

**Infrastructure Planning and Management
Indian Institute of Technology, Madras
Urban and Rural Infrastructure Part 1A**

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Student 1: So as I told in the first class that the infrastructure is the backbone of an economy and we know that urban infrastructure consists of the infrastructure in the urban area which is crucial for the development of of economy.

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Need for Urban Infrastructure in India



- Population growth in Urban areas
- Lack of wastewater treatment
- Improper Waste Management system
- Demand for daily basic needs are much higher than supply
- Economic development and prosperity
- Infrastructure contributes to only 8% of the India's GDP

920 Million People Being Added to Urban India By 2050

Source: WRI

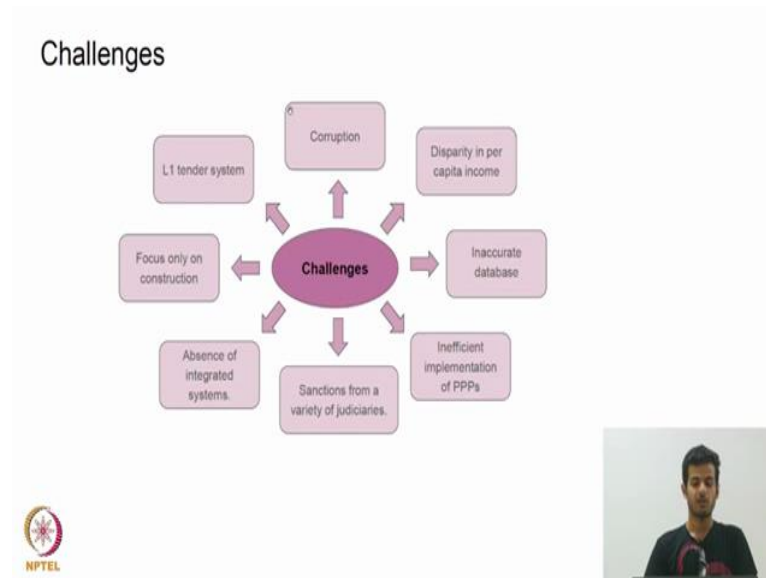
Year	Urban Population (%)
2006	28%
2050	75%

Source: www.nbmcw.com



So in this, why do we need urban infrastructure in India? So the population growth in urban area has been increasing exponentially, for that we need to accommodate everyone, we need to take care of their housing, their livelihood and then their basic needs. But as we know we are not going up to the mark and there are few things like lack of waste water treatment and improper waste management system, both of which have been in place in the urban areas but still, we are able to recover only 20 percent of the waste water or even waste management. Regarding waste management. So there are landfills in the major cities but still they are just over full and on the verge of being collapsed.

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Now why are you not able to do this thing? So the first and foremost thing is a disparity in per capita income which is a major cause why people are not able to pay taxes and all or inaccurate data base, we don't have the proper database of what is there and what is not, so we are not able to analyse things for properly. Whereas the implementation of PPP's, we want public private partnerships to happen what we do not have, the proper guidelines or the contracts in place for them or even if we have, then they are not being able to implement properly. Now the absence of integrate systems like various govern governing bodies or private bodies, or even in government bodies, we have at centre, a state and then a district level but they are not integrated as such and in infrastructure we are too much focus on the construction and not the maintenance part. We should be major part of it as the construction part goes on till 3 or 4 years but the maintenance and it will serve the public for next 20 to 25 years.

There is, next L1 tender system. So what happens at the tendering system is, the government allocates the project to the one who bids the lowest. They do not consider, they usually do not consider the fact that the one who is charging higher may be bringing a better technology or something like that. And for the lowest price, even if he comes and bids the project at the lowest price but we would not be able to get the worth of the price and then the corruption, even if the budget is sanctioned most of it never reaches to where it should belong.

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Government Schemes (Urban)

Smart Cities	Aims to develop an integrated infrastructure system in the selected 100 cities
HRIDAY	Revitalisation of 12 heritage cities to improve tourist conveniences, roads, footpaths etc.
AMRUT	Around 500 cities are selected to improve water supply, sewerage facilities, storm water drains, non-motorized transportation facilities etc.
Swachh Bharat Mission	To make and maintain the cities clean and to provide basic needs of sanitation.
PMAY (Prime Minister Awas Yojana)	Improved version of Rajiv Awas Yojana with inclusion of MIG also
Deendayal Antyodaya Yojana	To reduce poverty and vulnerability of the urban poor households by enabling them to access gainful self-employment





Now for government schemes like I will ask my friend Arvind to come and deliver it.

