Sustainable and Affordable Sanitation Solutions for Small Towns
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Lecture – 02
Overview of Sanitation in the country

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So, in a sanitation so, let us comeback to it the definition. So, its typically provision of toilets that is actually provision of toilets public community or individual sweeping solid waste management and this is managed by urban local bodies, slum development boards and Swachh Bharat Abhiyan is the major thing in this paradigm. So, this is one aspect of sanitation understanding, where municipalities traditionally understand this as such where there is no sewage here its only provision of toilets and that is what Swachh Bharat Abhiyan is doing.

So, it is a kind of first level where what we called as you know Open Defecation Free ODF that is the kind of new jargon where here to make every town ODF open defecation free. So, provision of toilets. Then the next one is what we have discussed now a centralized waste water management system that is another addition to this that is a next level.

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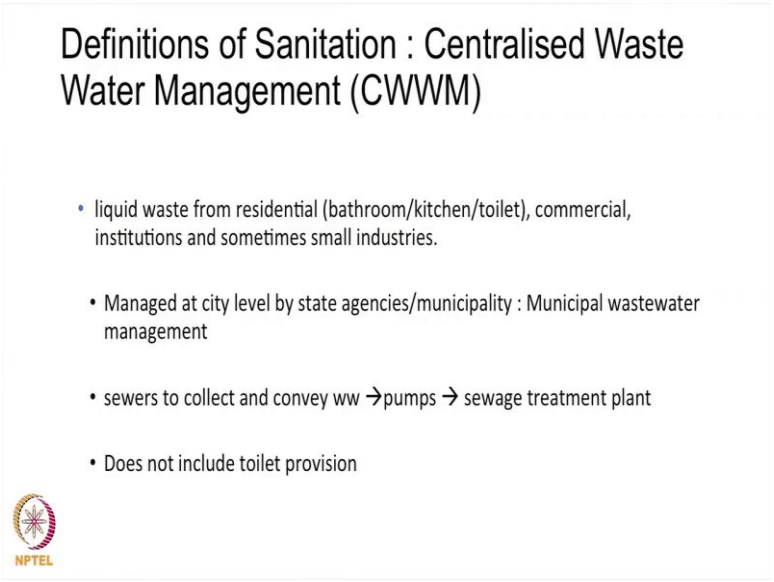

Where you have liquid waste management from traditional, residential, commercial institutions and sometimes small industries, that will come there. Then its managed at city level by the municipality. So, it is basically municipal waste water management and then you have sewers to collect it then you have kind of pumping stations which will then get into sewerage treatment plants and then it does not include toilet provision, because this is much more of a centralized kind of a vision about sanitation.

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And then there is a third vision which came in National Urban Sanitation Policy which came in 2008 where national servant they actually kind of you know expand the scope of the sanitation definition as one human excreta management toilet provision collection conveyance, treatment and disposal. So, first time they told about a chain a waste chain where from generation to disposal and treatment, second it included health because the ultimate outcome of sanitation is public health. So, that was included in this then there is this environment; environment protection became an agenda within sanitation solid waste management was brought in even water supply. So, all this are included in what we call as sustainable development goals by the United Nations we have you know several of them.

And sustainable development goal 6 is Water and sanitation. So, our national urban sanitation policy actually kind of recognizes all this. So, now, it is a much more of an integrated understanding of sanitation. So, our understanding of sanitation will also be that otherwise Swachh Bharat Abhiyan tells about provision of toilets, and then the conventional understanding is centralized approach, but this we say that these are the outcomes that we need then, what do we plan is the question that we have, clear?

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So, if we understood what is sanitation, the next question is there is a huge disparity in sanitation. One what is a disparity, second what is the cause of that disparity both this we have to understand.

