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

Module –08
Lecture - 38
Impact Assessment of Infrastructure Reforms: Some Illustrations

As a part of the last lecture of this course on infrastructure economics, I would like to discuss the impact assessment of infrastructure reforms. Taking some examples, we will have some illustrations from few economy of the world.

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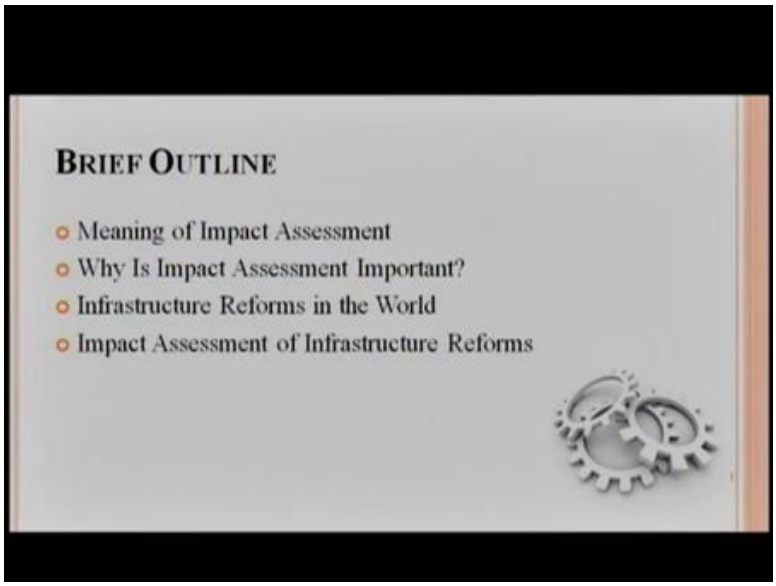

So, the brief outline is the meaning of impacts assessment, why impact assessment is important for infrastructure projects in infrastructure reforms. We will have the discussion on infrastructure reforms in the world and then, we will try to have the impact assessment of infrastructure reforms.

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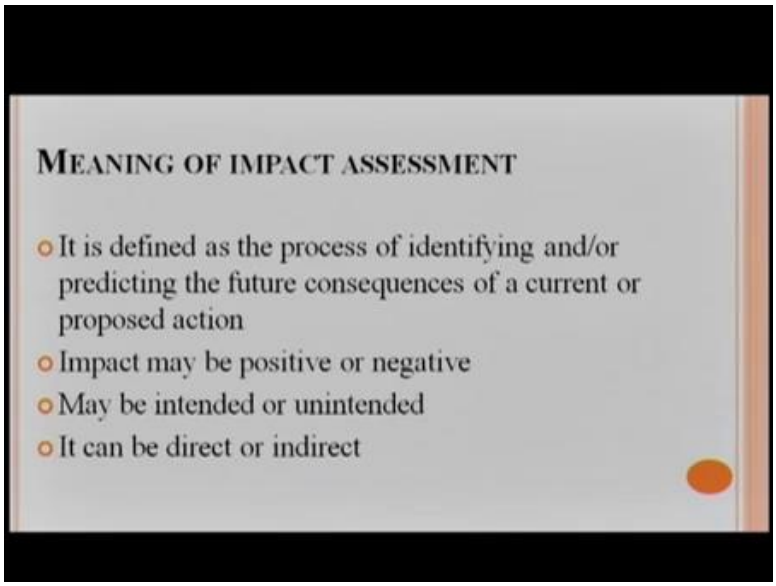

What is basically the meaning of impact assessment? Impact assessment is generally defined as the process of identifying and or predicting the future consequences of a current or proposed action. It may be positive, impact may be positive or negative, it may be intended or unintended, it can be direct or indirect. So, we will have some idea that how infrastructure reforms has some impact, positive or negative or some consequences.

And through this, since this course is about to finish, through some examples and based on our previous discussion, you will be in the right position to answer some of the questions and you will be in the position to judge that, how infrastructure is a long run process, infrastructure development and how impact assessment is one of the way to understand the negative and positive impact of such development.

