Sustainable and Affordable Sanitation Solutions for Small Towns
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Lecture - 03
Centralised or Decentralised?

So, let us compare the Centralized and Decentralized systems as a kind of quickly as a kind of policy.

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So, this is a typical sewerage treatment plant which is actually highly demanding on investments, you need much capital to come into that, it demands land it need a lot of land because it is the aeration thats kind of happening there and it also needs management capacity you know, it needs kind of trained and educated kind of man power, to kind of you know run it and even if you have all this, it is an end of the pipe solution, anybody wants to comment on that words- end of the pipe solution?

Student: So, I mean how you I would say like how would local people manage a decentralized system if they are not specialized in managing and skilled proffesionals arenot available.Yeah. So, that is why you need trained knowledge, I am not critiquing; I am telling what are the demands of that system. So, the point is you know what is the end of the pipe solution?

Student: Because all the waste fromall the places would be, all the pipeline would be taken to the sewerage treatment plant. So, if they are working, then all the provision which are provided, will be able to solve the problems (Refer Time: 01:34).

Yeah so; that means, you know the entire waste has to come to one point.

Student: It is directed from the source.

Yes.

Student: (Refer Time: 01:42).

It is not the you know because you are kind of centralizing it.

Student: Centralizing.

So, the calculations tell that 70 percent of the cost is for connecting sewers, it is not for the plant and I will tell you tomorrow the kind of you know, what are the kind of dangers of that also, you know the plant versus the sewer kind of an issue. So, the point is that so, you are not acknowledging the pollution, the more the pollution the merrier because you have pumping station,s any way it will reach the last point.

So, no so, you do not have an awareness about pollution when you have a end of the pipe solution, you think that you know everything can be brought here, it can be treated. So, nobody takes responsibility of their own pollution because they think that, flush and forget.

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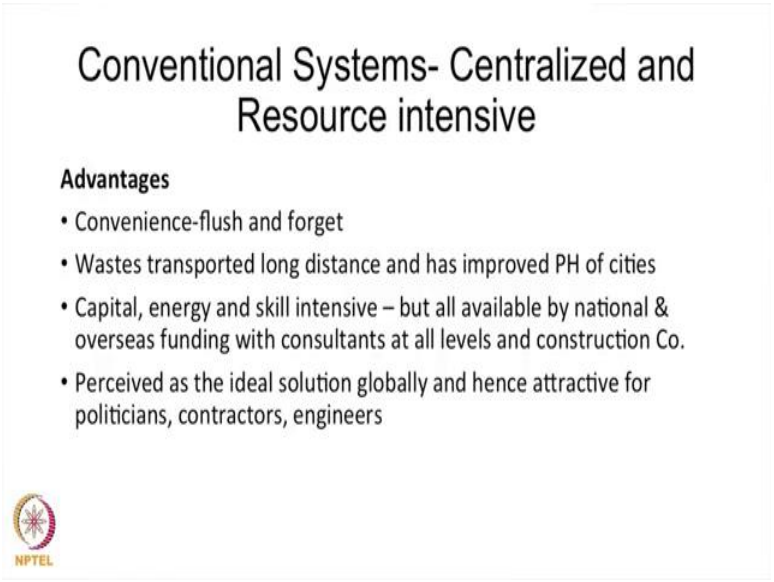

So, this is it; it is very convenient you can flush and forget that is the one issue and it is it is transported to long distances, treated well, it has improved the public health in European towns capital energy and skill intensive, but it is available by national and over overseas funding and you have, you might get readymade consultants also.

So, if you have international financial institutions funding it, you have readymade consultants who will come and give you give you the plan of this also. So, that way is very very attractive to an urban local body if you get that and then it is perceived to be the ideal solution globally. So that means, you know it is attractive for politicians if he if he brings in a sewerage treatment plant, it is very good for contractors who will build it and then it is very good for the engineers who will facilitate that, isnt it?

So, everybody loves a good STP, nobody will be against that whoever will be taking the decisions.

