Sustainable and Affordable Sanitation Solutions for Small Towns
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Lecture – 04
Need for Participatory Planning

So, beyond the debate on centralized and decentralized, I think we do not have to tell about in what is good or what is bad, let us think about whether things can be done at the local level. So, if you want to plan decentralized systems at the local level these are the elements that you may need.

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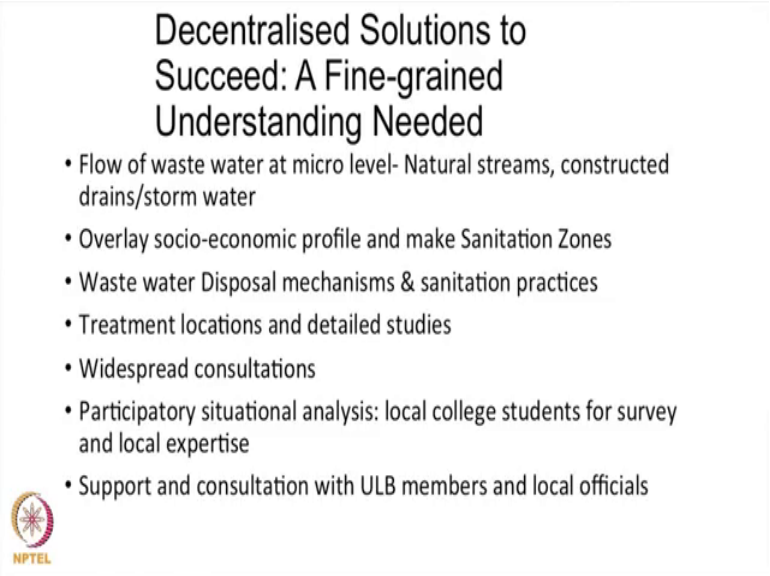

One is you need to understand the flow of wastewater at micro level you know in a European city you have the natural streams we have the sewers that is the storm drainage you know when rain comes and all it has to go through.

And, the third one is sewer that is your waste water these three streams are there, but if you look at Alleppey all this becomes one during rain and that is the problem with all most of our towns. So, first thing is to understand the flow of waste water through a town that is the first challenge. The second challenge is it is not only the waste water you know, if you want to understand who is producing this wastewater? It is a society that is producing the wastewater.

So, we need to understand the socio economic situation in a town, then you will understand that there are slums, there are multi storeyed buildings and then there are you know very sparse settlements, there are commercial areas you know. So, there are different types of settlements within a town, there can be different clusters, there are very elite regions where there where are poor people living.

So, a town is a physically its different, socio economically also its different. So, if you overlay your physical parameters over your socio economic you get something called sanitation zone because the solutions may be very different what you mean, ability to pay for example, willingness to pay, ability to pay all this may be different.

So, you can have; so who is to give you a subsidy, then we do not have to think about a town level we can easily tell that this is the wards that should get this subsidy or within this wards these are the households that should get subsidy. So, that is the beauty of getting into a socio economic survey to understand the physical (characteristics). Then what could be the technologies that are needed for these different types of waste producers from a household level to a community level to an industry or you know to a multi storeyed, what is the kind of technology that you need.

And then which are the treatment locations you know, that I will come to that. Then you need widespread consultations, because how can you take a decision as a kind of an academic body you know you need urban local body members, you need local politicians, you need NGOs, you know resident associations all this may be needed. So, you need a participatory situational analysis. So, who will do that? We will say that civil society will do it. But who is the civil society? It may be an I do not see any civil society here we are all civil, but there is no society.

So, what we are trying to do is to make academic institutions a new civil society and you do not have a readymade citizen as in Europe who will actually kind of tell that these are my rights and because from French revolution, there is a 200 years of democratization thats happened in those societies. So, we may not have readymade citizens here, but we have very educated minority which are in these academic institutions, which got this huge huge kind of a blessing to get into tertiary education and who has to be made responsible, because you belong to 4 percent, 5 percent of this big country.

So, those can be citizens, at least those people has to be citizens because, at the end of the day even if you are paying you know, you are being publicly funded in many ways. So, you have the responsibility also to be citizens. So, can we make a student citizen is the question, who can analyze problems at the local level and who can demand issues also. So, then our model starts with finding out an engineering college, an arts and science college in the locality who can then do this analysis of the citizen which needs then consultation with ULB and things like that.

