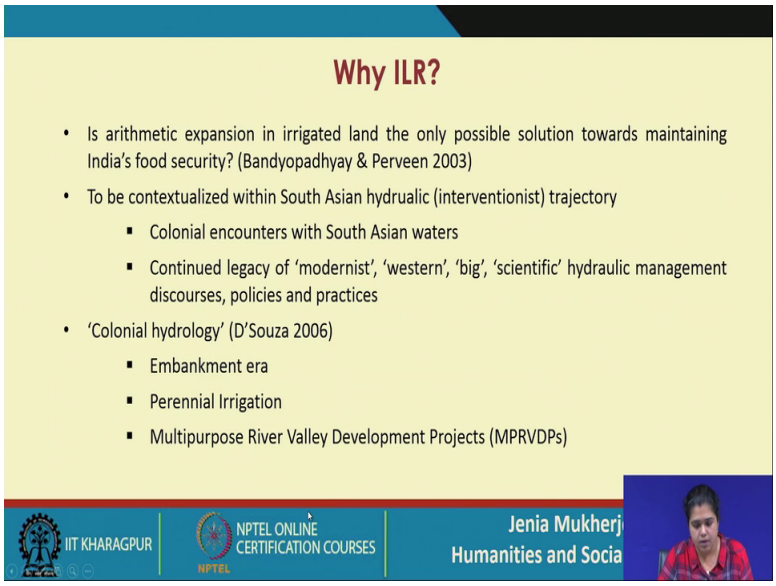

So, now coming to the question of that we know that it is going to incur huge social and ecological cause, but still why, then are we so interested in the implementation of ILR? Because Jonathan Bandyopadhyay and Perveen in their 2003 paper, they argued that; is arithmetic expansion in irrigated land, the only possible solution towards maintaining India's food security. So, as I mentioned earlier that the logic or the objective one of the major objectives behind the implementation of ILR is that, it is saying that it is important to important, because I mean it can take care of the supply of food grains by expanding the area of irrigated lands.

Now, Jonathan Bandyopadhyay and Perveen they raised this question that; is this the only option? Cannot we think about other small scale options that can you know operate at scale and that can have the same implication, but that can actually I mean reduce the social cost? So, this is the argument that they are raising a very important a very pertinent question, but then the question is still why are we not you know giving or why are we not putting much of our thoughts in these ideas, rather we are going for you know for towards, I mean justifying this entire this mammoth project or initiative.

Now, from a social science perspectives, here I would like to argue and emphasize that if we need to look into the bigger question of why even after you know having so many ramifications, ILR is being a conceive that and is being implemented? Then we really need to understand technological interventions not only as a linear progression, but also

we need to look into the larger historical and political processes that are at play, that are at work behind you know implementation of particular technologies during particular periods of time.

So, what I am saying is that ILR also needs to be contextualize within South Asian hydraulic interventionist trajectory, yes and I mentioned intervention is we can of course, debate on this, because I would like to say that ILR is not a rapid or a sudden development, but it can be contextualized against, what had already happened, since the last few centuries within the history of South Asia or within the water history of South Asia. So, as I mentioned earlier also that South Asian waters had encountered colonial intervention and why this is so important, we will be elaborated in the next couple of lectures that I am going to deliver with the South Asian focus in mind.

So, this is one second is that after the end of the colonial rule when India become decolonized, when India entered into the post independence period, then unfortunately this legacy continued, because you know this technology, it kept on advancing and along with the advancement in the mode of production, so capitalism from one phase to the other.

So, this we, these political processes, this is economic processes, we need to keep in mind when we actually need to map, access, evaluate, explore and understand you know technological interventions including interlinking of rivers. So, in colonialism and South Asian waters, then colonial legacy, continued colonial legacy, colonial continued legacy of modernist, western, big, scientific hydraulic management discourses, policies and practices.

So, yes, as I was mentioning that this colonial period is so important, because is radical altered our relationship with nature more specifically water as well ok. So, the I mean pre colonial attitude or the pre colonial metabolic relationship or the metabolism between water and society, it actually transform to the metabolic rift between water and society.

So, we will discuss all these in details, I will elaborate all these you know theoretical tractions with empirical investigations detail empirical facts and data when we will be focusing into what happened during the colonial period, what had been the history of hydraulic interventions when South Asia encountered the colonial rule and then this particular term has been used by Rohan Dsouza in his 2006 article, he says that it is

colonial hydrology, because I mean he says that the South Asian experience, so far as water is concerned, it comprise of a very different experience you know which is so radically different from his experience during the pre colonial times.