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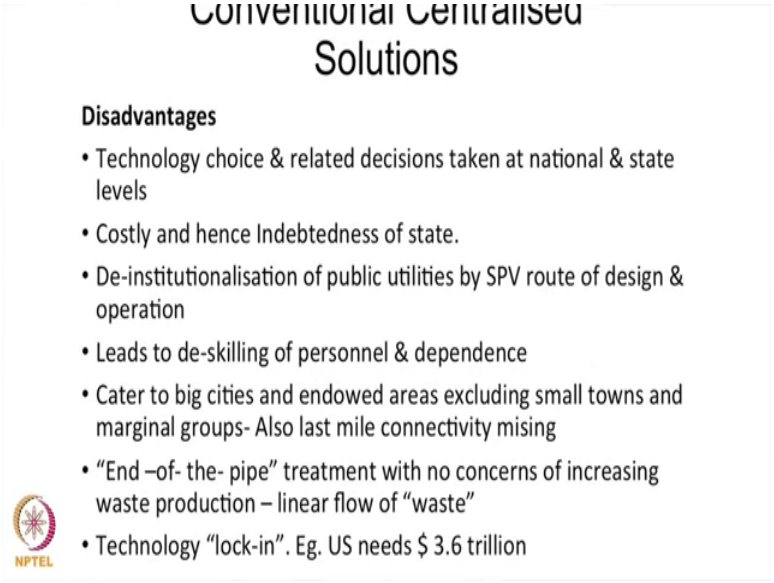

But there are disadvantages, one is that you know your technology choice and related decisions are always made at the national level or at the state level; it is never done at the kind of a local level. Now, with decentralization slowly picking up like you know, urban local bodies are also can be taken, it is very costly and it can lead the governments to indebtedness which also; I will be mentioning tomorrow. All these issues we will be kind of you know discussing tomorrow. So, I am not going into that, what could be the kind of the problems in at the level of governance of a centralized you know solution.

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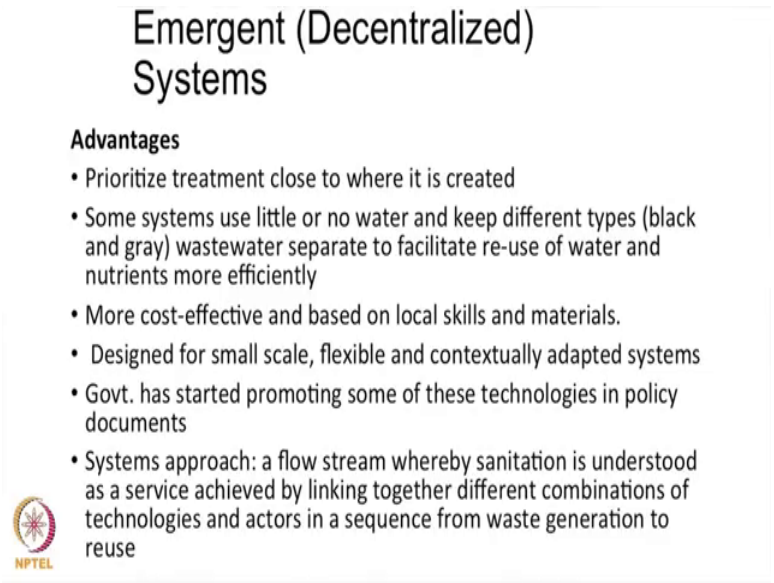

Then we have something called the emergent solutions which you know I did not actually mention in our European experience, what happened is that you know, this main stream solutions that became very costly. So, in Europe and US, what is happening is that you know they are trying to recycle these wastes also. Recycle it into agriculture; recycling into other you know non human kinds of uses and things like that. So, there is a kind of, there is a neo centralized solutions which actually address the problem of recycling. And then the last point is that you know there are emergent decentralized solutions, which actually tells that you dont have to take the you know waste anywhere; can you do it at the point itself, treating at the point itself.

So, it is called the onsite sanitation systems OSS. So, these are so, what are the advantages of this? One is you know it prioritize treatment where it is created, like septic tank is an example of you know an onsite sanitation system, if you have a good septic tank then you dont need to kind of take it to anywhere else like if you segregate your solid waste there itself can the organic be treated in your home and can the plastics be kind of taken to somewhere and you know kind of get recycled also you know.

So, you do not have to have big systems to kind of to do that. So, some systems use kind of you know kind of use a lot of you know, there are the two things that you have to kind of now familiarize it one is grey water, one type of water is grey water; grey water is water from bathroom, kitchen all those kinds of things and black water is water that is coming out of the toilet.

