

Infrastructure Economics
Department of Social Sciences
Prof. Nalin Bharti
Indian Institute of Technology Madras

Module – 08
Lecture - 32
Economic Issues in Infrastructure Development

(Refer Slide Time: 00:11)



WHAT IS AN ECONOMIC ISSUE?

- An economic issue is basically the problem of choice, that arises because of scarcity of resources and clash between the utility-maximization behaviour of different parties involved
- Economic issue arises the moment problem of choice arises
- Economic issues are directly related with the development of the people

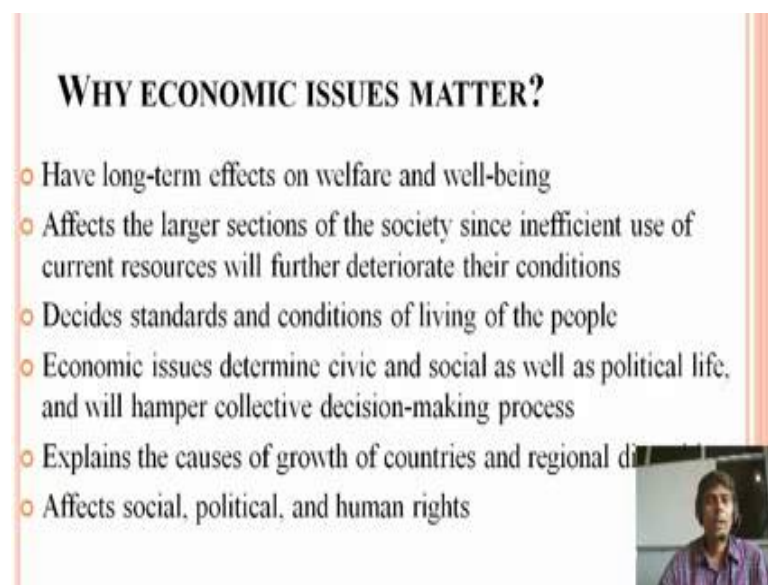


The general meanings of economic issues are basically the problems of choice that arises because of the scarcity of resources and the clash between the utility maximization behaviour of different parties involved. So, when we say different parties involved, we can see here that infrastructures are developed and one side is the developer and another side is the subscribers. When we say the clash between the utility maximization behaviour of different parties, it is a clash between the developer of the infrastructure and at the same time different subscribers, also the partners of developing such infrastructures like the government.

In many PPP cases, public private partnership cases it is not only the private parties, but also the local bodies or the state government or the central government, which involves the development of the infrastructure in a particular city or in the state. And in that case, in the clash of utility maximizations do occur and the developer wants more fast development as well as the recovery of their investment. At the same time subscribers do try to escape from the payment and there are chances of free riding.

So, economic issues arise the moment a problem of choice arises and in that case, it is directly related with the development of the people. So, the need for infrastructure is growing everyday and in that case, the developer as well as the subscribers they have to design, they have to think, they have to act, they have to really plan that what type of bargain between the developers and the subscribers should continue. And if the bargain fails, if the parties are mostly involved in a clash in their individual objective, then in that case various economic issues are persisting and that creates other challenges for the infrastructure development.

(Refer Slide Time: 02:38)



WHY ECONOMIC ISSUES MATTER?

- Have long-term effects on welfare and well-being
- Affects the larger sections of the society since inefficient use of current resources will further deteriorate their conditions
- Decides standards and conditions of living of the people
- Economic issues determine civic and social as well as political life, and will hamper collective decision-making process
- Explains the causes of growth of countries and regional disparities
- Affects social, political, and human rights

The slide also features a small video inset in the bottom right corner showing a man with dark hair and a beard, wearing a purple shirt, speaking.


So, why are these economic issues important? Because, they have a long-term effect on the welfare and well-being. They affect the larger section of the society, since inefficient use of current resources will further deteriorate their conditions. They decide the standards and conditions of living of the people. Economic issues are really determining the civic and social as well as the political life and they will hamper the collective decision-making process. They explain the causes of growth of countries and regional disparities and economic issues do affect the social, political and human rights in a particular economy.