So, colonial period we find is massive big projects on our rivers, on our water bodies including embankments. So, the first period is the period or the era of the construction of embankment followed by the era of, you know perennial irrigation systems followed by multipurpose river valley development projects. Now multipurpose river valley development project, it I mean these were conceptualized during the 1940s and these were implemented at scales across all the major rivers in India since the post independent period.

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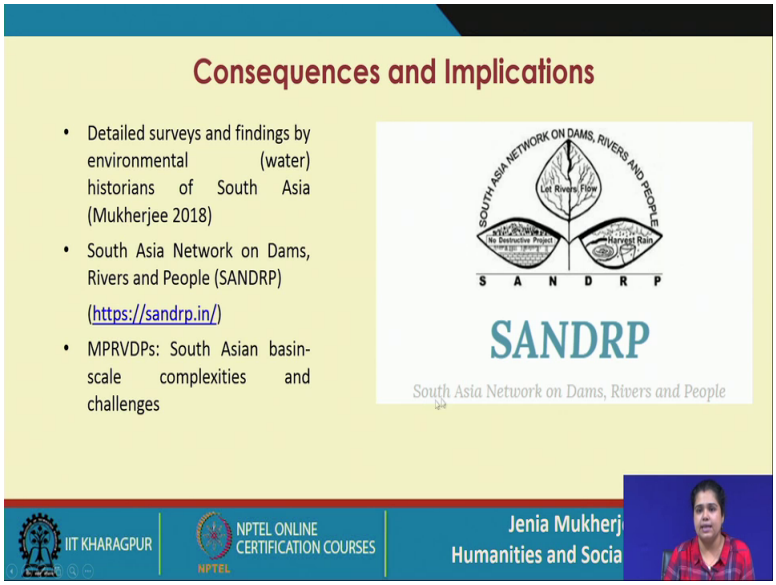

And of course, the consequences and implications had been huge and severe and like if you go through the works of the different environmental for that matter water historians of South Asia, you will find that they had covered in detail like what had been the impacts or implications and consequences of these hydraulic interventions on the ecology and the society of, I mean the nation at large, but also you know the other nations. So, for as South Asian concerned and here I am saying that like I am mainly talking about environmental historians of I have written of South Asia, but it is specifically you know the Indian context and here South Asian India gets overlapped get overlap sometimes.

Because you have to keep in mind that before 1947, Indian subcontinent it I mean Indian subcontinent comprised of a Pakistan and Bangladesh as well. So, if you go through one of my chapter that is again sited in the reference list, so, there I have done a historiography on the history of waters in India and you will find out, I mean the implications or consequences of colonial hydraulic interventions in South Asian ecology and society at large.

And if you want to come up with I mean if you want to know the you know what happened during the contemporary times in post independent period so far as the implementation of multipurpose river while development schemes and project are concerned, then I will request you to go through this particular website of South Asia Network on Dams, Rivers and People, so this is SANDRP.

So, definitely you should go through their website and they publish their journal every month which is called damn, rivers and people, and it is a very fascinating and radical you know organization and if you go through the publications and the reports of SANDRP, you will get to know what is going on across the country. Yes.

So and finally, like a one has to keep in mind that like international interlinking of rivers like ILR multipurpose river valley development projects also, I mean also explored basin scale South Asian basin scale complexities and challenges, because as I had argued earlier also that this we have to keep in mind that these in a water resources, these rivers these are not only the river of a particular nation, but these are shared rivers.

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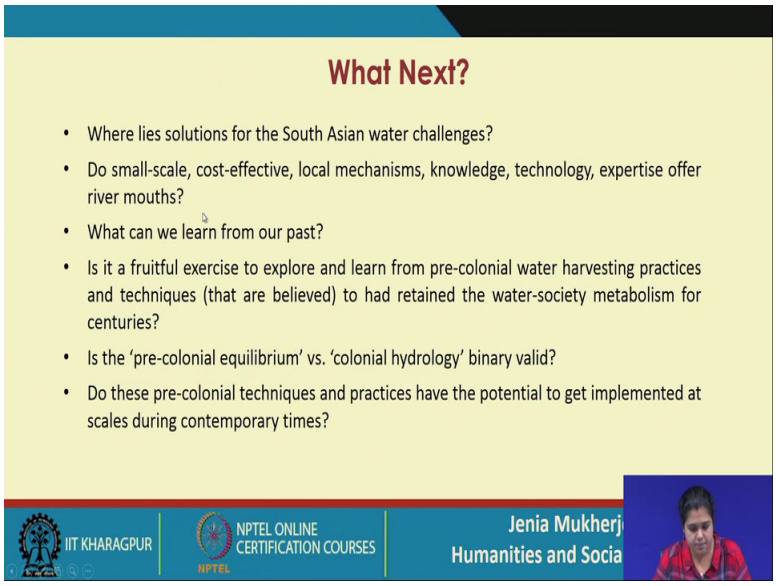

