Urbanization and Environment
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Module - 03
Urban (environmental) trajectories in India: Plans, policies, visions and missions
Lecture - 15
"Smart Cities"

So, good afternoon everyone and in lecture 15, we are now going to cover India's Smart City Mission. So, we would learn different technicalities so far as the Smart City Mission, so the smart city project is concerned.

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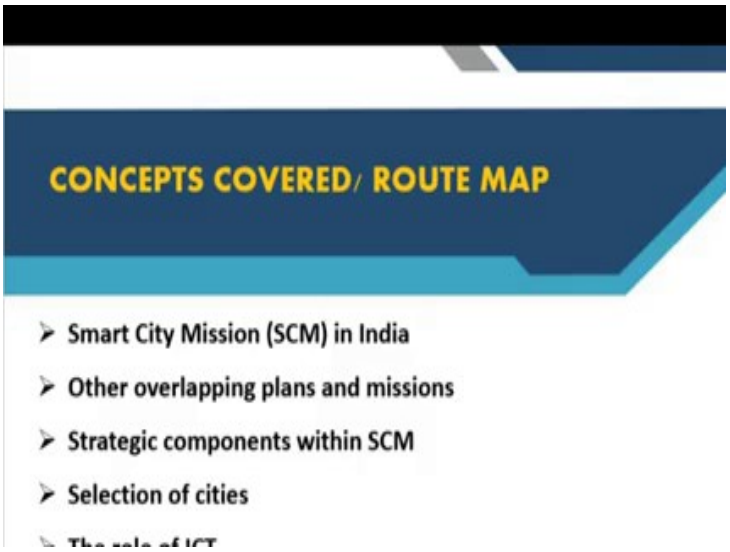

And if you take a look into the route map, I will be covering the Smart City Mission in India, discussing other overlapping and coinciding plans and schemes and missions to you know have a meaningful impact; proton code meaningful will later discuss how meaningful you know these ventures are being finally. But yes, at least in official terms to kind of craft meaningful impact on the Indian Urban Environmental Scene.

So, we would discuss strategic components within Smart City Mission. And also the process we, will not discuss a lot, but a bit on the process in terms of selection of cities, the role of ICT this is also fundamentally important.

The role of ICT information community communication technology in creating smart cities in India. And also finally, we would you know finish this lecture with little bit of a reflection on the what is known as lack of sustainability quotient in this smart city plan or the Smart City Mission.

So, we will also talk about the implementation status, but you know the criticisms, the inadequacies we would be discussing in our next presentation that is lecture 16. But here, we will touch a bit on the inadequacy relating to you know the sustainability quotient in this Smart City Mission. And also finally, end the lecture with some sort of reflection or information relating to the implementation status so far as this particular mission is concerned.

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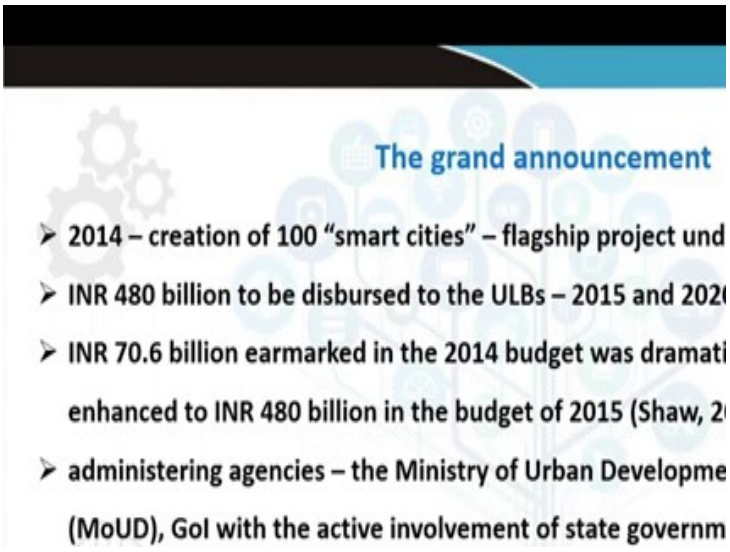

So, yes we discussed this in a last presentation when we were talking about this transition from genuine RM to the Smart City Mission in the Indian context. So, there was a political change in the regime from UPA to the NDA government.