(Refer Slide Time: 03:26)



SOME OF THE COMMON ECONOMIC ISSUES IN INFRASTRUCTURE DEVELOPMENT

- Urban Bias in Infrastructure Development
- Inequality: Rich-Poor Gap
- Digital Divide
- Energy Security
- Consumerism




So, some of the common economic issues faced in majority of the countries today, especially in the infrastructure development projects are basically: the urban bias in infrastructure development, inequality between the rich and poor, the digital divide, the energy security and the consumerism.

(Refer Slide Time: 03:51)



URBAN BIAS IN INFRASTRUCTURE DEVELOPMENT

- Infrastructure development is concentrated mainly in urban areas
- Airports, ports, highways, metro rail, telecom, etc. are the part of urban life
- Rural areas lack the basic infrastructure facilities
- Social infrastructure like hospitals, schools, sanitation etc. have also an urban bias
- Lipton's (1960s) Urban Bias Thesis (UBT) offer that urban classes in poorer countries use their power to distort a range of public policies against rural classes
- Urban-bias in infrastructure development led to the problem of rural migration (problem of slums) and associated congestion in provision of services in urban areas



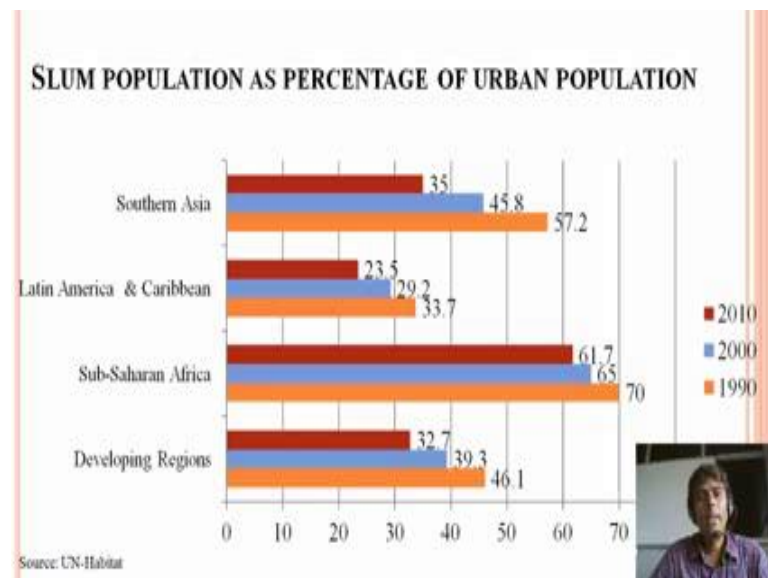
So, what is basically urban bias in infrastructure development? We know that infrastructure development is mainly concentrated in urban areas today. Airports, ports, highways, metro rail, telecom etc, are the part of urban life and rural areas are really

lacking in terms of basic infrastructure facilities. Social infrastructures like hospitals, schools, sanitation, etc have also an urban bias and we find that most of the good schools, good hospitals are not in rural area, but in urban area.

So, majority of the local people, rural people they have to migrate for these facilities from rural area to urban area and in case of physical infrastructure also, when we see the airport, ports, highways, metros and other physical facilities developed in urban areas, we find that majority of the people do have to migrate from the local place to the urban place in search of jobs.

Because, we have discussed in detail in our previous lectures that, these infrastructure facilities provides an opportunity to have the bigger size of the market. It do provides an opportunity to have more employment generation. It do provides basic facilities in terms of transportation and moving factors of production very fast from one place to other place. So, this is one of the major issues, major economic issues in infrastructure development and that is the urban bias. So, urban bias in infrastructure development really led to the problem of rural urban migration and associated with the congestion in provision of services in urban areas.

(Refer Slide Time: 05:55)