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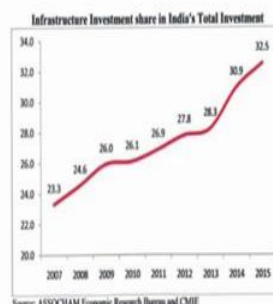
Student 2: So talking about the government schemes specially in the urban department, these schemes are actually monitored by Ministry of Housing and Urban Affairs and it is some kind of subsidy institutions like HUDCO which stands for Housing and Urban Development Corporation. So what the procedure that they have been following, they are following three types strategy. And the lower strategy they look after the basic needs of human beings and settlements like poverty skill development for this people and self employment etc and also housing. So the schemes like Prime Minister Awas Yojana and Deendayal Yojana actually

comes under these type. In past Swachh Bharat Yojana also come under this and depends upon the conditions of the cities. And if you quote a second tier, these cities will, would have been fulfil all the these three schemes and for second tier the schemes that have been put up is AMRUT, that is Atal Mission for Rejuvenation and Urban Transformation. And in this scheme they have selected 500 cities and this is to improve the water supply, sewerage facilities and storm water drains and also some non-motorized and footpath and etc, that transportation is also being taking care of by AMRUT. And the further town class cities which have all the facilities of the second tier and third tier, the schemes that put up is the smart city. Actually there is no universal definition for smart city but it is a integration approach that will have from lower tier to higher tier every facilities should be there. And HRIDAY is another government scheme in which they focused on the heritage cities and the development of the households and localities nearby in everything with having a name of getting revenue from the tourism also.

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Recent Statistics

- 70.6 % of total population is connected with water supply.
- Less than 20% road networks have storm water drains.
- Only 30% of sewage is treated in top class cities.
- Public transport constitutes only 27% of the urban transport.
- Total investment of Rs. 39.2 trillion is proposed.



And to have some reality checks, these are the diagrams from the twelve five year plan, I think so from 2012 to 2017 and after 2017 what we have achieved is like 70.6 percent of the total population has been connected with a proper water supply and about the storm water drains that we mention in the AMRUT, only 20 percent of the road networks are they have this facility and about the sewage, around 30 percent is already treated.

And the remaining other main point is that still in the public transport constitutes are only about 30 percent of the total transport like the private road, private transportation roads here

also. And they have been they had a name of investment of around 40 trillion Indian rupees by this 5 year plan, they have all they wanted to invest in the urban infrastructure itself. But the reality check, they have been, they could not find any credible resource we say how much they have been put up in that this 5 year plan, how much they have invested actually. And this should be taken by Divya.

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The slide is titled "Some Urban Infrastructure Projects in India". It contains four main sections, each with an image and a text description:

- Hyderabad metro project:** World's largest project under PPP in the sector. The image shows a modern metro train in a tunnel.
- Yamuna expressway:** 165 Km is India's longest six-lane expressway. The image shows a wide, multi-lane highway.
- GIFT City, Gujarat:** worth Rs.600000 crores is expected to host offices of international organisations like IMF, UNICEF etc. The image shows a futuristic cityscape with tall buildings.
- BRTS of Ahmedabad:** is a planned commuting system with reduced emissions and improved air quality. The image shows a person riding a bus.

At the bottom left of the slide is the NPTEL logo. At the bottom right, there is a small video inset showing a woman in a pink shirt speaking.

Student 3: So I am going to talk about the certain milestones that urban infrastructure projects have achieved in India. So the first one is Hyderabad metro project, so once it is completed it will be the world's largest project under PPP sector. And it covers around 72 Kms of length in three different carriage ways. So there is another Delhi metro and it is one of the most eco friendly and also disable friendly places in India. So it has a braille script buttons and indications. Then another is Yamuna expressway, so it connects new Delhi with Agra and it has around 165 Km length and it is longest six lane expressway. So now Delhi to Agra the journey takes around 2 hours. So another is Gift city. It is a finance hub and it is aimed at creating around 10 lakh jobs in the next ten years.

So the other is Bus Rapid Transport System so plans are made for around 20 or 25 cities for developing this transit system in order to reduce the 2 wheeler or 4 wheeler traffic.

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The next I am going to talk about rural infrastructure

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So rural economy is, it basically consist of agriculture and self employment and some small scale industries services and construction. So the population of rural sector is around 68 percent but the land that covers rural area is around 90 percent of the total India's land. Also, the services that are provided by rural sector are, for Fast Moving Consumer Goods (FMCG), if we consider one third of FMCG sales are covered by the rural market. So in order to reduce the migration of people into congested cities, 90 percent of India's land is rural but only 68

percent of their total population lives in rural area. So in order to reduce the migration it is very important to develop certain schemes to develop infrastructure. Thank you!