So, the question is what next? So, we know by now that the situation is alarming and I mean the data is shocking, but then what do we need to do, what are we up to? So, I am here to only let you know or you know I am here only increase your anxiety about what is going on so far as water sector in India is concerned. It is not that we also need to come up with of course, possible solutions, we also need to come up with recommendations that should work at scale and that should enable and ensure our desirable sustainable future.

But the way scientist and natural scientist or you know engineer or a technical person will provide a solutions, will be very different form a way the social scientist would try to provide recommendations and solutions and then finally, I will say whether you know there can be some convergence across natural sciences and social sciences and whether we can really come up with some comprehensive solutions, which will really be able to ameliorate the water situation that the country is encountering or undergoing right now.

So, these are few questions that we really need to think. So, question number 1, where lies solutions for the South Asian water challenges? So, now, once we have seen, once we are aware with the situation, then immediate next question is, what are the things that we need to do, I mean to come up with effective solutions? So, where lies the solutions that we need to find out. So do small scale cost effective local mechanisms, knowledge, technology, expertise offer river mouths? So, as I mention that we of course, South Asia

has a or had rich tradition of ecological knowledge, humanistic knowledge and then the question is when we are thinking about solution, is it also imminent to go back and look into those array of practices that were already existing within the South Asian context?

Now, so yes related to this what can we learn from our past? So it is a direct question of what we can learn from our predecessors from our past. Now is it a fruitful exercise to explore and learn from pre colonial water harvesting practice and techniques that are believed to had retained the water society metabolism for centuries?

Now of course, again I am saying we will debate on this, because I mean to make this kind of a conclusion or this kind of an argument that the water techniques or water harvesting practices during the pre colonial times, I mean it had no problem at all, so far as technological questions or so for the societal question for concerned. So, but at least I mean we will see that whether this particular believe that is retained water society metabolism is true or not.

So, again as I mentioned that we will not try to, I will not try to give you a linear conclusions or I will not try to you know generalize a things, but we would definitely debate on, we will also I would very much encourage interactions and exchanges relating to whether this colonial equilibrium versus, I mean pre colonial equilibrium versus colonial hydrology this binary categorization is valid or not. And finally, do these pre colonial techniques and practices have the potential to get implemented at scales during contemporary text?

This is again you know as an environmental, I mean as a person coming from the environmental history background or discipline, this is a question, a very pertinent question that I would like raise that once we start exploring this pre colonial techniques and practices, once we start understanding the values in it, once we start you know getting excited about the different components of this pre colonial practices. Then the next question is, I mean though these are small scale, though these are cost effective? So, when we will know this by exploring these practices. Then the question would be whether these, I mean there is scope for these to get implemented today within the South Asian context considering the South Asian complexities during our recent times? So, with this I will just give you a glimpse of the course coverage so far as South Asian waters is concerned.

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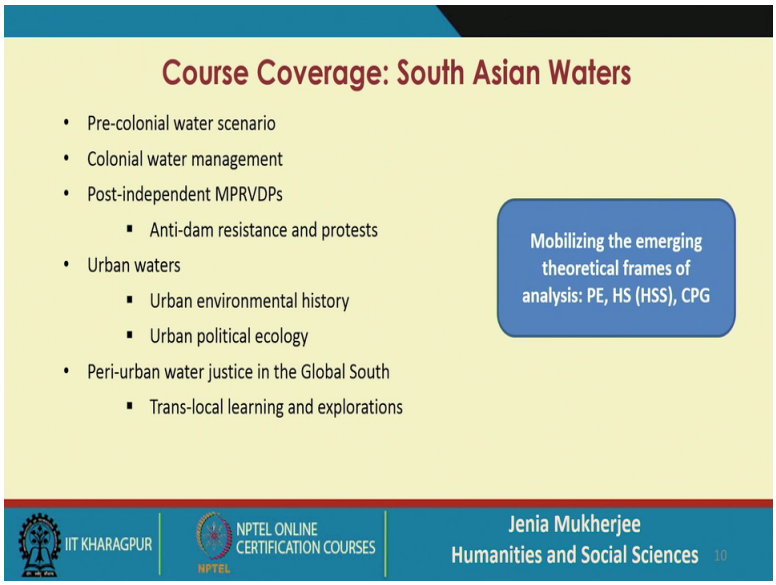

So, I will cover in a couple of lectures pre colonial water scenario. So, I will be shading light on the pre colonial water scenario, it will not only mean the ancient period, but it will also have lot of coverage on the mediaeval period as well, because pre colonial it's a broad time which means the, I mean the entire historical time frame before the coming of the British.