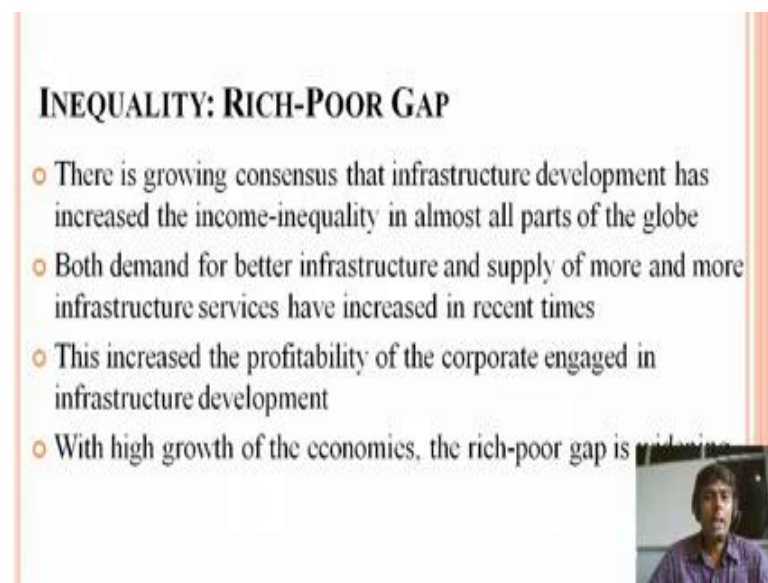
One can see here the slum population as percentage of urban population and if we can see here, the Southern Asia, three different years' data 1990, 2000, 2010 data is showing us the recent trend in the slum population as the percentage of urban population. And in

Asia, the percentage which was 47.2 percent, slum population as a percentage of urban population, it has reduced to 57 to 45 percent in 2000 and by 2010 it has reduced from 45 percent to 35 percent.

Latin American and Caribbean economy, the percentage has dropped from 33 percent in 1990 to 29 percent in 2000 and now it has further dropped to the level of 23 percent. In Sub-Saharan African region, which is the highest slum population as a percentage of urban population, we had by 1990 we have seen that the percentage of slum population as a part of urban population was 70 percent, which has reduced to 65 percent and now by 2010, it has reduced to 61 percent.

So, developing region as a whole, we can see here that in 1990, the percentage of slum population was 46 percent in the urban population, which has reduced to 39 percent by 2000 and it has now further reduced to the level of 32 percent in 2010.

(Refer Slide Time: 07:46)



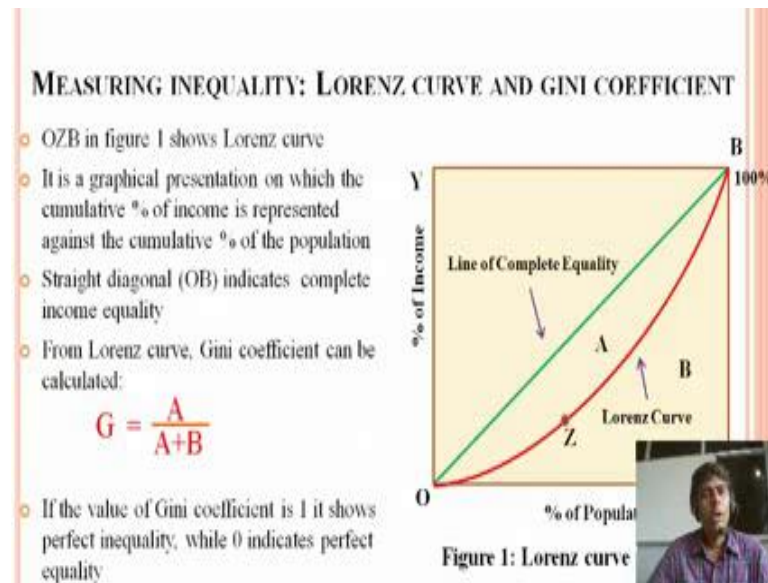
INEQUALITY: RICH-POOR GAP

- There is growing consensus that infrastructure development has increased the income-inequality in almost all parts of the globe
- Both demand for better infrastructure and supply of more and more infrastructure services have increased in recent times
- This increased the profitability of the corporate engaged in infrastructure development
- With high growth of the economies, the rich-poor gap is widening

The slide features a small video inset in the bottom right corner showing a man with dark hair and a beard, wearing a purple shirt, speaking.