And NDA, when NDA came to power in 2013 immediately in 2014 they announced, and they you know proclaimed this fresh announcement of you know the creation of 100 "smart cities" for the Indian subcontinent and this became a flagship project under the NDA.

And immediately the, I mean 70.6 billion which was year marked in the 2014 budget was dramatically enhanced and increased to INR 480 billion in the budget of 2015. And the idea was that you know this budget would be disbursed at frequent intervals to the urban local bodies between a period of 5 years; that is between 2015 and 2020.

And who would be the major administrating agencies for this Smart City Mission. The Ministry of Urban Development; MoUD, Government of India with the active involvement of state governments and union territories. But we would also see that how you know the private companies and the private investors also became a big you know actors or players in this particular game.

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So, overlapping urban policies and schemes along with smart city to cater to some of the integrated needs priorities and requirements of Indian cities. So, HRIDAY, we have HRIDAY AMRUT National Mission for Urban Sustainable Habitat, Housing for all Urban National Urban Sanitation Policy. So, number of provisions that which are part of all these schemes and grant plans they very much coincide with the larger agenda of the Smart City Mission.

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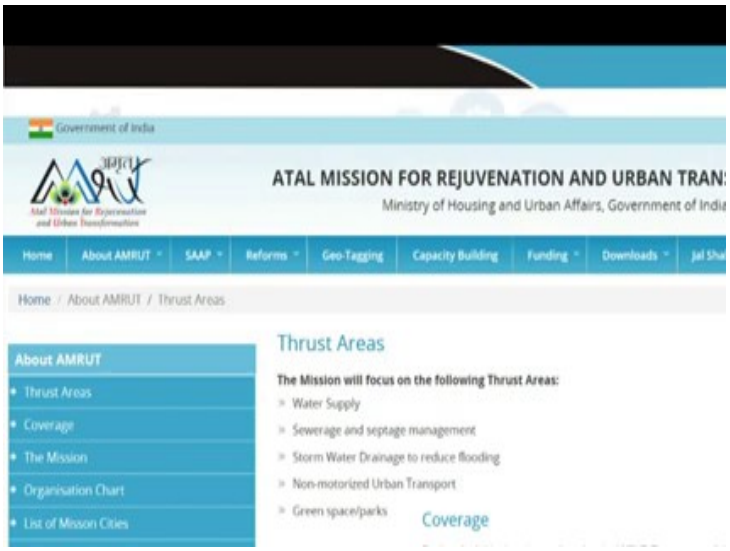

So, if we just focus on the Atal Mission for Rejuvenation and Urban Transformation that is AMRUT; just go to their official site and you will find all these details that how and why AMRUT its main focus is on this following thrust area.

So, just take a look on the thrust areas you will see you know AMRUT focuses on water supply. So, the main focus is to actually provide portable water and to layout piped drinking networks and sewerage networks in the so called otherwise non networks part of cities.

So, and also whole lot of focus is on the creation or establishment of green spaces and parks and non-motorized urban transport. So, we can see that how environmental sustainability or environment remains a very important component in urban planning and development. So, far as these particular schemes like AMRUT etcetera are concerned.

So, and there are several other details says, I would encourage you to go just go through navigate across the different tabs and sub tabs you know by accessing the official website of AMRUT, this is the government website.

And you will see that, how you know Rajasthan was the first state actually to submit the state action plan, and you know the kind of challenges that different states are facing in terms of AMRUT. And also what are some of the positive stories you know of AMRUT and the several provisions that make you know AMRUT feasible.