So, in a centralized system, you need a cocktail, you kind of, to get it all together because you need a lot of water because your carriage is through water carriage, the technology is a water carriage technology. So, you need lot of so, there is a lot of waste wastage of water also when you bring the systems together. So, can you kind of you know, treat them separately is one question. So, if black water is treated in a very good septic tank and if grey water is treated you know, it does not need much treatment actually it needs a kind of settling and some kind of you know filtration and then it can be openly kind of go into the (environment).

So, this actually kind of, if you separate the flows you know; it can actually make the treatment much more easier and less costly also and it can be designed for small scale so, it can be flexible and it can be contextually adapted systems. And you know actually in

the NUSP, National Urban Sanitation Policy, for the first time government actually promotes this kind of a systems. And if there is and also there is a lot of you know and then there is a systems approach also where the flow from one stream can actually kind of get into another stream also, like you know the like what he was telling about you know the FSTP, if treated well it can go into agriculture.

And you know so, those kinds of possibilities are also there you know your solid waste if it gets into you know bio gas, your fuel consumption you know your CNG consumption also can come down. So, it is no longer a waste it becomes a resource. So, those are the possibilities that we are talking about in emergent solution you know why I am telling this is you know it is also something to do with a period that we are living in also.

You know in the 50s and 60s, it was a lot of optimism with the industrial revolution, everything has to be big and everything has to be expensive and you know Ford is Ford is kind of production technologies also whenever Ford discovered that you know there can be big production systems, there can be big kind of you know what you call where centralized systems can be there, labor can be you know given a middle class kind of a you know status all this; but over the period of time those production systems have crumbled.

Now, it is all very decentralized systems, a car is produced, a tire is produced somewhere you know your gear is produced somewhere and then it is flexible production and so, labor is informalized you know. So, that is the way you know the production systems are moving also. So, that is the first problem with you know, the kind of not industrial technologies, post industrial technologies are emerging.

Second, environment, in that old production system environment was not a major kind of an issue. So, with the environmental awareness, we are interested in sustainability .And the third element is affordability, here the state or the industry or somebody has to really invest and in the other one, we can have more affordable technology.

So, affordability and sustainability becomes two major you know kind of pillars of your thinking, my generation did not have to think about it, but your generation definitely has to think about these issues also when we talk about development. So, and that becomes this you know then this decentralized systems becomes much more attractive than you know whatever we are talking about. So, decentralized systems are mostly individual

units and scaling up needs more institutional innovations you know which we will be talking about later. There are only a few service providers.

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So, how do you kind of train others that is the challenge that we have and then you know this is also a septic smart is a very interesting thing you know 2016-17, I spend 1 year in University of Berkeley. So, the week I went there that is the septic smart week in September in US because they found that you know they cannot afford these kinds of big systems. For example, there was a you know a professor who actually calculated, in the next 5 years how much investment do you need to kind of you know rehabilitate your systems your big systems you know; it is actually 3.6 trillion dollars you need.

You need 3.6 trillion dollars to kind of make your water and sanitation systems better, why? You have invested your technology, you are locked in your technology to that and we have locked on only 16 percent in India, 33 percent in a class one and two cities, we found if we take the entire Indian scenario, we have only 16 percent of those kinds of things; that means, we have 84 percent more scope to get into sustainability, sustainability and affordability.

That means we can leapfrog to sustainability "tavalachattom" in Malayalam, we can leapfrog to sustainability, we do not have to go through the kind of problems that they are facing you know like industrial agriculture, it is actually facing a lot of problems, green revolution agriculture, industrial agriculture facing a lot of problems and people

are painstakingly coming to organic agriculture by subsidies and things like that our agriculture is mostly organic so, why should we go there and then come back you know.

So, that is the one thing that your generation should be thinking about also, you know my generation did not have the kind of possibility to think like that because we have only one kind of a thinking which we were taught. You can actually think about sustainability and affordability, which will give you totally different solutions. So, you can leapfrog into sustainability where the Americans will take 100 more years to kind of do that. So, we dont have to become US into next 100 years and think another 100 years to get into sustainability because, by the time they are already into thinking about sustainability, you understand?