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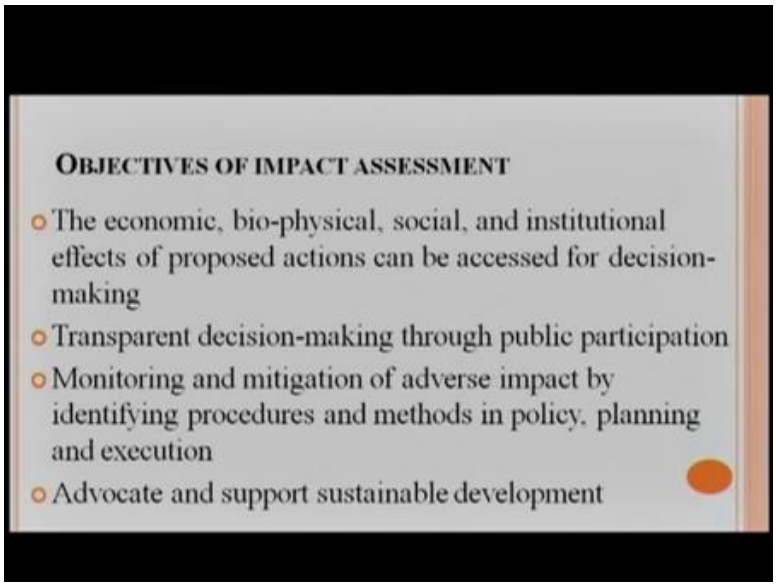

What are basically the objectives of this impact assessment? One objective may be the economic; one another may be the bio-physical, social and institutional effects of proposed actions. How good or the transparent is the decision-making process through the public participation. Monitoring and mitigation of the adverse impact by identifying procedures and methods in policy, planning and execution. Advocate and support sustainable development, if you have the objective of impact assessment.

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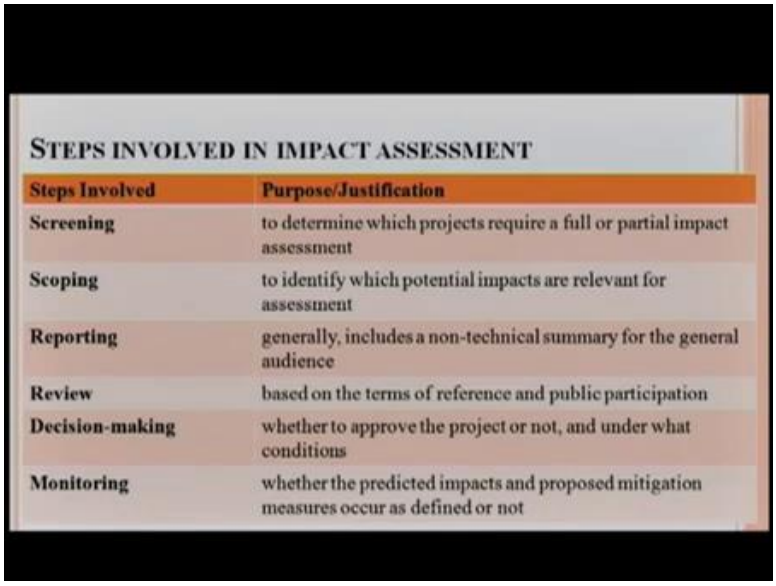

So, what are the steps involved? One of the step is screening, which is to determine which projects requires a full or partial impact assessment. Scoping- to identify, which potential impacts are relevant for assessment. Reporting generally includes a non-technical summary for the general audience. Review- based on the terms of references and public participation. Decision-making - whether to approve the project or not and under what condition. Monitoring- whether the predicted impacts and proposed mitigation measures occur as defined or not.

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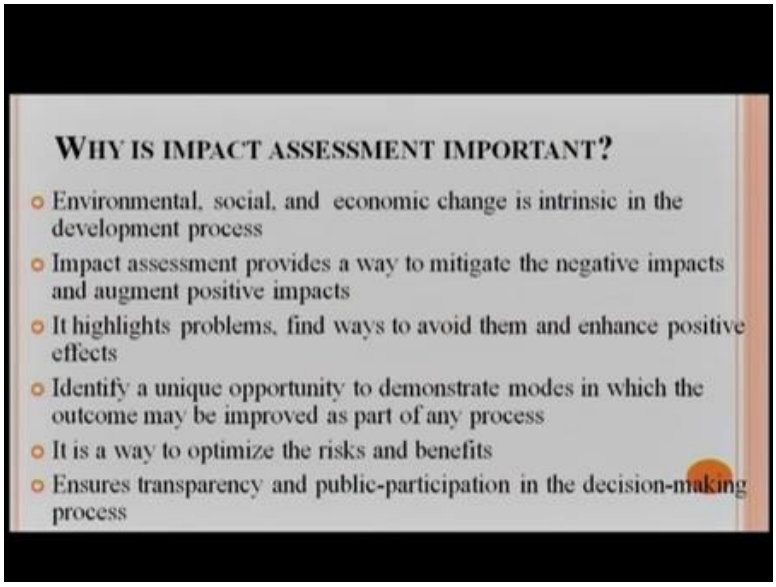