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So, there are other plans; like on the same day along with AMRUT housing for all scheme was also launched by the government and it had actually to each it has two parts Pradhan Mantri Awas scheme for the urban people and also for the grameen; that is the rural people. And the whole idea is to provide affordable housing to the urban poor.

And the target was to kind of I mean cater to 20 million affordable houses by 2020. And through the use of eco-friendly technologies and converge with it also definitely housing for all of course, converge with other plans targeting coverage of urban utilities. For example, AMRUT is a direct example which you know focuses on the establishment of pipe networks, water networks and sewerage facilities and housing for all; this is also integrated to this to the AMRUT scheme.

So again HRIDAY, HRIDAY is another important scheme which mainly you know concentrates on the heritage component of the urban. So, it is all about urban planning, economic, growth and heritage conservation in an inclusive manner, development of core heritage infrastructure projects like monuments, ghats, temples etcetera. And we all know now that how you know this lot of discussions are going on regarding heritage and heritage conservation and preservation.

So, and for example, the townships or the cities which had to finally come up as heritage cities they also needed implementation; robust implementation of and development of you know sanitation facilities, public transportation and parking, citizen services,

information kiosks, etcetera. All these you know so called modern advanced options had to be integrated you know in the urban to make these or to declare these cities as heritage cities.

So, 13 cities you know were kind of selected under the HRIDAY scheme including cities like Ajmer, Amravati and Gaya, Puri, Kanchipuram, Varangal, Dwarka, etcetera.

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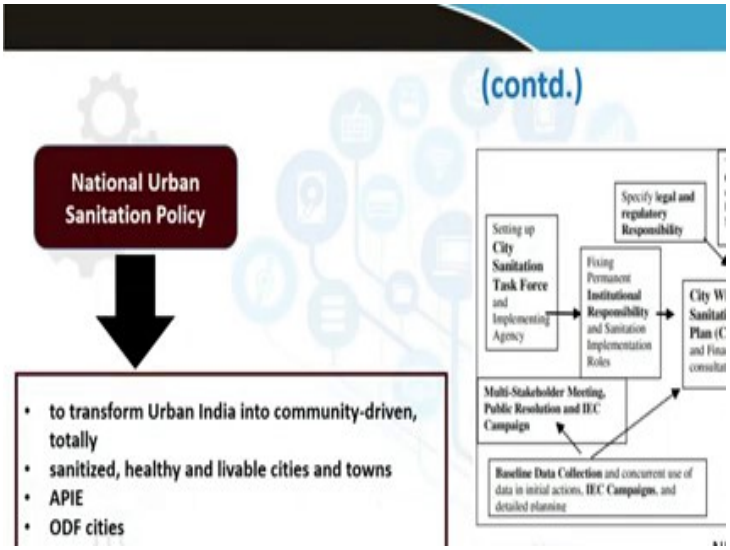

So, then there is also this National Urban Sanitation Policy, another overlapping scheme or plan. And here you can see all these different other details about you know how the implementation mechanism you know was kind of devised and crafted.

So, the whole idea in this national urban sanitation policy is to transform urban India into a community driven totally sanitized healthy and livable cities and towns. So, come up with totally sanitized healthy and livable cities and towns in the country; and by you know kind of fostering APIE and APIE means Awareness Participation Involvement and Engagement of the multiple actors and stakeholders and for this ODF the cities had to be ODF that is open defecation free cities.

And network based sewerage systems has been encouraged in this particular policy. And also there is a whole lot of emphasis on recycle and reuse of treated waste water for non-portable applications.