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So, we started with two towns, we started with Alibag as a town. Alibag in Maharashtra and Nedumangad in Kerala these are the two initial towns where this started with. We collected secondary data about demography urban finance there was this Maharashtra. What is MSNA? Paresh Maharashtra.

Student: Sujal Nirmal Abhiyan.

Sujal Nirmal Abhiyan \which had a lot of data and then we had participated appraisal, we involved our local colleges they collected primary data and continued conversation with the ULB personnel. We had a questionnaire survey about domestic water sources of sources, usage, access, grey and black water generation and disposal methods; these were part of our questionnaire. We had discussions with interviews, we had drain maps made let us see what those are.

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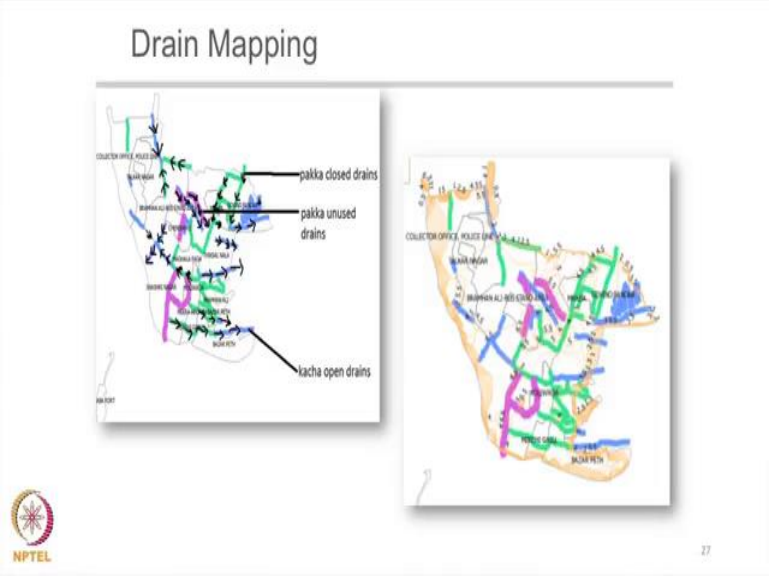

So, this is the drain mapping, this is the first level. So, first we look at flows. So, it could be; so a watershed everybody knows a watershed. A watershed actually tells about the kind of flow of water natural streams and the watershed is a unit where the water gets out through one point. So, if you look at the you know kind of map, all the catchment of this you know kind of you know, the let out point you get, that is called a watershed. So, watershed is a natural unit in a sloppy terrain.

But then waste water also flows through that for which we construct drains. So, it can be; it can be sewers or it can be storm water drains. So, if map these drains also then what we get is something called a waste watershed; so, it is watersheds and waste water also flowing in. So, together it becomes a complete flow of waste watersheds. So, that is the first level of a physical boundary that we are trying to do which actually gives us some polygons where water is kind of flowing. So, these are physical units that we have.

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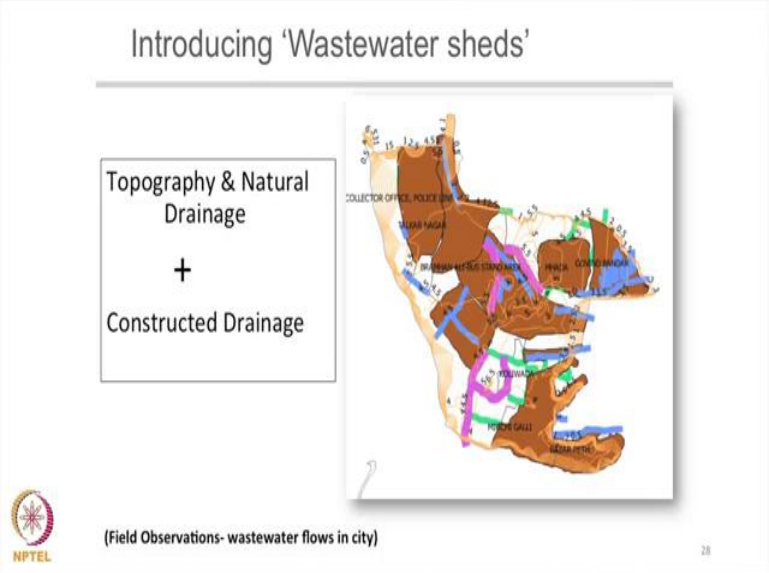

So, its topography, natural drainage, constructed drainage and this gives us a waste watershed and then comes.