So, why is this impact assessment is important? Because, environmental, social and economic change is intrinsic in the developmental process, impact assessment provides a way to mitigate the negative impact and augment positive impacts. It highlights problems, find ways to avoid them and enhance positive effects. Identify a unique opportunity to demonstrate modes in which the outcome may be improved as a part of any process.

It is a way to optimize the risks and benefits. It ensures transparency and public-participation in the decision-making process. So, that is why the impact assessment has a tremendous role and the economy, which has very good assessment such impact assessment they are really coming out with better a infrastructure facilities. In our previous lecture, when we were comparing one of the successful example and one of the failure case in India in terms of Public Private Partnership, we have seen that in case of

successful Public Private Partnership, it was basically the assessment cost and the revenue assessment, which the company has done in Tamil Nadu for the road construction. While, it was not proper in case of the DMRC, so this plays a very important role.

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So, apart from this, we have seen throughout this course that infrastructure reforms, infrastructure development is unavoidable today, because of the population growth, because of the change in the quality of the living a standard, because of the new things added in our life, new technical and other reforms which we had added in our economic day-to-day conditions.

So, infrastructure became crucial for economic growth and poverty elevation and to maintain the level of dynamism in the economy to have the increasing competitiveness in the economy. It is indeed important to develop, to maintain and to sustain the infrastructure and this cannot be possible through a proper development and maintenance and reform process. Transportation can foster economic development as we have seen in our previous discussion and examples. Energy infrastructure is equally important for industrial development and household consumptions.

Availability, accessibility and affordability of telecommunication are necessary for business and entrepreneurs, which we have already seen in case of many successful examples in the world. India alone is one of the example, where when the price and the

tariff was reduced for the call rates, we have large number of customers added in the telecom market.

High cost of infrastructure services and poor performance of publicly owned utilities in developing economies are the prime reasons behind infrastructure reforms. We have seen in majority of the developing and least developed countries, the public sector enterprises were not in the position to really perform well.

And because of that, the quality of services and the quantity of the infrastructure services were also in a very poor condition. To uplift that poor condition into a better level, it was realized that, it is better to reform to involve the private parties through the Public Private Partnership model or through the auction method or through different types of privatization which we have discussed in our previous lectures, that how infrastructure needs private support and in an open economy model when most of the economies are integrating with each other.

It is indeed important not to depend only on the public *on utilities*, but to involve the private parties, not only within the country, but also from outside the country. So, there was a need for infrastructure reforms and when there was a need for infrastructure reforms, we cannot really say that it can happen without a proper assessment, impact assessment of that infrastructure reforms.

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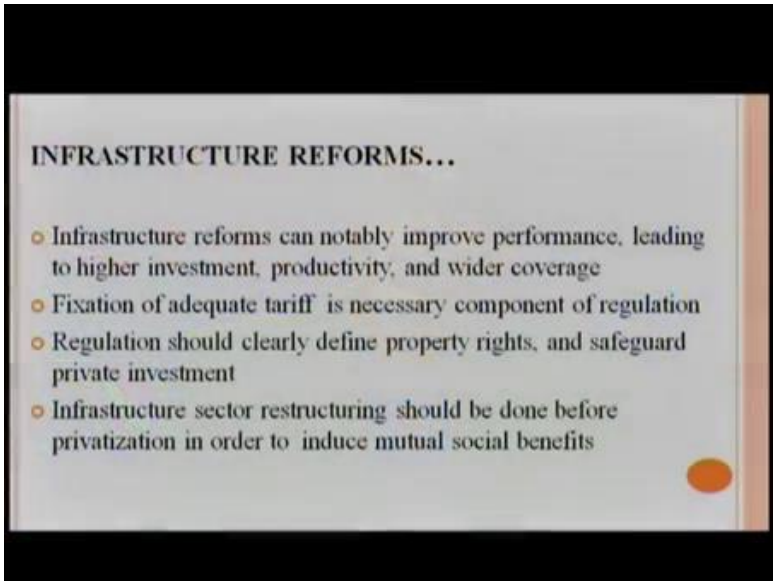

So, infrastructure reforms can notably improves performance, leading to higher investment, productivity and wider coverage. Fixation of adequate tariff is necessary component of regulation. Regulation should clearly define property rights and safeguard private investment. Infrastructure sector restructuring should be done before privatization in order to induce mutual social benefits.