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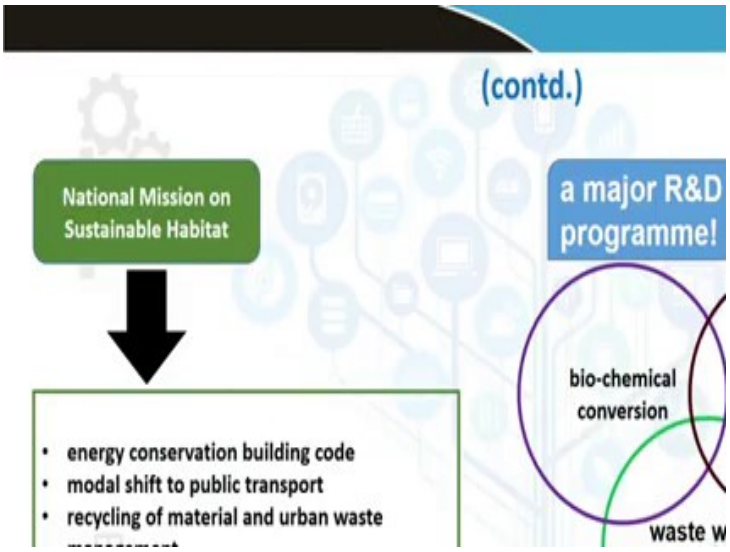

Yes, this is also very important, but it is little older so it dates back to 2010 this national mission on sustainable habitat and this is part of the NAPCC which is National Action Plan for Climate Change. And you can see the whole you know the entire thrust or the emphasis is on the environmental components like energy conservation building code. So, how to think about model shift to public transport and also you know because in order to regulate and reduce carbon emission.

And to recycle material and come up with proper urban waste management mechanisms and strategies. And develop technology for, even for you know this are national mission sustainable habitat calls forth for provision or for technologies where there can be provision to produce power from waste.

So, it is a major R and D, research and development program and there are several important components in it; including bio-chemical conversion, sewage utilization and recycling options and also waste water use.

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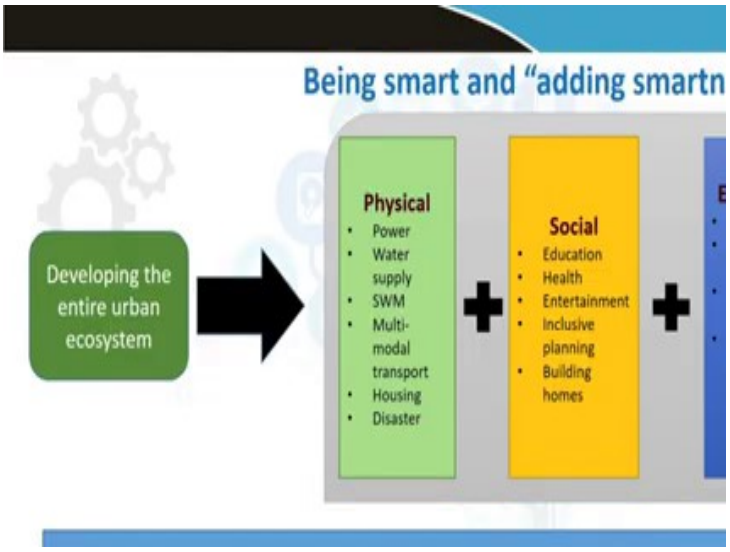

Now, so this smart city mission this smart city program again if you go to the official site; if the site is here, you can just access this site and you will find out that how you know the smart cities at least officially it claim that it is interested to develop the entire urban eco-system.

So, this is something which is said in this particular; in the website this announcement is has been made that you know if you if I mean urban development has to be targeted, then urban has to be understood as an entire urban ecosystem consisting of physical, social, economic, and institutional components. So, all these you know issues need to be targeted concurrently in order to you know cater to the integrated needs of the complex urban eco-system.

So, if you see this code, so the official site says that to provide for the aspirations and needs of the citizens urban planners ideally aim at developing the entire urban ecosystem. So, these can be a long term goal and cities can work towards developing such comprehensive infrastructure incrementally by adding layers, are adding on layers of smartness. So, how to add layers of smartness, by again parallelly focusing on all these different you know pillars and the sub-pillars within each pillar. So, the pillars of you know the physical pillar.