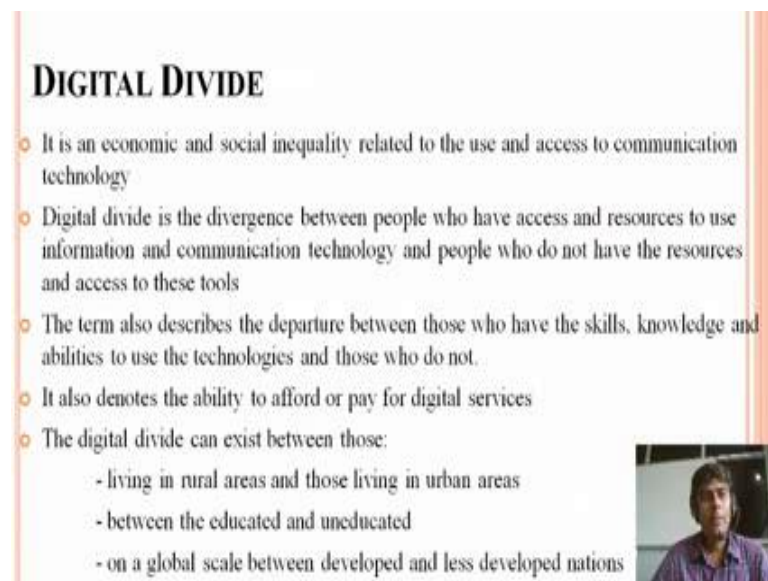
So, inequality and the rich poor gap, there is growing consensus that infrastructure development has increased the income inequality in almost all parts of the globe. Both demand for better infrastructure and supply of more and more infrastructure services have increased in the recent times. This increased the profitability of the corporate engaged in infrastructure development and with high growth of economies, the rich poor gap is widening.

(Refer Slide Time: 08:18)



So, this type of inequality was measured by the Lorenz curve. Here in this graph, we can see that the straight diagonal indicates complete inequality, and from Lorenz curve Gini coefficient can be calculated as $G = \frac{A}{A+B}$. And in the value of Gini coefficient... if the value of Gini coefficient is 1, it shows perfect inequality, while zero indicates perfect equality.

(Refer Slide Time: 08:57)

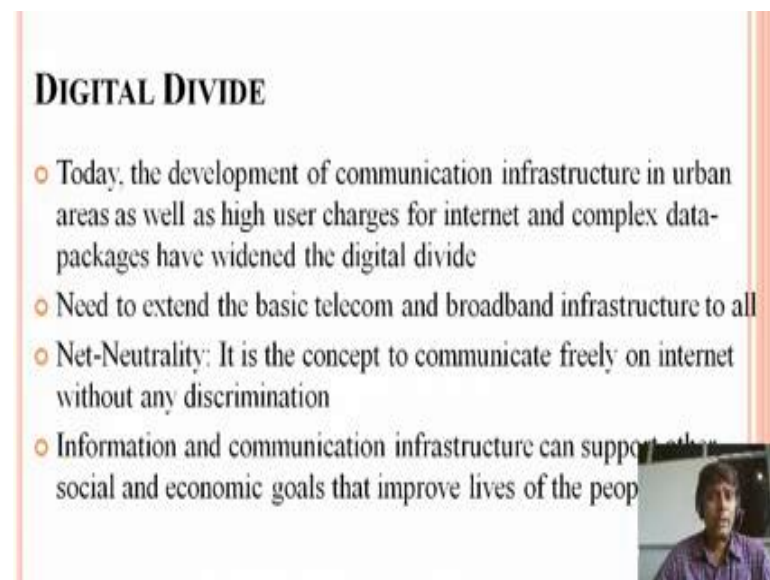


Apart from this income inequality, we do find the new divide, which is growing with the growth of infrastructure and that is the digital divide. So, digital divide is the divergence

between the people, who have access and resources to use information and communication technology and people who do not have the resources and access to these tools. The term also describes the departure between those, who have the skills knowledge and abilities to use the technologies and those who do not. It also denotes the ability to afford or pay for the digital services.

The digital divide can be seen in terms of rural and urban areas, also between the educated and uneducated population and at the same time, at the global scale between the developed and less developed nations.

(Refer Slide Time: 09:56)



DIGITAL DIVIDE

- Today, the development of communication infrastructure in urban areas as well as high user charges for internet and complex data-packages have widened the digital divide
- Need to extend the basic telecom and broadband infrastructure to all
- Net-Neutrality: It is the concept to communicate freely on internet without any discrimination
- Information and communication infrastructure can support other social and economic goals that improve lives of the people

The slide features a small video inset in the bottom right corner showing a man with dark hair and a beard, wearing a purple shirt, speaking into a microphone.

Today, the development of communication infrastructure in urban areas as well as high user charges for internet and complex data packages have widened the digital divide. This need to extend the basic... there is a need to extend the basic telecom and broadband infrastructure to all and there is a discussion today on the net neutrality. It is the concept to communicate freely on internet without any discrimination and information and communication infrastructure is really one of the tool to support other social and economic goals that improves lives of the people.