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Something called sanitation zones. So, we overlay the socio economic details and then we get a sanitation zone. So, for example these are the kind of coastal pockets where you know there were mostly Koli fishermen who were actually a kind of there and this zone was mostly government buildings. So, it was sparsely occupied and things like that and

these where the multi storeyed and you know things. So, you have certain kinds of zones over these physical boundaries when you look at the socio economic also.

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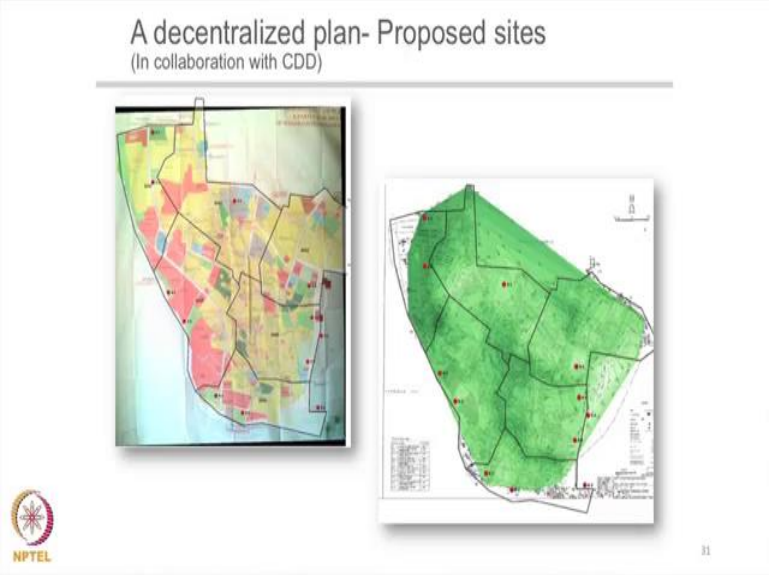

And then if you look at this, you know we can see that there are kind of natural drainage points also here. So, we found that you know actually the Alibag water comes into either ponds or wetlands at the end of the drain you have those things. So, can we make you know kind of systems there and can we make better systems from the households? That is the question that we asked. So, these are the treatment locations we identified which could actually be the kind of you know decentralized locations, but you need to kind of make the house household systems also.

So, what are the challenges? One integrating the spatial and socio economic data; so, one there is a physical boundary of a watershed, then there is a political boundary of a ward; ward or district and you know. So, there could be mismatch between these two, so how do you make planning. Then you know exact volume of water is tough in India we have various sources, especially how do you compute ground water you have water authority public utility water coming in, but then you complement that with ground water also you know. So, that is one major challenge.

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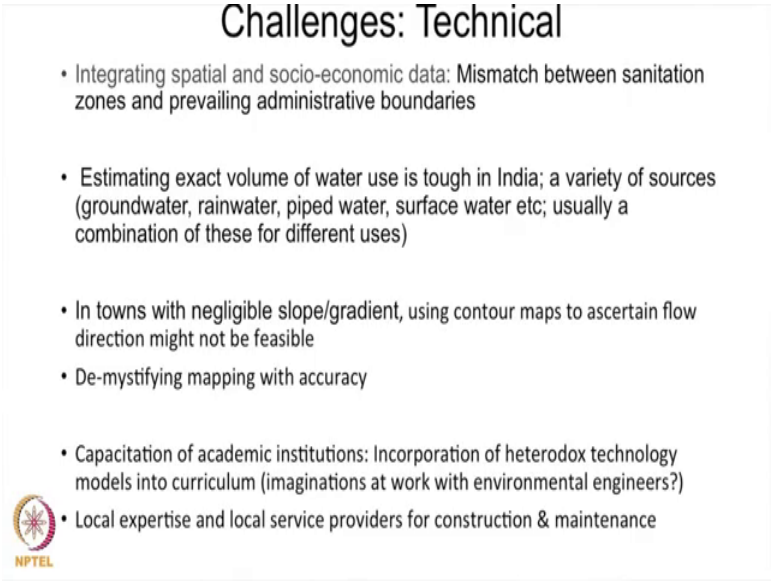

Then it slopes with negligible gradient like Alleppey, how do you develop a watershed? So, we here we develop something called canal sheds which I will come to you later. Then demystifying mapping with accuracy that also I will tell you how we did it, you know we identify you know we had some tricks to kind of do that and then capacitation of academic institutions. Incorporation of heterodox technology models in curriculum, you know which actually is the next step that we are trying to do otherwise environmental engineering has only very conventional technologies in hand.