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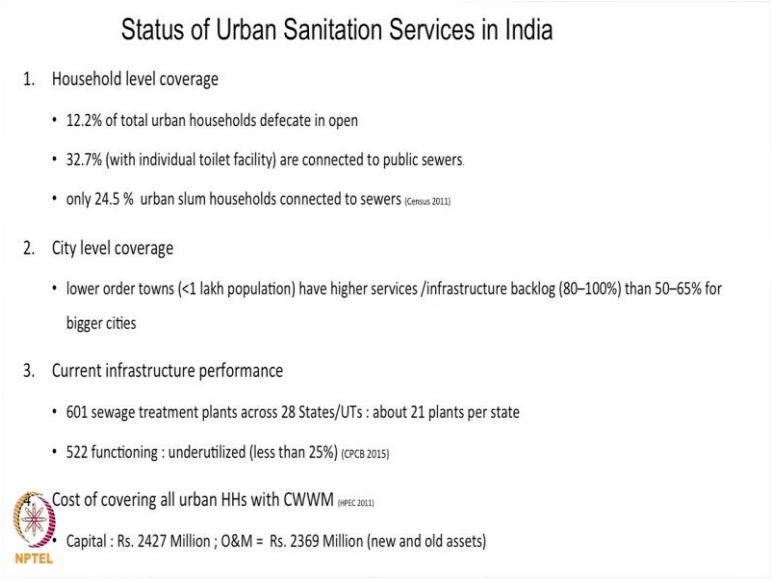

So, these are some statistics that you can read one 12.2 percent of the total urban households defecate in the open still urban households, rural is much more. Second 32.7 percent with individual toilet facility are connected to the public sewers. So, only less than 33 percent of the toilets are connected to sewers rest of the 67 percent where does it go is a question are this all contained. Then only 25 percent of the urban slum households are connected to sewer. So, much less percentage of the marginal households are connected that is one.

Then city level coverage- lower order towns you know that is less than a lakh of population, have higher service infrastructure backing like 80 to 100 percent. So, depends on the size of the city bigger the city, there is more scope for provision when you get into metro cities there in the coverage is much much better. So, then tomorrow I think you know Neelam and I will be taking about policy and governance. Our study shows that almost 70 percent of the big central government infrastructure like JNNURM you know those kinds of big programs have come to 5 big metropolitan cities.

So, even with that you know we even with the kind of provision that we have small cities may not kind of you know and within the small cities urban slums and you know marginal places may not get covered. Compared to the infrastructure performance, like sewerage treatment plants we found that you know out of the 601 sewerage treatment plants across 268 states, we have about 21 plants we have and then 522 is functioning

underutilized. So, its kind of less than 25 percent is the kind of you know the performance of those systems. So, even if you have an STP it may be not optimally performing. So, that is another problem with this. Then there is a high capital cost ,operation management cost for STPs, we will come to that later. So, why this disparity then, we have to go back to our colonial legacy you know.

So, we found that you know there are epidemics like you know cholera and all are there. So, in industrial revolution times itself they understood that. So, when they came here they put infrastructure in towns, but where is that? It is in cantonments and where British people used to live. So, there will be a islands of you know good sanitation with ocean of problem. See if you go to any old city you can see this you go to south Bombay Colaba and all very nice systems outside that there is nothing, Kanpur- cantonment you know. So, so everywhere you go you have an old city where the British have kind of made all this and so, that is the first level of disparity.

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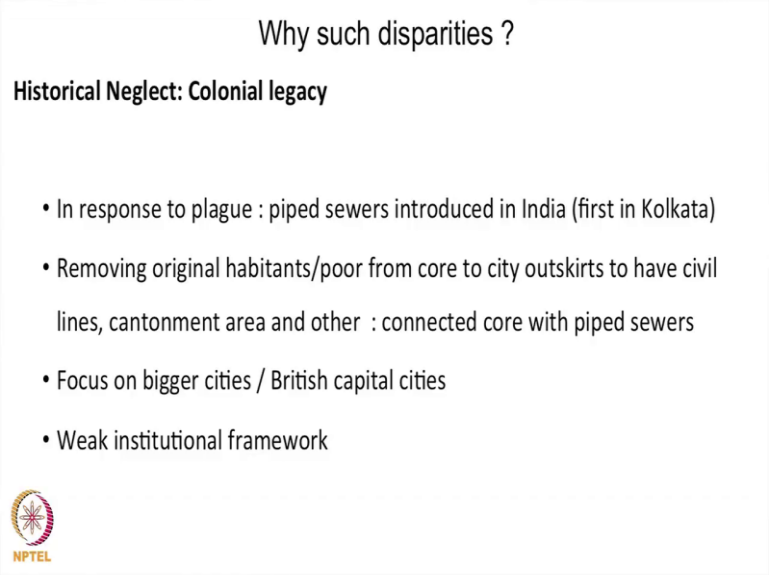