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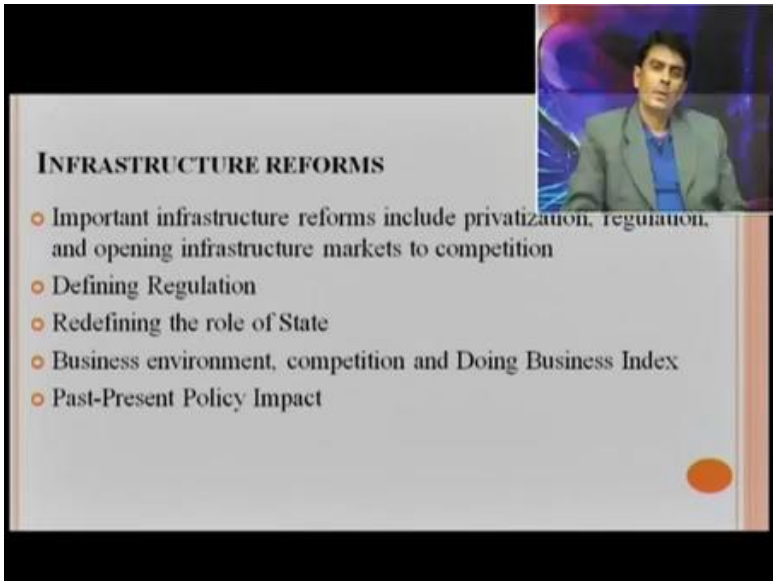

So, important infrastructure reforms includes- privatization, regulation and opening infrastructure markets to competition, defining regulation, redefining the role of the state, business environment, competition and Doing Business Index and past present policy impact.

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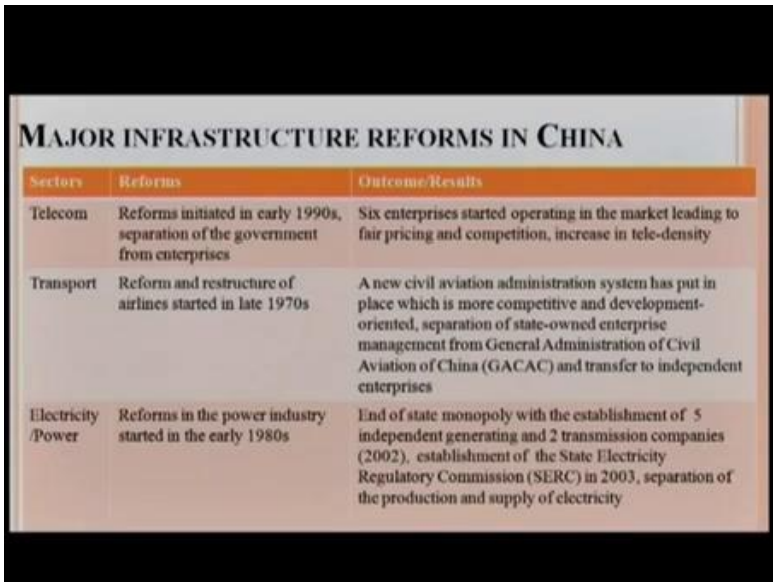

Let me begin one of the illustration from China, a major infrastructure reforms which was carried out in China in last few years. In terms of telecom, reform initiated in early 90's, separation of the government from the enterprises, 6 enterprises started operating in the market leading to fair pricing in competition, which has increased the Teledensity in China.

In the field of transportation, reform and restructure of airlines started in late 1970's, a new civil aviation administration system has put in place, which is more competitive and development oriented, separation of a state owned enterprise, management from general administration of civil aviation of China and transfer to independent enterprises happened.

In case of electricity power, the reforms in the power industry started in the early 1980's. End of a state monopoly with the establishment of 5 independent generating and 2 transmission companies by 2002 and the establishment of a State Electricity Regulatory Commission in 2003, which has separated the production and supply of electricity in China. So, this is the change because of the reform, infrastructure reforms in China.