So, local expertise local service producers or construction maintenance you know these could be the kind of challenges that we have. Institutional challenges you know if its one STP it can be regulated very easily, but if it is you know kind of 1000 units, who is going to regulate it? And how do you kind of ensure compliance?

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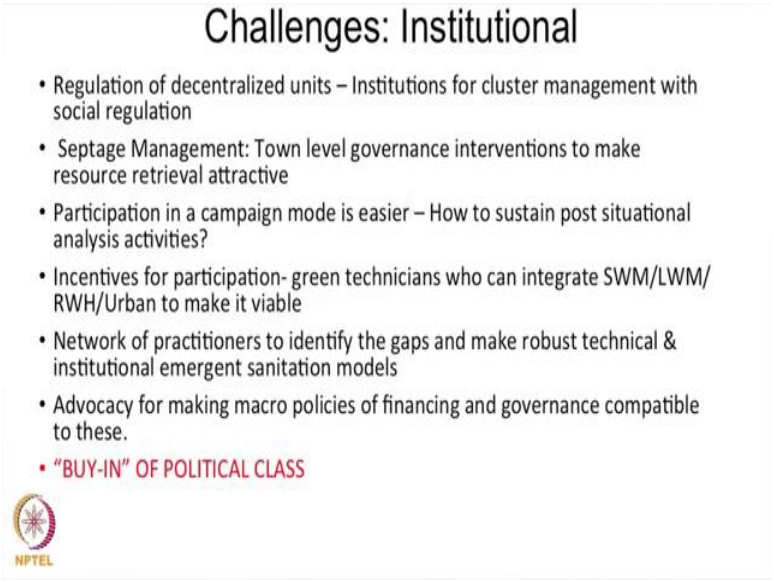

Septage management you know then participation in campaign mode is very easy we found that you know 300 people could be brought together for a campaign of a summer school, but then how do you make it into a plan into a programmatic thing there we needed our nine dear planners who are actually helping us. It needs a lot of motivation, it needs a lot of patience to kind of get to that stage.

Yeah I think this all this will tell you know the one thing is you know how can you make green technicians, there could be a thousand biogas plants, we will say that its a big burden, but at another level this may be ten jobs of maintenance of those things which are actually green jobs in a in a in an economy which is growing without jobs this could be possibilities. So, this is the major problem buy in of the political class, fortunately in Alleppey we got that.

So, that is why after the two towns two small towns we came to Alleppey because we had the political buy in here and then the story is a different story.

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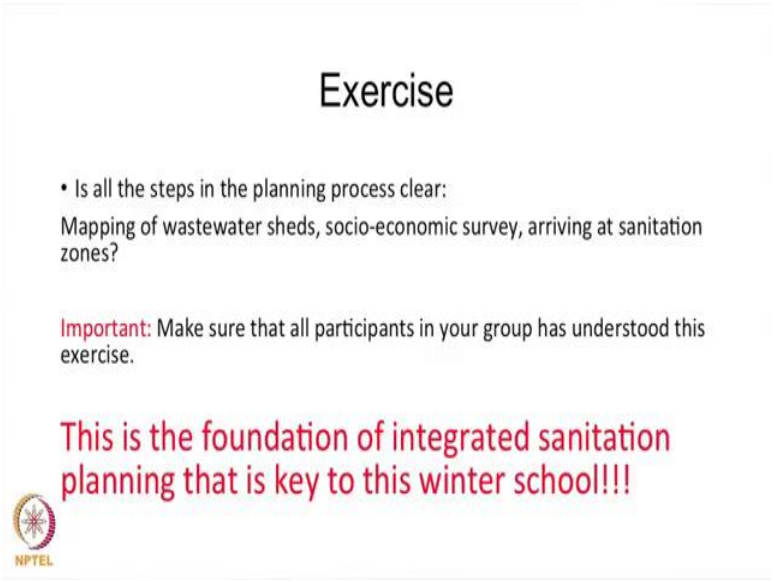

Yeah this is the exercise one is you know is all the is all the steps in planning process clear: mapping a waste watershed, socio economic survey, arriving at sanitation zones? No, problem if it is clear also because this is what we are going to do in the rest of the days, these three aspects keep it in mind how is you know, how did how did we map the physical, how did we map the socio economic and how did we arrive at you know zones zoning that is the first thing. Important: make sure that all participants in the groups has understood this exercise please discuss among yourself today itself whether this is clear these steps.