Now, we can see that due to the help of infrastructure especially in communication and information sector, there are employment generated in India. At the same time, there are certain services which India is trying to offer, not only for the population within the country, but also for the population outside the country through the information


technology enable services. And India contributes around 65percent of the global ITES (Information Technology Enabled Services) of the world.

But, at the same time within the country we do find that there is a population which is far away from such facilities, such connectivity from the information and communication infrastructure and that is one of the bigger challenge for the infrastructure development, particularly in information and communication sector.

(Refer Slide Time: 11:40)

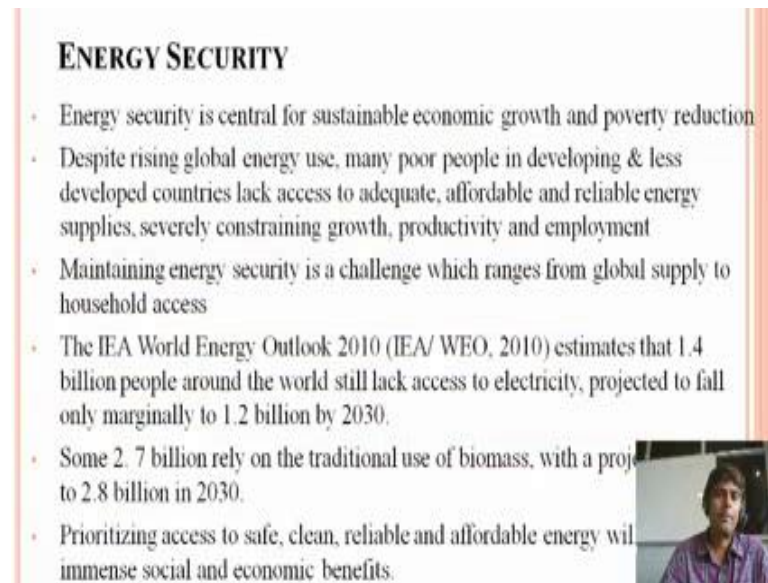
Regions	Penetration (%)
Africa	27.5
Asia	34.8
Europe	70.4
North America	86.9
Latin America/Caribbean	52.4
Oceania/Australia	72.1
World	42.4

Source: Internet World Stats (2014)




In terms of internet users in the world we have also seen that world is really having 42.4 percentage internet users as per the Internet World Stats 2014. While Africa is only 27.5 percent population using the internet, Asia 34 percent, Europe 70 percent, North America 6 percent, Latin America and Caribbean economic 52 percent and Australia and the other Oceania countries are really having 72 percent... as a 72 percent population for the internet users. So, we can find out that in the overall global level, we are not even in the position to provide 50 percent internet connectivity to the world population today.

(Refer Slide Time: 12:48)



ENERGY SECURITY

- Energy security is central for sustainable economic growth and poverty reduction
- Despite rising global energy use, many poor people in developing & less developed countries lack access to adequate, affordable and reliable energy supplies, severely constraining growth, productivity and employment
- Maintaining energy security is a challenge which ranges from global supply to household access
- The IEA World Energy Outlook 2010 (IEA/ WEO, 2010) estimates that 1.4 billion people around the world still lack access to electricity, projected to fall only marginally to 1.2 billion by 2030.
- Some 2.7 billion rely on the traditional use of biomass, with a projection to 2.8 billion in 2030.
- Prioritizing access to safe, clean, reliable and affordable energy will yield immense social and economic benefits.



Like that, we have energy security as one of the major economic issues today in the field of infrastructure development. Energy security is central for sustainable economic growth and poverty reduction. This is empirically approved by many economists, all over the world that the country, which has more per capita energy consumption, they are much good, much better in their productivity, they have more manufacturing activities.

So, despite rising global energy use, many poor people in developing and less developed countries lack access to adequate, affordable and reliable energy supplies and that is one of the major constraints for the growth, productivity and employment in many underdeveloped economy today. So, maintaining energy security is a challenge, which ranges from global supply to the household access. The IEA World Energy Outlook 2010 estimated that 1.4 billion people around the world still lack access to electricity and projected to fall only marginally to 1.2 billion by 2013 and that is one of the major economic challenge, economic issues in infrastructure development.