So, that is where these possibilities are there, these kinds of technologies, but it needs many other things you know you need local capacity building, you need local institution building, you need a lot of behavioral changes and cooperation, you need local regulation compliance you know. So, all this we will be talking about in the Alleppey case, how we are trying to address this issues to make it work. It is not as easy as the other one, if we need an STP here, tomorrow ADB or you know JICA will give you a funding, consultants will come from Delhi, plan it all for you, but here you dont have money, you do not have the readymade technology, you do not have any consultants and you and, but you have local materials and all to kind of build that you know.

So, how do we kind of proceed that is a question that we are going to ask. So, this is the exercise which also we do not need to do now.

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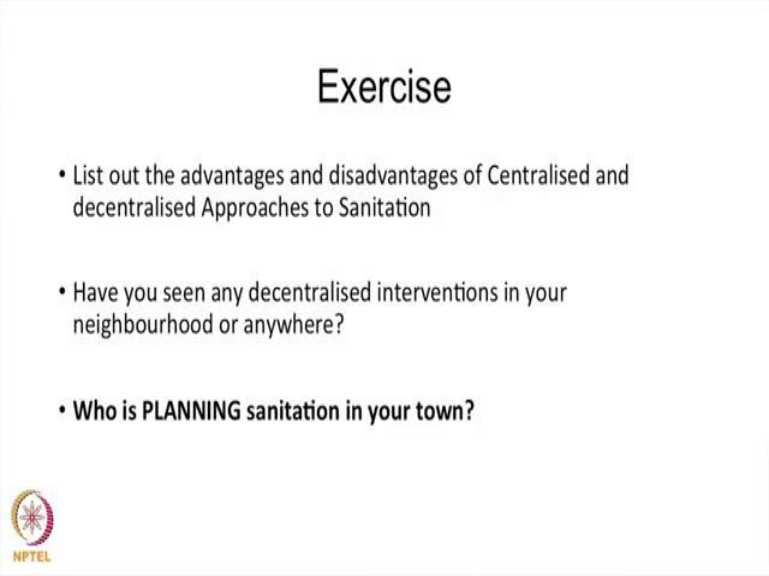

But list out the you know list out the advantages and disadvantages of centralized and decentralized approaches to sanitation. Second, have you seen any decentralized interventions in neighborhood or anywhere? Who is planning sanitation in your town? I think the last question can be very interesting question, who is planning sanitation in your town?

Student: (Refer Time: 14:52).

Student: (Refer Time: 14:53) municipality.

Municipality.

Student: (Refer Time: 14:56).ULBs

Student: (Refer Time: 14:57) municipality.

Municipality.

Student: (Refer Time: 14:59).

Anybody else? Municipality is planning.

Student: Panchayath.

Student: Panchayath.

Panchayath is planning? Group c, you have any idea who is planning sanitation?

Student: (Refer Time: 15:22).

Exactly.

Student: (Refer Time: 15:24).

Yeah.

Student: (Refer Time: 15:26).

Development authority.

Student: Town Planner.

You are a planner.

Student: No.

Town planners yes, do they plan is the question.

Student: Civil engineers, they will build the infrastructures.

What infrastructure?

Student: (Refer Time: 15:40).

What infrastructure?

Student: Like STP that thing (Refer Time: 15:45) engineering division. So, the city engineer takes care of it.

But then why are these water bodies so unclean if we are doing planning?

Students (Refer Time: 15:53) that is under different department.

Student: Yeah (Refer Time: 15:55).

So, we will talk about this tomorrow, what is a kind of policy and governance that are there and what are the kind of limitations of that. So, keep these questions in mind and you know kind of work on it. Yeah, I think you know, we will be doing this in a major

way tomorrow, but quickly to tell you there are certain global discoursesyou know like SDG you know.

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Like sustainable development goals and things like that which comes through Government of India, International Financial Institutions, there is a state public utility like Kerala Water Authority or Board you know.

So, those are responsible and now according to the current thinking the whole thing should be done by the urban local body which is actually a heavy burden to them, they dont have the capacity whereas, this public utility like Kerala Water Authority have a engineers, but they dont have the mandate to do it in a new decentralized Panchayath Raj you know Nagar Palika kind of a context. Then the problem is that you know this funding actually comes to an SPV, special purpose vehicle through consultants and things get problematic that we will discuss tomorrow .

So, the scope of this is that you know we are asking the question, can local academic institutions and NGO's and all help the municipality to plan it? That is the challenge that we are asking. So, this will detail in detail, we will kind of discuss it tomorrow.