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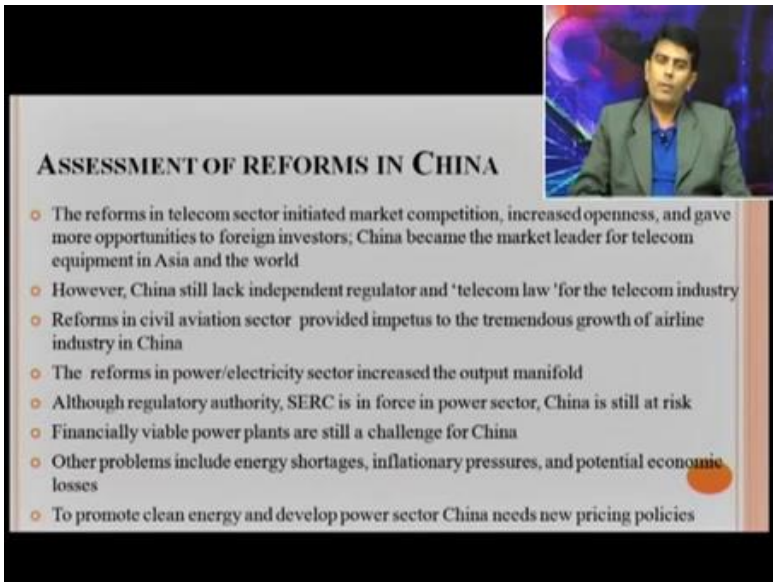

Assessment of reforms in China- the reform in the telecom sector initiated market competition, increased openness and gave more opportunities to foreign investors. China became the market leader for telecom equipment in Asia and the world. However, China still lack independent regulator and telecom law for the telecom industry. Reforms in civil aviation sector provided impetus to the tremendous growth of airline industry in China. The reforms in power electricity sector increased the output manifold.

Although regulatory authority, SERC is in force of power sector, China is still at risk. Financially viable power plants are still a challenge for China, other problems include energy shortages, inflationary pressures and potential economic losses. To promote clean energy and develop power sector, China needs new pricing policies.

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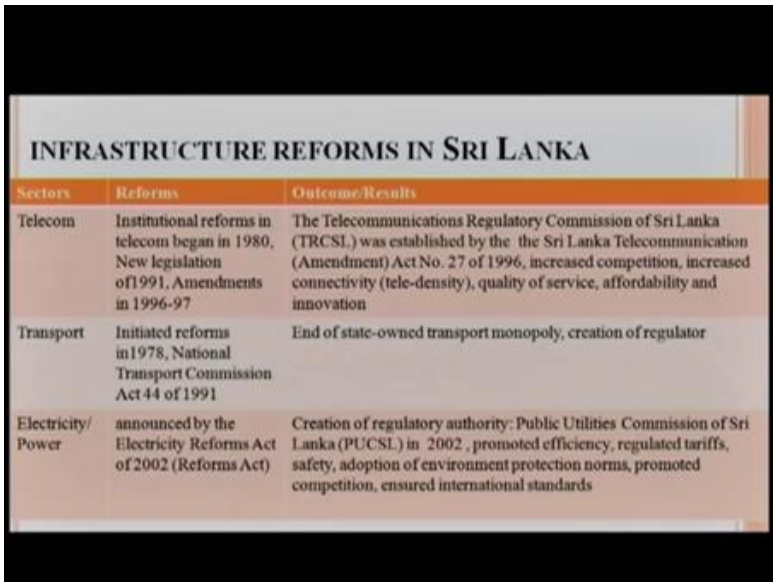

Now, coming back to one of the South Asian country Sri Lanka, we can see here in telecom, institutional reforms in telecom began in 1980's, New Legislation of 1991 and Amendments in 1996-97. The Telecommunications Regulatory Commission of Sri Lanka was established by the Sri Lanka Telecommunication Act number 27 of 1996, which increased competition, increased connectivity, quality of service, affordability and innovation.

In the field of transport, initiated reforms in 1978, National Transport Commission Act 44 of 1991, which really end of state-owned transport monopoly creation of regulator. The field of electricity power, which was announced by the Electricity Reforms Act of 2002, Creation of Regulatory Authority, Public Utilities Commission of Sri Lanka in 2002 promoted efficiency, regulated tariffs, safety, adoption of environmental protection norms and promoted competition and that also provided ensured International standards.