Because, infrastructure development cannot be sustained without proper energy security whether it is ports, whether it is airports or railways or... other transportation facility. We need to need energy security to sustain those infrastructure. 2.7 billion rely on the traditional uses of biomass... 2.7 billion population is still relying on the traditional use of biomass with a projected increased to 2.8 billion in 2013.

So, prioritizing access to safe, clean, reliable and affordable energy will have immense social and economic benefits and this cannot be really avoidable, if a country has to really grow faster and faster.

(Refer Slide Time: 15:04)

ENERGY		
Country/Regions	Number of people lacking access to electricity (million)	Number of people relying on the traditional use of biomass for cooking (million)
Africa	587	657
Sub-Saharan Africa	585	653
Developing Asia	799	1937
China	8	423
India	404	855
Others	387	659
Latin America	31	85
Developing Countries	1438	2679
World	1441	2679

Source: International Energy Agency (IEA), 2010




At the regional level we find here that the number of people lacking access to electricity in Africa is 587 million, while in India alone 404 million population is lacking access to electricity. Number of people relying on the traditional uses of biomass for cooking, in case of India it is 855 million population, while in China it is 423 million populations and entire developing Asia the number is 1937 million population.

So, this shows that the developing country as a whole is 2679 million population relying on the traditional uses of biomass while, 1438 million populations is still lacking access to the electricity. At the world level we find that 1441 million population is lacking access to the electricity, while 2679 million population is really using the traditional uses of biomass for cooking.

(Refer Slide Time: 16:23)

ENERGY...

- Universal energy access is a challenge
- Subsidies to fossil fuels and renewable resources has fatal consequences
- Energy use is distorted by inefficient subsidies
- Large differences in regional energy prices affect industrial competitiveness, investment decisions, and corporate strategies.
- High global energy prices have brought greater international focus on the economic impacts of energy, supply distort high and volatile energy prices.




So, universal energy access is a major challenge for the world today and subsidies to fuels and renewable resources has consequences. Energy use is distorted by insufficient subsidies. Large differences in regional energy prices affect industrial competitiveness investment decisions and corporate strategy. High global energy prices have brought greater international focus on economic impact of energy supply distortion and high and volatile energy prices.

(Refer Slide Time: 17:00)

CONSUMERISM

- ❖ Infrastructure services such as clean water, urban transport, gas-pipeline, and communications have important consumption benefits and their availability is measure of the basic welfare of the population
- ❖ Efficiency and opportunities increase with infrastructural facilities
- ❖ The development of infrastructure facilities have developed new consumerism in the society
- ❖ Consumerism increases the demand for infrastructural fa
- ❖ Mass consumption is the new slogan

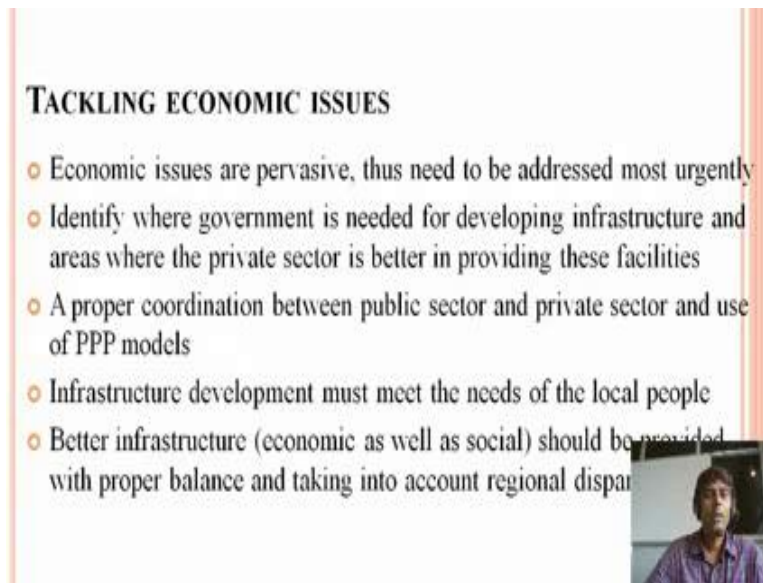


Infrastructure services such as clean water, urban transport gas, pipeline, and communications have important consumption benefits and their availability is measure of the basic welfare of the population efficiency and opportunities increase with infrastructure facilities. The development of infrastructure facilities has developed new consumerism in the society. And we find that today's world is completely different from the world, which we had 20 years before or 30 years before, lots of new items such as mobile phones and computers, laptops, personal computers are added in our day-to-day life and we need more electricity today, we need more better city today, clean and green city today.