And so what are the things which need to be targeted at power, water, supply, solid waste management, multi nodal modular transport, housing, disaster everything. Social:

education, health, entertainment, inclusive planning, building homes, etcetera. Economic: GDP, job creation, livelihood activities, market growth. And institutional speedy service delivery, environmental sustainability, public participation and ICT; that is Information Communication Technology based service delivery in order to you know manage things in the smartest way.

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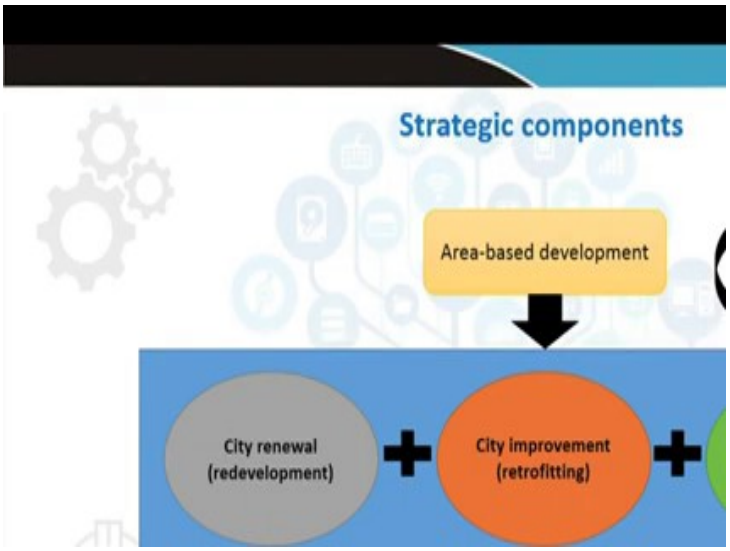

So, there are three major strategics components in the area development or area based development that is the most important or significant part of the smart cities mission. So, the three strategic components are city renewal or redevelopment, city improvement or retrofitting and city extension or green field development.

So, for example, in city renewal or redevelopment only a particular part of a particular area is actually targeted in consultation with the urban local bodies and the municipality and several other stakeholders.

And for example, around 50 acre approx area is targeted that particular layout and the plan is to kind of come up with enhanced infrastructural facilities. So, examples can include the Kidwai plan in New Delhi or the Bhendi market you know in Mumbai these are can be considered as part of this city renewal redevelopment plan within the Smart City Mission.

Similarly, if so far a city improvement is concerned, though the whole idea is to kind of develop a particular area again within a particular city and this area has to be earmarked or identified across consultation through consultation among various stakeholders of course, including members from or representatives from urban local bodies and several other you know local representatives. And for example, 500 acres areas are targeted which would then again you know see enhanced infrastructures and application of smart solutions.

So, for example, smart mobility through which like through ICT, then intelligent traffic management can be tracked and can be implemented. And there can be smart metering for you know for drinking water and again several other forms of technologies to kind of convert waste into power. So, these are part of this retrofitting plan.

And then the major important or the new plan is to kind of come up with a city extension that is green field development. So, which means that vacant land will be chosen or targeted and new development will be implemented in this vacant land. And definitely the whole idea has to be eco-friendly. So, there would be the construction of eco-friendly buildings, eco-friendly malls and eco-friendly you know office spaces etcetera.

And there is also a kind of a pan-city initiative which means everything has to be done in a very smart way through the application of smart solutions as I mentioned in terms of mobility, in terms of water management, in terms of solid waste management etcetera. So, these are the major strategic components within the Smart City Mission awaiting or you know encountering smart solutions.