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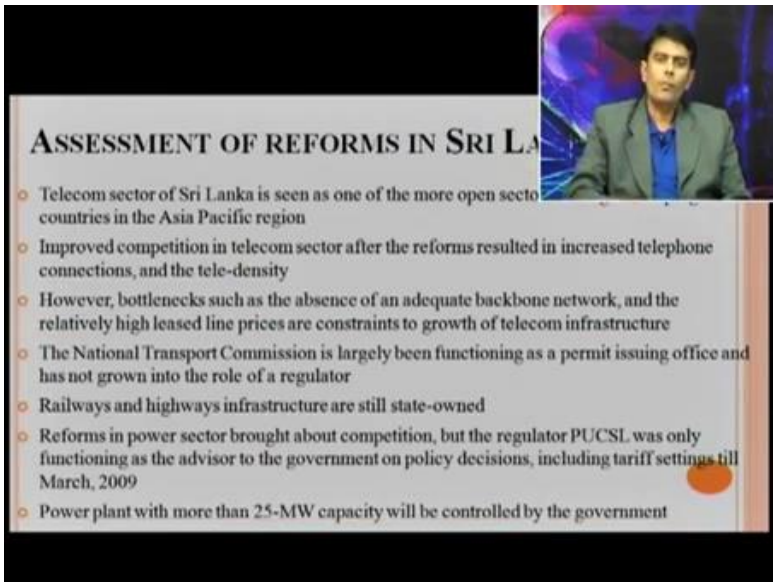

Assessment of reforms in Sri Lanka- the telecom sector of Sri Lanka is seen as one of the more open sectors among developing countries in the Asia pacific region. This has improved competition in telecom sector after the reforms resulted in increased telephone connections and the Tele-density. However, bottlenecks such as the absence of an adequate backbone network and the relative high based line prices are constraints to growth of telecom infrastructure.

The National Transport Commission is largely been functioning as a permit issuing office and has not grown into the role of a regulator. Railways and highways infrastructure are still state-owned. Reforms in power sector brought about competition, but the regulator such as PUCSL was only functioning as the advisor to the government on policy decisions including tariff setting till March 2009. Power plant with more than 25 mega watt capacity will be controlled by the government.

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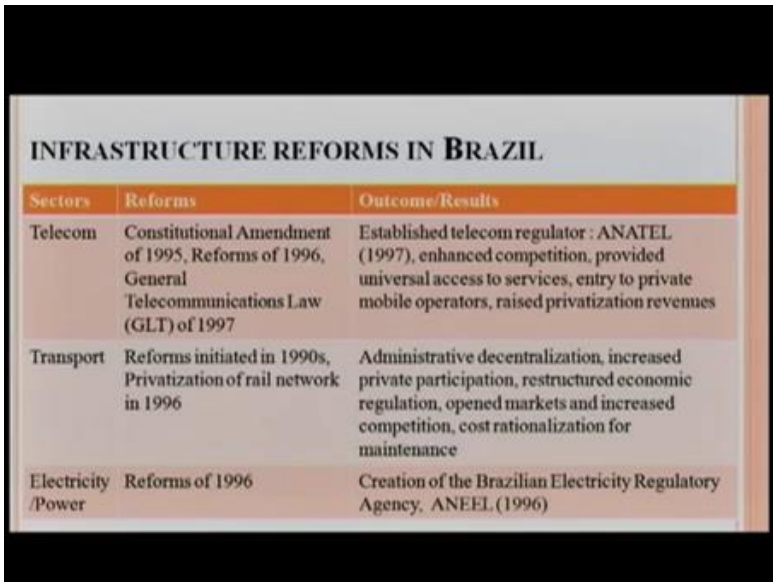

In Brazil, especially if we compare again the telecom transport electricity power we are finding that in telecom constitutional amendment of 1995, reforms of 1996, General Telecommunications Law of 1997. This has established telecom regulator: ANATEL, 1997, which has enhanced competition, provided universal access to the services, entry to the private mobile operators, raised privatization revenues.

In case of transport the reforms initiated in 1990s, privatization of rail network in 1996, which has administrative decentralization, increased private participation, restructured economic regulation, opened markets and increased competition, cost rationalization for the maintenance. Electricity Power Reforms of 1996, creation of the Brazilian Electricity Regulatory Agency, ANEEL 1996.