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RURAL INFRASTRUCTURE- HISTORY

- The First Five Year Plan recognised the need to develop rural infrastructure to accelerate the economy
- Creation of Rural Infrastructure Development Fund (RIDF) to improve basic infrastructure in rural areas
- The Accelerated Irrigation Benefit Program was launched to expedite ongoing irrigation/multi-purpose projects
- Bharat Nirman scheme was aimed at creation of irrigation potential of 10 million hectares
- The Rajiv Gandhi Grameen Vidyutikaran Yojna (RGGVY), a scheme for rural electricity infrastructure and household electrification was launched in 2005-06 to achieve the objective of providing access to electricity to all rural households over a period of four years



Student 4: So let us talk about the history of rural infrastructure in India. So the very first 5 year plan had recognised the need to develop rural infrastructure so as to accelerate the economy. Even if you look at the statistics that 68 percent of population only contributes to 15 percent of India's GDP, so that can definitely improve. Then we had a Rural Infrastructure Development Fund that was created to get money for all these to provide at least basic amenities in the rural areas. After that the multiple projects in irrigation, communication and notable achiever scheme was the Rajiv Gandhi Grameen Vidyutikaran Yojana which was to improve the electricity infrastructure in rural areas.

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So when we talk about the challenges faced, we have a few, the first one is the low returns on investment that rural projects have so that and we cannot get private partners. Secondly rural infrastructure generally comes under state governments and among their finances have not been in good shape, so that is a problem. Secondly, we have also seen some level of resistance from local population to projects as well.

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GOVERNMENT SCHEMES (RURAL)

Saubhagya Scheme	To give every household an electricity connection
Gram Swaraj Abhiyan	Spread awareness about pro-poor government schemes and enrol poor people for the same
DISHA	Committee created to monitor the implementation of schemes and programmes
PMAY-G	PMAY-G aims at providing a pucca house, with basic amenities, to all houseless householder and those households living in kutcha and dilapidated house, by 2022
MGNREGA	Enhancing livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in a financial year
PMGSY	Nationwide plan in India to provide good all-weather road connectivity to unconnected villages
Swachh Gram	Scheme to keep villages clean, healthy and beautiful

So here are some of the key schemes that have been started by government: the Saubhagya Scheme which again aims at rural electricity connection by 2022, the Gram Swaraj Abhiyan which is ultimately a public relation (PR) exercise by the government to promote their

schemes and to let more people know about all that plans, the DISHA is a special community committee that has been formed to expedite and monitor the projects and policies for aimed at the poor people, the Pradhan Mantri Awas Yojana Gramin is providing a basic house for every one in the rural areas, the Mahatma Gandhi National MGMREGA is end (sorry for that) but it it is mainly providing employment for at least 100 days and that may also mean that even if someone does not have work he will get wages for hundred days, the Gram Sadak Yojana is to improve connectivity so that farmers or anyone can use it to transfer the goods quickly to the markets. Now this is a Swachh Gram to keep the villages clean, and make them healthy, thank you!

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Professor: Okay thank you, I think good presentation. You guys have a lot of schemes that you have put up and you have also talked a little bit about some of the challenges, although I would argue that the challenges that you put up both what Hasrsh spoke about and Jai Kishan are challenges that are probably pervasive across infrastructure and not necessarily specific only to rural and urban. So what I want to do is talk a little bit about what specific to rural and urban. So are there points that (there you go) some of the other groups had, that were not shown in this presentation that you would like to share? Any key things that we are missing yeah. Remind me of your name again Anand? Shree Anand yeah

Student 1: Sir one of the the major problems with urban infrastructure is the growth of slums

Professor: Okay

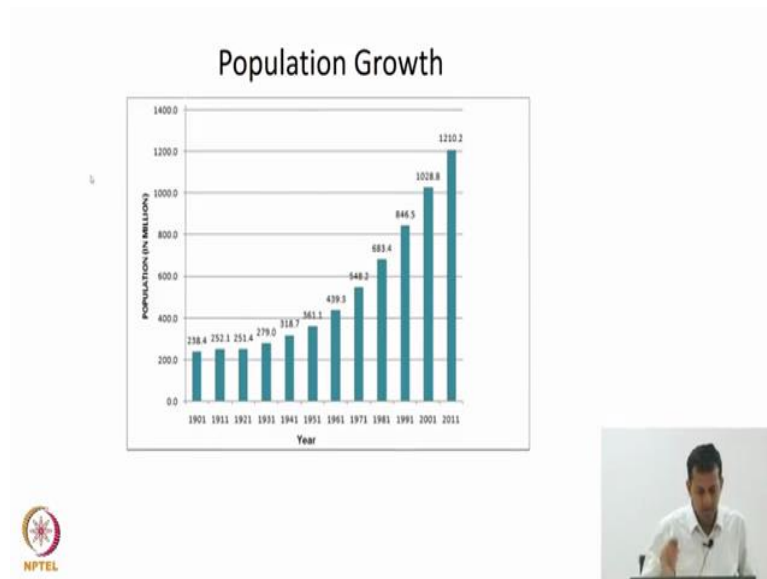
Student 1: To better say that, urban population, half of the Indian population will be living in urban area in the next 10 to 15 years