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So, competitive and cooperative federalism; I think this is the only the ever first mission or the ever first grand plan, which has been floated in this particular country which encourages this competitive model. So, cities can only be selected through this selection criteria. So, we will discuss this in detail when we in our next presentation, that is in lecture 16 where we will talk about, I mean where we will be critically interrogating some of the major components within this SCM.

So, challenge or competition method to select cities for funding. And we will also discuss that whether you know how this particular model or method of selection through competition you know selection of cities for funding actually is crafting or paving the way towards what is known as inequitable urbanization.

So, anyway the another major important point for SCM or for construction of smart cities is that this particular vehicle that is the special purpose vehicle has been this idea has been floated, which means you know I mean the companies act was passed in 2013. So, it means that this special purpose vehicle it is a coterie of some companies who are mainly responsible for executing different plans within the smart city program.

So, this different companies will be actually chosen by the state in consultation with the center and the municipalities would definitely be involved in the process. But then, these companies would play the final role you know in taking decisions, in taking decisions

and in making you know crucial in making crucial in kind of outweighs like for different crucial steps like procuring lease and arranging joint ventures, purchase etcetera.

So, some I mean municipalities also do not have so much of right as you know the rights are now being enjoyed by special purpose vehicles. So, this is one of the unique characteristics of the smart city plan.

Information and communication technology; and all of us know that how the entire project is actually dependent upon. And it relies on ICT and IOT which is internet of things and the whole idea is to exhibit a high performing urban system.

So, unlike municipal bodies if you look into this quote. So, Sandhir, I have quoted him from the Hindustan Times and the reference is there in a list of references. So, here he says that 'unlike municipal bodies where professional cadres have been generally lacking on account of a perpetual mismatch between fund, function and functionary'.

So, he makes a difference, he makes the distinction between the, you know between the municipal bodies and between the SPVs which the special characteristics for the smart city plan. So, the distinction between municipal bodies and SPVs is that municipal bodies the professional cadres they have been generally lacking on account of a perpetual mismatch between the funds function. And functionary the SPVs are much more business oriented and have stuffing that is commensurate with their functions.

So, the whole idea is again to you know kind of draw investments, attracts investments from private investors. And SPVs you know play a crucial role in terms of attracting these investments from the private companies.

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ICT; ICT is the lifeline of smart city plan and the whole idea is to kind of create a seamless integration across these different services, the delivery of different services including e-governance and citizen service, waste management, water management energy management, urban mobility etcetera.

So, there is again this TEC report which is again there in the list of references. Please go through this TEC report, if you know want to focus on the delivery of services across this various segments through ICT; that is information communication technology.

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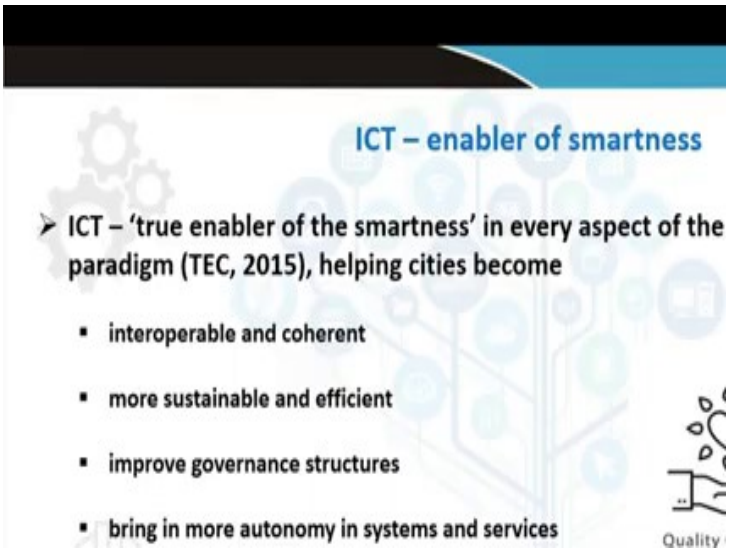

So, ICT here is considered or regarded as enabler of smartness. So, again I am quoting from TEC report which says that ICT is the 'true enabler of the smartness in every aspect of the smart city paradigm helping cities become; interoperable and coherent, more sustainable and efficient, improve governance structures and bring in more autonomy and systems and services'.