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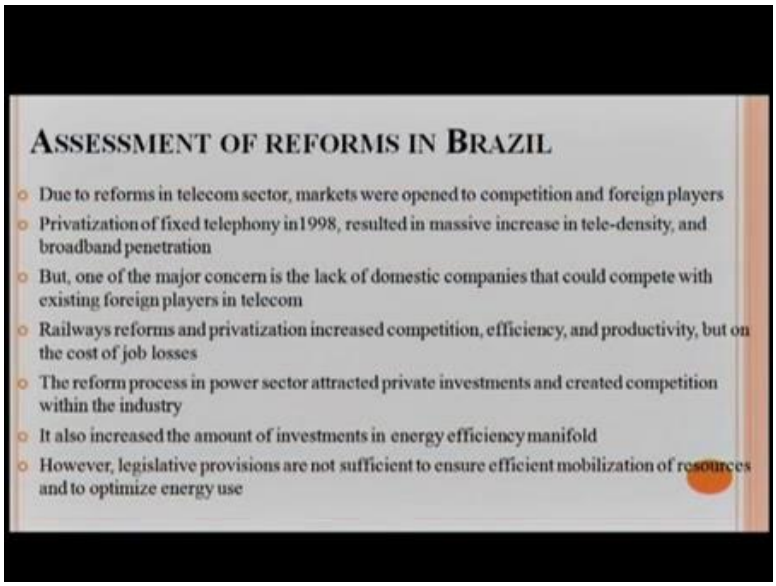

Assessment of reforms in Brazil… due to reforms in telecom sector markets were opened to the competition and foreign players. Privatization of fixed telephone in 1998 resulted in massive increase in Teledensity and broadband penetration. But, one of the major concern is the lack of domestic companies, that could compete with existing foreign players in telecom. Railway reforms and privatization increased competition, efficiency and productivity, but on the cost of job losses.

The reform process in power sector attracted private investments and created competition within the industry. It also increased the amount of investments in energy efficiency manifold. However, legislative provisions are not sufficient to ensure efficient mobilization of resources and to optimize energy use.

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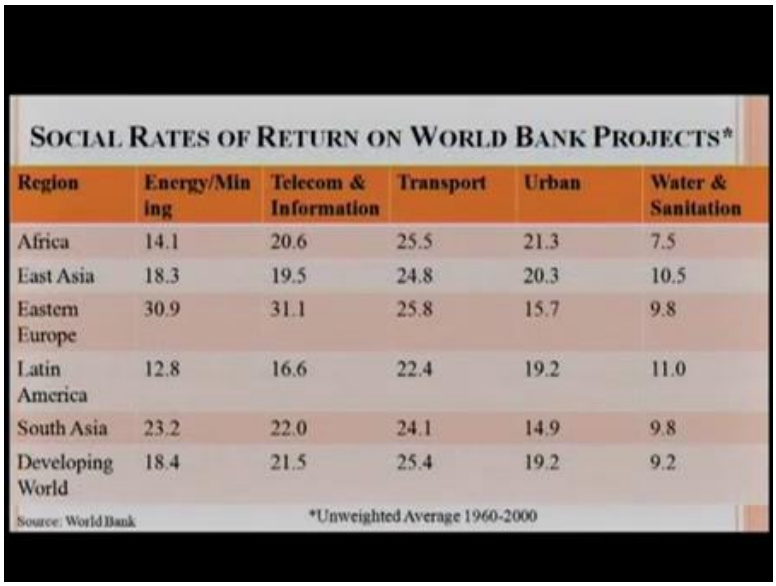

SOCIAL RATES OF RETURN ON WORLD BANK PROJECTS*

Region	Energy/Mining	Telecom & Information	Transport	Urban	Water & Sanitation
Africa	14.1	20.6	25.5	21.3	7.5
East Asia	18.3	19.5	24.8	20.3	10.5
Eastern Europe	30.9	31.1	25.8	15.7	9.8
Latin America	12.8	16.6	22.4	19.2	11.0
South Asia	23.2	22.0	24.1	14.9	9.8
Developing World	18.4	21.5	25.4	19.2	9.2

Source: World Bank

*Unweighted Average 1960-2000

The social rates of return on World Bank projects… this is the another way to find out how some of the infrastructure project have certain social rates of return. In Africa in energy 14.1, in telecom 20.6, transport 25.5, urban 21.3 water and sanitation 7.5. East Asia, in energy 18 percent, telecom 19.5, transport 24.8 while water and sanitation 10.5. East Europe 30.9, telecom and information 31 percent, transport 25 percent, urban 15 percent, water and sanitation 9.8 percent. Latin America 12.8 percent, telecom and information 16.6 percent, transport 22.4 percent, urban 19.2 percent, water and sanitation 11 percent. South Asia energy and mining is 23.2 percent, telecom and information 22 percent, transport 24 percent, urban 14 percent and water and sanitation 9.8 percent. Developing world 18.4, overall developing world, if one can compare here that energy… the social rates of return on world bank, world bank projects are 18.4, telecommunication 21, transportation 25.4, urban 19.2, water and sanitation 9.2.