And then and then we have you know focus on bigger cities which we found about and there is a weak institutional framework which actually does not allow this. The post colonial state also it was still the same thing you know high priority was given to what we call as the nationally important cities, which they later became you know state capitals or you know metropolitan cities, commercial hubs you know all this where given much more thing and smaller towns figured very late in planning.

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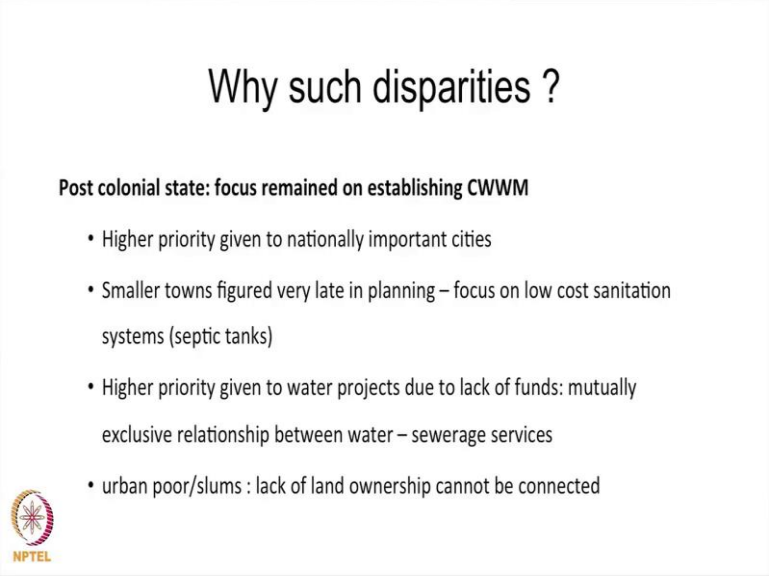

So, very low cost sanitation systems were given. So, in slums you will give toilets or you know you will give kind of you know provision for septic tanks you know. So, it never went to that and who suffered in this in the town is the urban poor and slum like settlements.

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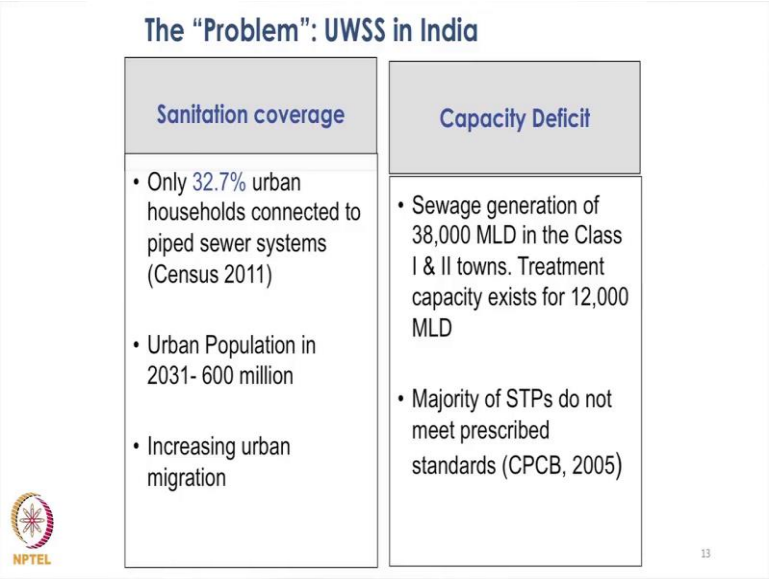

So, this is again the problem of urban sanitation, one - 33 percent of the urban households are covered and then urban population is increasing. Now, it is actually kind of you know by 2031 its projected that 600 million will come to Indian cities because of

migration and all are happening and so, the generation is 38000 milliliters per day and the treatment capacity is only 12000 so; that means, we have only one third capacity and as is so, majority of the STPs are working not optimally.