We will see in our next lecture that how far you know these official projections have actually been able to be transcended into actual realities. Yeah, so the whole idea is to improve the quality of life of its citizens, but which citizens that is the fundamental question.

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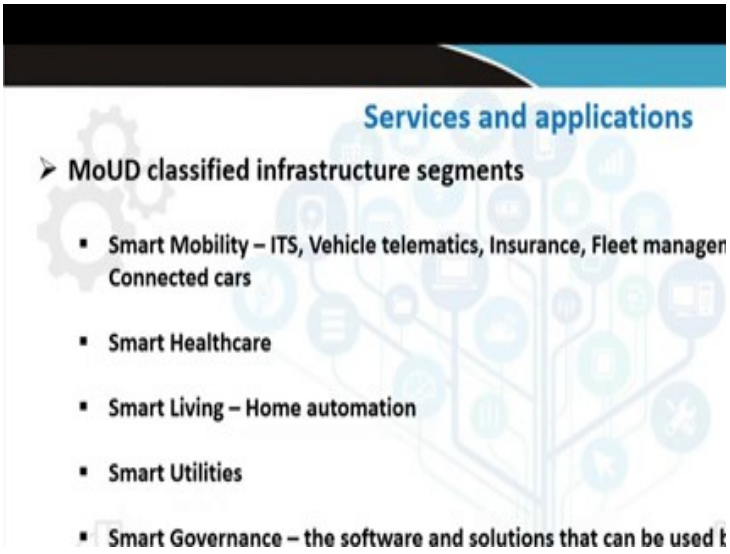

Yeah, service is an applications, so MoUD Ministry of Urban Development has actually classified infrastructure segments into smart mobility – ITS, vehicle telematics, insurance, fleet management, connected cars, etcetera.

Smart healthcare, smart living that is through home automation, smart utilities; I told you about you know smart metering services for water and sanitation facilities. Smart governance - the software and solutions that can be used by various departments for smart governance. And smart manufacturing through predictive maintenance.

So, these are the various infrastructure segments classified by the ministry of urban development.

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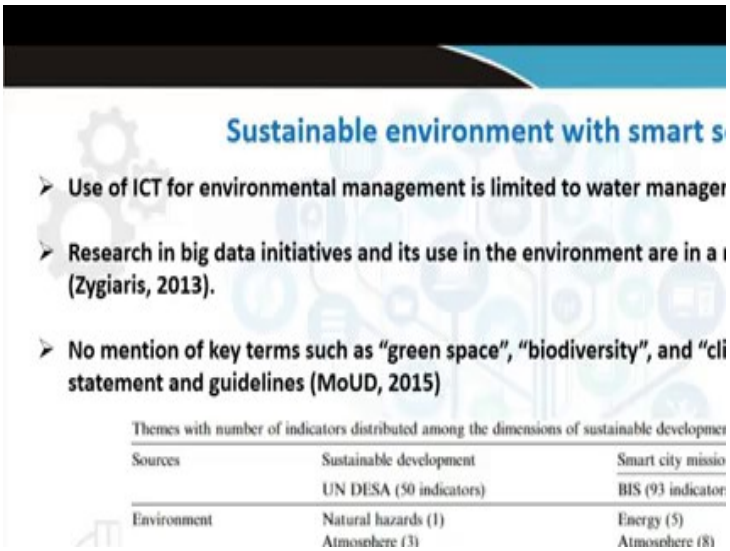

Yes. So, this is something crucial. So, that you know though in these various programs like AMRUT or you know the other programs that we discussed national urban sanitation policy. So, in all these programs environment seem to be you know incorporated and integrated within urban planning and development.