So, this shows that how certain infrastructure projects has certain social rates of return and that shows the value of infrastructure for the society. We find out that social rates of return are very high in the field of energy in South Asia compared to Africa compared to East Asia and compared to Latin America and other developing countries. While in case of telecommunication and information, we again find that social rates of return is much better in South Asia compared to Africa, East Asia and Latin America economies.

Again in the transportation, we find that we are as good as the social rates of return are as good as Africa, East Asia and other Latin American economy. But, in case of water and sanitation, the World Bank projects are not having much better social rates of returns compared to Latin American economy and East Asian economy. So, the overall indicator shows that the economy in South Asia including India, Pakistan, Bangladesh these economies are in the position to provide a major social rates of return on many World Bank's projects which is linked with the infrastructure development.

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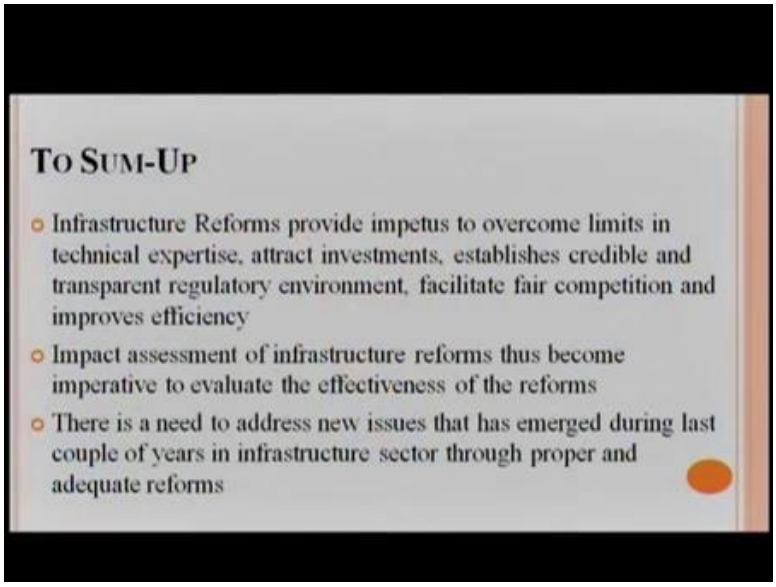

To sum up, the infrastructure reforms provide impetus to overcome limits in technical expertise, attract investments, establishes credible and transparent regulatory environment, facilitate fair competition and improves efficiency. We have seen that how in case of Brazil, in case of Sri Lanka and in case of China, sectors like telecommunication, sectors like transportation has a proper competition after the reforms.

So, infrastructure development in a better regulatory and better reform process may provides more competitiveness and fairness in the services. So, impact assessment of infrastructure reforms thus become imperative to evaluate the effectiveness of those reforms. So, it is basically the impact assessment, which gives us the idea, that whether certain reforms and certain infrastructure developed after the regulatory body or after the regulatory commissions has performed better or not.

So, cross country examples illustrate some of fact that if any infrastructure project has to really come up it has to really come up with a proper guidelines, regulation and more efficient way of such growth. There is a need to address new issues that has emerged during last couple of years in infrastructure sectors through proper and adequate reforms.

So, through these impact assessment, there are new issues coming up such as environmental issues, other economical issues, labour issues, land related issues. And any developing country, which is really coming up with more and more infrastructure projects they have to really deal with all those new issues and these few issues cannot be addressed, if we do not have proper impact assessment system. And, as we have already discussed that these impact assessment systems and these tools provides us certain idea, how to come up in a much better way for the infrastructure development. Because, we are… many developing countries are today in the position to really go for the second generation of infrastructure reforms and that leads more issue based reforms… more issue based infrastructure developed and taking care of many sensitive issues are one of the major challenge for the infrastructure development today.

I think with this note I would like to finish this course on infrastructure economics. I will love that if many students who have joined this course will certainly drop certain questions. I will be available to answer those questions through the group email id and I hope you must have enjoyed this course on infrastructure economics.

Thank you.