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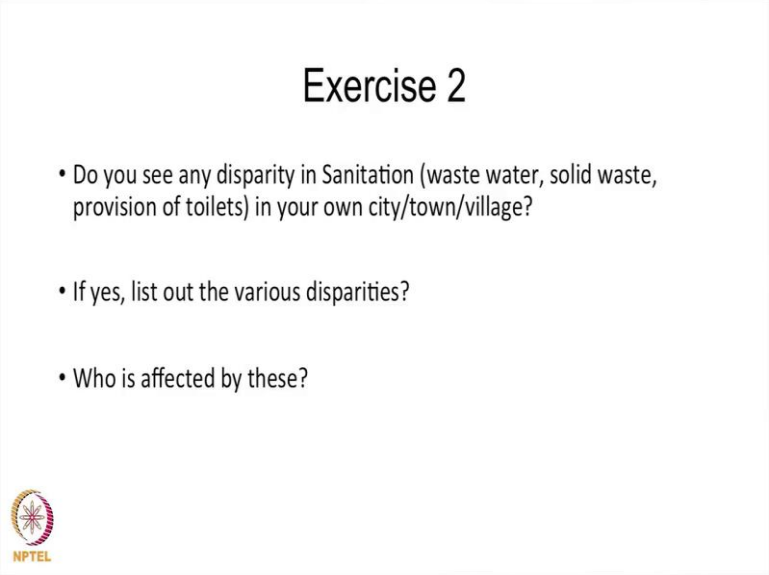

So, this is the second exercise which we do not have to spend much time, what we are asking is do you see any disparity in sanitation, waste water, solid waste provision of toilets in your own city town or village? If yes, list out the various disparities, who is affected by this. It is not a dramatic question, isnt it. So, you can just reflect on this we do not have do that exercise. Just think about you know, what is the kind of, you know in your own city, how do you see a city, a city is not one city, a city is a very fragmented entity. That is what we, one of our major principles is that you know, how to see a city.

So, we can have different types of services at different locations of you can just reflect on your city, you can easily tell who gets you know the kind of the services best, who is actually kind of, you know who does not get these kinds of services you know. So, reflect on that then. So, that is the second level. First level is we told about the sanitation crisis in India, second we are talking about an element of it, which is disparity. So, these has to be simultaneously addressed by any technology or policy options.

So, now, I am going to show you a third one because we talked about liquid waste management from you know, what we do as a technology in households or in institutions and then we also talked about solid waste management, how is it being done. In all non

sewerage cities you have a septic tank that is where its contained you know. So, safe containment is within a septic tank or a leach pit. A leach pit can be a twin leach pit or a single leach pit, which then may have a contamination danger also if you have a leach pit and not a completely contained system you know.

So, both this need some kind of you know, cleaning up in every 2 years or 3 years depending on the size of the containment unit. So, have you ever thought about where it is going? Because many of the cities does not have sewerage treatment plants or FSTP as our Kashmiri friend was telling in his own city he has one and so, faecal sludge treatment plant if that is not ther,e what happens is what you are seeing there. So, this is a photograph this a video that we could take in the Alibag city in Maharashtra.

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So, this is clearly flowing into a drain and you can watch where the drain is and it then goes to you know, it goes to actually the sea because this is a coastal city and then you know you can see that you know, there are marginal people also living there, because this is next to a solid waste dump which belongs to the municipality, that is why they can freely dump it there. So, it is not only an environmental issue, it actually affects the poor. So, again think about the disparity again in your own cities, who is living in the waste dumps, around the waste dumps. Where ever our waste water is flowing through, who is living there.

If we can go to Alleppy you can see it is the coastal population and they do not have private property rights also. Especially fisherman community does not have private property rights in the beaches and ultimately this actually reaches there. So, I think that is one of the major another point in this. So, it is simultaneously an environmental issue and a social issue where the poor people gets affected by pollution, even in alleppy we will see how it how it gets manifested.