Professor: Right

Student 1: It is also estimated that half of urban population will be in slums

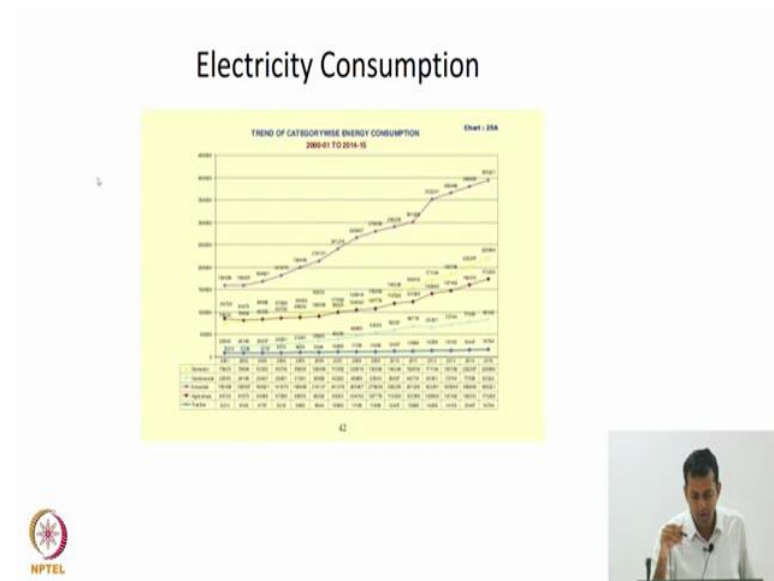
Assistant Professor 5: Yeah so I think,

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So Shree Anand's point relates to this graph which looks at population growth and ofcourse the Indian population growth has been exponential. We are far above a billion at this moment and what is also happening is because of lack of amenities in rural areas, there is a lot of migration from rural to urban centre. So urban cities are ofcourse stressed because they are not able to provide services for people migrating in, as a result of which if you take housing for instance, a lot of slum developments start coming up and this is an issue that we actually have to sort of think about.

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All of our indicators are going up, electricity consumption is going up, like we saw population is going up and so on. So that is an important thing I will sort of touch up on that when we discuss little bit but good point, so the number of slums are increasing and we have to do something about it. Okay so but then your broader point is on how do we get people to participate more in governance. So essentially how do we get more participatory, bottoms up inputs in to governance, rather than the traditional model of, you have elected a series of legislators and they will make decisions for you and the reason that is sort of important is, lot of these issues are local and it becomes very important to have local inputs to resolve those issues and also people that you have elected may not necessarily have the right kinds of technical knowhow etc. I mean, they might be administrators, legislator but not necessarily technical people and so how do you get some of those inputs in. So the broader question you are asking is, how do we get more citizen involvement in government. There are some schemes in the rural area, there are also few in the urban areas as well or NGOs that come together to try to be the voices of the public but again that is an important question.

We will talk about that also a little bit, alright any other key points? Okay so your question is what is capacity building? So generally capacity building implies training for people in various level of government on a variety of issues. So it could be people, it could be elected representatives, it could be people in the Indian administrative service, it could be people who are working in the public works departments, all kind of government servants. Capacity building involves allowing them to get access to or an understanding of what are the new technologies available in housing, water treatment etc. But also more importantly things like

public private partnerships, how do they work, new forms of contracts, financial models, accounting systems. So normally most of these schemes has a small budget that is kept aside, kept aside in order to train people so that they can function more effectively because in the Indian system primarily you graduate from college when you are 21 or whatever you get into the services. Then the question is where do you continue to learn so that is where the capacity building comes in somebody Nandish had a point.

So government set some market places to eliminate the middle man or you have people like you know ITC, used to have this E-CHOUPAL system where essentially you provide better telecommunication infrastructure, develop applications where people can understand much better what the price in the market is and all of that so you can sell directly without having to go through middle men. So that sometimes is not necessarily something that government has to do, that something if you enable market forces can actually take over private entrepreneurs are looking for an opportunity, Harsh. (student name)

Yeah so there is adopt a village, there is also you know corporate sometimes adopts small areas and they try to do something with them and all those are are good but the question is, how systemic are they?