In some other discussion, we will also find out that how environment is also one of the major issues in infrastructure development and that we will discuss separately. But here we can find out that some of the economic issues, which we have discussed today are really important for infrastructure projects, because the need for infrastructure development is not because, a country has to grow.


But, the need for infrastructure development is also available, also continue continuing, because the other countries should also grow, because we are in the interdependent world and a country's poverty, a country's poor condition is remain hampering the poverty of others, the richness or the prosperity of the other countries as Ragnar Nurkse has also pointed out. So, in the sense of consumerism we cannot really say that the world needs a consumer free, a consumption free world. The entire production mechanism, entire globalisation process, is fully dependent on the consumerism and to sustain that consumerism, to sustain that global integration, sustain that globalisation process, we need to have more faster development in infrastructure.

(Refer Slide Time: 19:38)



TACKLING ECONOMIC ISSUES

- Economic issues are pervasive, thus need to be addressed most urgently
- Identify where government is needed for developing infrastructure and areas where the private sector is better in providing these facilities
- A proper coordination between public sector and private sector and use of PPP models
- Infrastructure development must meet the needs of the local people
- Better infrastructure (economic as well as social) should be provided with proper balance and taking into account regional disparities



So, how to tackle those economic issues, because economic issues are pervasive thus need to be addressed most urgently, identifying... to identify, where government is needed for developing infrastructure and areas, where the private sector is better in providing these facilities are important for country like India and other developing country.

So, a proper coordination between public sector and private sector and what type of PPP models are important, that is also one of the economic issues, which has to be tackle properly. Infrastructure development must meet the needs of the local people. We have seen in many projects in many countries, that when we are developing infrastructure projects.

In some of the projects we have ignored the local people and that has created again a challenge for the infrastructure development projects in that region. So, what are basically the major conditions of local people, how local people will be benefited from such infrastructure development, that has to be propagated and that has to be catered through the developers of the infrastructure. Otherwise, local people do feel that, do feel detached from such infrastructure development projects.

So, better infrastructure should be provided with proper balance and taking into account the regional disparities, which is the new trend and new thought coming up in the infrastructure development projects, because such thoughts were more visible in some of

the developed countries. But developing countries has neglected varieties of local issues and when the issues are very sensitive in nature such as the farmer's productivity and the farmer's resettlement rehabilitation those issues are important to tackle. Because, ultimately infrastructure development is for the people and it should not be against the people when it comes for the larger benefit.

(Refer Slide Time: 21:58)



TACKLING ECONOMIC ISSUES...


- Economic Impact Analysis
Evaluates contribution of an activity to the economy
- Cost-Benefit Analysis
To evaluate, which policy will generate the highest net benefit to society over time
- Cost Effectiveness Analysis
Evaluates in terms of cost per unit of output; also measures efficiency
- Financial Analysis
Assess profit from a project
- Fiscal Impact Analysis
Assess impacts of a project on government revenues and costs

So, some of the issues are tackled through economic impact analysis, cost benefit analysis, cost effectiveness analysis, financial analysis and fiscal impact analysis. These are broad categories of tackling those economical issues. And the economists are really trying hard to evaluate the contribution of such infrastructure projects to different methods. One can go and see these analyses in detail and many developed countries has adopted cost benefit analysis as a tool to find out how infrastructure is really going to benefit the society overtime.

(Refer Slide Time: 22:45)

TO SUM UP

- Economic issues are directly related to sustainable, efficient and reliable infrastructure
- If the economic issues are not properly addressed it will lead to low spending on infrastructure, decline in private sector investment, and inefficient provision of infrastructure services for economically backward people
- The gap between urban areas and rural areas will further widened in terms of infrastructure services as well as between urban people



To sum up, economic issues are directly related to sustainable, efficient and reliable infrastructure. If the economic issues are not properly addressed it will lead to lower spending on infrastructure, decline in private sector investment and inefficient provision of infrastructure services for economically backward people. So, the gap between urban areas and rural areas will further widened in terms of infrastructure services as well as between urban and rural people. So, more we are growth oriented today we have to be more inclusive in terms of infrastructure development.

Thank you very much