So, it will include definitely the ancient and also mediaeval period. Followed by, I would discuss in detail again in one or two lectures the colonial water management policies followed by post independent multipurpose river valley development project. Now when I will be covering post independent multipurpose river valley development projects, I mean broadly the construction of dams and barrages and I will also focus on the anti dam resistance and protest, because this is also very important because from the perspective of social science, because like these anti-dam resistance and protest movements like for that matter Narmada Bachao Andholan or Silent Valley Movement or you know the movement against the Tehri Dam this is very important, because this fall you know within the ambit of what is known as new social movements; that is the social movements of our recent times.

So, we also need to know not only about the history of these dams or you know barrage construction, but we also need to know how the people also trying hard different people different organizations the you know the people who will be directly affected by the

project, the students, the people from you know academia, policymakers, they are also coming to the forefront and you know trying to mobilize the other people and they are also trying to put a whole lot of pressure on the government asking the government not to pursue some of this projects, because this projects will have catastrophic and disaster impact on ecology and society.

So, whether this movement has been successful or not, so why successful, why not successful? So it is very important for us to take a look into the nature and pattern of these you know new social movements. So, I do not know whether I will be able to do justice to the entire coverage or not, but at least I will try to touch upon this anti dam resistance movement or the protest movements and then you will have lot of scope to go into further detail by leading by going through the reference lists.

And then another area which has to be definitely covered is the urban context, because urban scene is important. We have also seen in that Niti Aayog composite water management index that they, I mean the report says that by 2020, almost 21 cities; 21 Indian cities would be lacking access to drinking water.

So, this is a scenario; so one hand the urban area is continuously increasing and expanding and on the other hand you know we are lacking a basic amenities, basic utilities like portable drinking water and sanitation. So, we need to cover urban waters and I will of course, talk about how urban environmental history and how political ecology frameworks and perspectives can be important methodological you know tools and mythological frameworks for us to understand or to you know identify and stress the urban water challenges and also not only to identify challenges, but also to find out and explore potentials within each and every city. So, each city has its own story is important for us to know this and important for us to explore regional specificities and variables as well.

Finally, there will be one lecture or presentation on Peri-urban water justice in the Global South and here I mean, it is a kind of a cross cutting comparative study. So, though the focus is on South Asia, but here I will be able to tell you stories from one city from Latin America, one city from Africa, then we will be in a position to compare what is going on in the Peri-urban sphere, because Peri-urban is also another thing which needs to be consider these days because Peri-urban also is a kind of a contemporary connotation. So,

it means that the cities, I mean the areas which were rural yesterday and which will be urban tomorrow and which are today in the zone of transition. So, I mean they are getting urbanized, but unfortunately you know they are not being able to enjoy some of the basic amenities that otherwise the cities enjoy.

So, this is basically a syndrome which can be best categorized as or conceptualize as urbanization without infrastructure and this without infrastructure also include lack of municipal water supply arrangement. So, what is happening? So, when these water supply arrangements are lacking in this Peri-urban areas, what are the ways, what are the coping mechanism or strategies through which the people themselves are devising new ways coming up with alternative solutions to meet their daily needs of water? So this is also an area that I will be covering.

So, this is I mean the quotes coverage with the South Asian focus in mind. And the final point is that of course, also we had discussed all this frameworks in these previous lectures. So, I had cover the ongoing theoretical frameworks on you know ecosystem resources more importantly water; like I have talked about political ecology, I talked about a sociohydrology, I have talked about hydro social and also critical physical geography. So, it will be a challenging, but yet I think a very fruitful and exciting venture or an exercise to mobilize this emerging theoretical context within the you know South Asian context.

So, I am not saying the course, we will be able to justice to everything that I am trying to promise here, but what I will say is that at least it will give you a perspective which I mean through which you can get a clear cut picture and then you can do your own research and you will get some directions that how can you understand and explore a particular problem and how can you really try to come up with comprehensive solutions. So, this is the ultimate purpose of the course and these are some of the references.

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Thank you.