

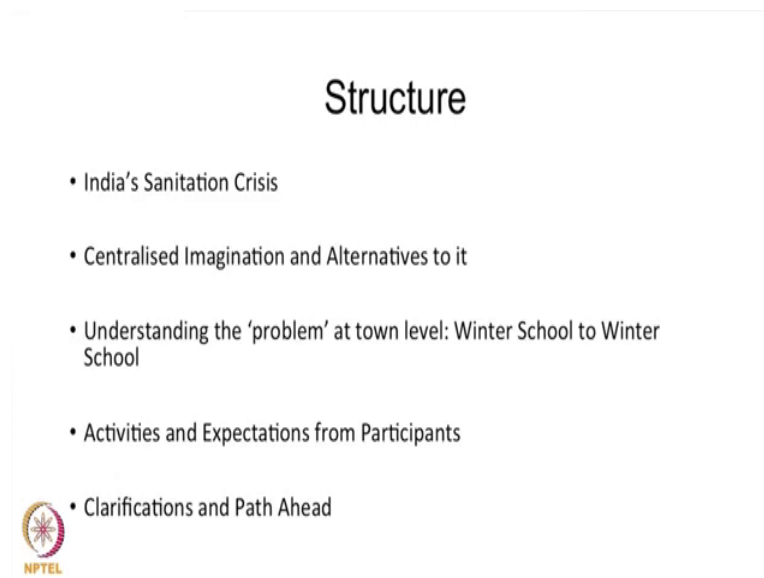
Sustainable and Affordable Sanitation Solutions for Small Towns
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Lecture - 01
Introduction to the Issue of Sanitation

So, this is the Introductory session, we will be explaining, what the concept is, what the project is and you know how we want to move about into it. So, I think you know these are the building blocks of this whole winter school. So, it is very important that you understand all these things together.

So, what we are going to do is you know we will have very short breaks you know and then we will try to discuss those things inside the group, get back and you know we will, because we want to make sure that you know everybody understands this. And again I am telling this is not for the experts, we have we have even UG students, so we want to bring everybody to the same page.

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So, this is the structure of today's presentation where we have, we will start with what is the India sanitation crisis, which actually is our motivation to kind of look at, you know why we should intervene. We will then look at what is the kind of sanitation imagination at the policy level, at the technology level, what is the current imagination to kind of address this in their sanitation crisis; that is the second part.

And then the third part is, you know once we understood that we found that you know actually centralized ~~the imagine if there~~ *imagination* is a problem. We have to come down to the local level and understand the problem. So, understanding the problem at the town level that is our third you know and important issue that we had to discuss today. Then we will get into the winter school of what we have done and what we are going to do and then we will discuss and clarifications we will have it.

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So, this is a very familiar site that many of you must have seen. You know it is in Bombay, it is in Alibag those two slides are you know belong into that and this means that why India's water bodies are polluted. It is not only because of you know liquid wastes, but solid wastes are also a major problem.

So, regarding water we use, you know any way you use water, 80 percent of that becomes waste water. Your domestic use, your industrial use or agriculture use you know, whatever you water that you use 75 to 80 percent of that becomes waste water and then it comes and deposits in the kind of you know valley portions, you know lowers geomorphic units, in all these *physiographies* (Refer Time:03:01)

So, what we had to do is you know; so, our motivational question that we ask is, should all water bodies in India especially in small towns be polluted? Remain polluted forever. And if you go to any city its the same scene that you are seeing and that is what I told

you know, its now in your generation are you ready to kind of tackle this issue is the question that we are asking.

That is for motivational question for this whole winter school. You know then we have to understand how sanitation as a process actually evolved, as all knowledge systems you know it also evolved in the in Europe and also in United States, because environment engineering and environmental science, you know these are the kind of disciplines that actually kind of deal with this. So, we look at how they see sanitation.

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Five Sanitation “Stages” in the West

1. Locally Managed Sanitation:
 - a. Indifference to Cleanliness
 - b. Reuse in Agriculture
2. Unmanaged Sanitation
3. Industrial Revolution- Mismatch between Supply and Demand – Discovery of Centralized Sanitation
4. Neo-Centralized Sanitation
- 5. Emergent Sanitation :**

(Source: Abeyasuriya, 2010)

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So, in the beginning the first stage we have something called locally managed sanitation. So, in the kind of you know pre industrial revolution towns in Europe, it could be managed at that level itself, that the small cities and you know, as we actually manage in the villages now, you know it will go to a sock pit or something, it may go to a garden and you know and you are, and there was kind of you know there was not much population and all.

And then slowly population began to evolve and then we found that human waste becomes a problem, but then there was a solution also, because agriculture was the main occupation. So, all this waste used to go back to those farms. So, there was a cyclical movement of waste from cities to neighboring towns. That means, there was a readymade demand for this waste, it is not a waste it was a resource, because it was fertilizing the agriculture.

And then comes industrial revolution where, and another the point is that you know people were not actually aware of this also, if we look at the medieval films you will see people are all as dirty you know, they do not kind of, they are not as clean looking as we see in the Hollywood pictures now. So, there was indifference to kind of sanitation also.

So, because of this it was not a major issue, and then comes industrial revolution where you know industrialization happens in cities and technology develops; like steam engines and develop. So, huge production systems develop in cities which actually demands a lot of labor and all this labor comes to cities.

So, cities you know kind of grow and grow and grow and this actually kind of encompasses villages also, cities expand to villages. There is a lot of waste that is being produced in cities and agriculture can no longer take it, because there is a huge transportation all these things are needed, so cities became very filthy. And then you have huge epidemics in the kind of you know, the early industrial revolution Europe you had many epidemics like plague and cholera and all which are all because of the lack of waste management.

So, then becomes a major issue a technological response comes in that is what we have seen now as Sewerage Treatment Plants, we will call it STPs where there are huge plants which can actually treat this water, but these plants are never in cities, it may be in the periphery of cities.

So, to make the ways there we have another technology called hydraulic transporter waste, that was also discovered that we can actually flush out this wastes, we can flush the water and then this water can be pumped through sewers it gets into a sewerage treatment plant, it gets kind of treated there. So, this was the kind of you know treatment system that developed in the west in industrial revolution times.

This is also because the demand for fertilizers also, demand for this waste came down by 1840s chemical fertilizers were discovered. So, the mutuality that we had earlier reduced. So, demand is decreasing you know supply is increasing that is where this new technological revolution comes in and this actually kind of cleaned up European cities in a major way and this became the imagination of everybody.

So, environment engineering as a discipline sees this as the kind of major solution to the problems, which is actually rightly so. But imagine this evolved during a particular time in the history of Europe and European societies and then it got transplanted to all over the world, how?

Student: Colonization.

Ah.

Student: Colonization.

Exactly, so colonization actually because European, those small western European nations a few of them actually kind of colonize the whole world at the time, you know from 17th century onwards you know this became a major thing. So, all their knowledge systems got transplanted to colonies also, but it was not a straightforward you know kind of shift also that we will tell, you know what how we will say that when there is a sanitation divide that happened when this transport of this happened, but before that we need to get into some definitions you know.

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So, what do you mean by sanitation? So, that is one thing that we will look at. What does it cover and how is it managed in your city? I think you know this is the first exercise that we can do, you know. So, if you can quickly discuss this you know one what is

sanitation and the second question is what does it cover, that meaning of sanitation and the third one is how is it managed in your city.

So, you can be reflect on that, because you know why we are doing this is, there is a lot of resources within the group; otherwise it will be a boring lecture from my side. So, let us kind of you know quickly just turn and now we know do not write in the chart papers and all, somebody quickly note down and then kind of present to us.