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This is the foundation of integrated sanitation planning that is key to this winter school you know. So, this is our experience from winter school 2017 to winter school 2018, what we have done.

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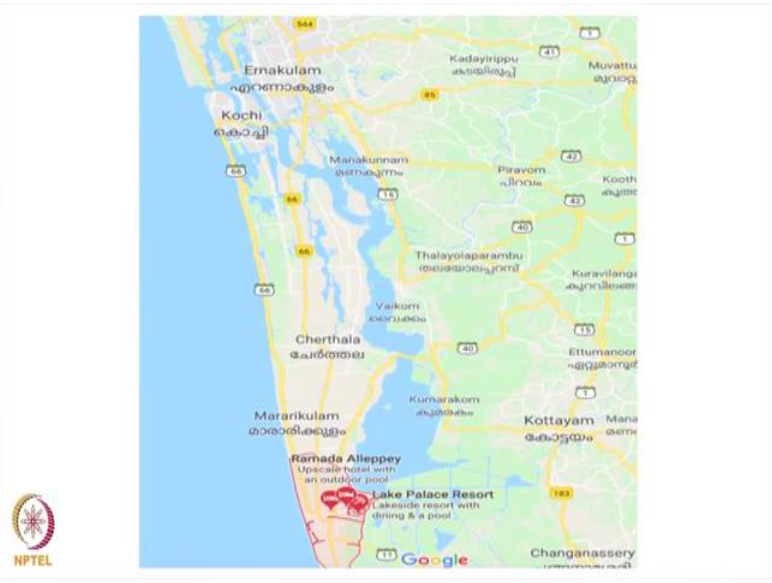

And Allepey as all of you know is in south of Cochin and it is you know it is actually a narrow strip of land between the Arabian sea and the Vembanad lake and in the Vembanad lake we have four major rivers draining into the Vembanad lake. Vembanad lake you can actually see from here if you go into the terrace and then on the other side is the is the sea Arabian sea and it is a 3 to 4 kilometer stretch of you know land is where we have it here.

You know because of these four rivers which came to Vembanad lake and there was a very vibrant port here. So, in 1759 this port and Alleppey town was developed as a one of the first you know planned towns you can see the square roads and the big you know. So, this is the canal in front is one of these canals that we have. So, these two major canals connect Vembanad lake to the Arabian sea and this is because this way spices used to come through these rivers and for the transportation of that to the ports that is why these canals were made.

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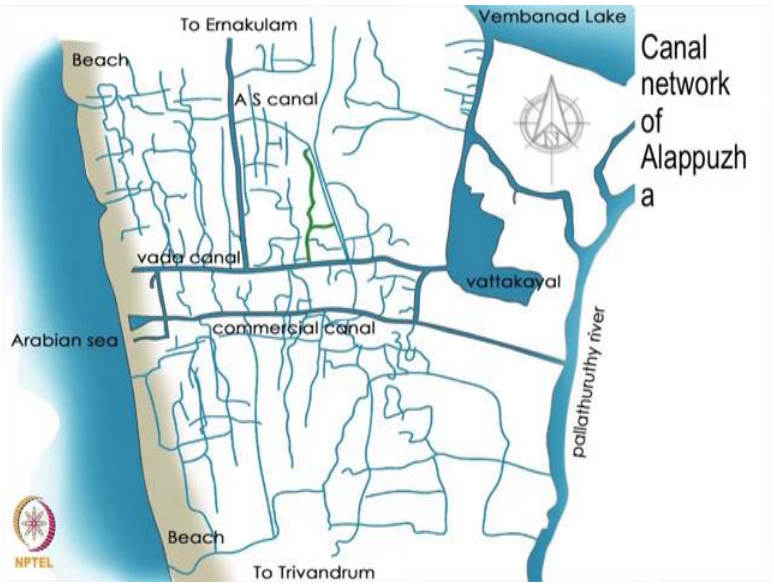

And then we added a intricate network of canals to kind of you know because it is a wholly it is a wetland. So, to drain it off we had a network of canals which actually drains into the major canals and then. So, this is twinpurpose one was the drainage second was it was the hub of transportation, people use it for you know bathing, washing all the you know, kind of water needs other than drinking people used to kind of have it from this lakes this canals.