But then, you know now some interesting works or research researches are being pursued where these urban experts are actually trying to quantify or measure you know the impact or measure the environmental or sustainability quotient you know in these programs in the various provisions that are actually laid out in these particular initiatives called the called the smart city initiative.

So, for example, I have come across a very interesting article which I have mentioned in the list of references, this is by Randhawa and Kumar. And so, Randhawa and Kumar what they have done is that they have kind of compared the sustainability indicators that are there for the you for I mean so far as UNDESA is concerned that is the United Nations, Department of Economic and Social Affairs. And the sustainability indicators that are part and parcel of the Smart City Mission.

So, this I mean if you go through this article you will see the Randhawa and Kumar talk about the use of that; yes in Smart City Mission there is whole lot of provisions for the use of ICT for environmental management, but then it is again only constricted and limited to water management.

So, there is research in big data initiatives and its use in environment, but they are still in their nascent stage. So, far as our country is concerned. And then there is there are no mention of key terms there is no mention of key terms such as green space, biodiversity, climate change in the SCM statements and guidelines, right. So, we do not come across these terminologies a lot.

And again as I was telling that you know Randhawa and Kumar they have kind of compared the use of sustainable indicators for UNDESA and smart Indian Smart City Mission and they say and show that while in the UNDESA that is United Nations development department of economic and social affairs at least 50 indicators have been mentioned.

So, far as sustainable development criteria is concerned including natural hazards, atmosphere, water, oceans, seas and coasts, biodiversity and land. In Smart City Mission only like you know few indicators are mentioned and again constructed to energy, atmosphere and water.

So, we will discuss this again in detail in our next presentation when we would be critically interrogating you know the smart city initiative plan and action.

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So, what is the implementation status? 2.5 years after the announcement of SCM. So, I am again you know I depended on the SESEI report which came out 1 or 2 years back.

And so, they say that 2.5 years after the announcement of SCM 6.5 percent of the total identified projects have been completed with utilization of just 1.6 percent of the total envisaged investment of rupees 1,38,730 crore; which is only 17.36 billion euro. So, the implementation status is not that satisfactory.

And also you know if you take a detailed look you know and in depth you if you make an in depth evaluation of what is actually going on in this implemented spaces; you also you know see you will you will be able to identify and mark different discriminations, inadequacies and discrepancies in terms of the implications of the various components of the project. So, many projects are stuck as local governing bodies are unable to raise money using their own resources. So, this is also what is happening.

If the same thing happened in genuine RM as well. So, for example, there is a book I edited a book called sustainable urbanization in India there is a chapter by Sima Fatima, who shows you know he she consulted archive, she consulted daily newspapers in both Hindi and English.

And she also you know deployed other qualitative research methodologies like focus group discussions, key informant, interviews, etcetera. And she showed that how you know effective functioning of services actually to a great extent gets hindered or it actually I mean local politics; how local politics and you know political maneuvers through cadre cadreship cadre politics actually hindered proper functioning of you know democratic decentralization.

So, she did that study so far as a Patna city was concerned.

So, same thing we find especially for several small towns and cities as well. So, many projects you know are stuck. So, first of all the implementation status is already very poor, so only 1.6 percent of the total envisage investment has been used. And even within that many projects are stuck as local governing bodies are unable to raise money using their own resource.

So, we also discussed this in our last presentation where we talked about how you know the urban local bodies they I mean all the urban local bodies in different areas; all areas are not actually properly equipped to you know to kind of generate funds for completing the different projects.

So, many cities are also facing resistance in execution of projects as citizens have opposed user charges for services provided under the mission. So, it is highly costly actually, it is not cost effective, but it is very very costly and sometimes affordability is actually a major issue.

So, in several places it is seen that this citizens are resisting. They are opposing, they are opposing to pay extra charges you know for all these urban services. So, that is why different projects also have come to a halt.

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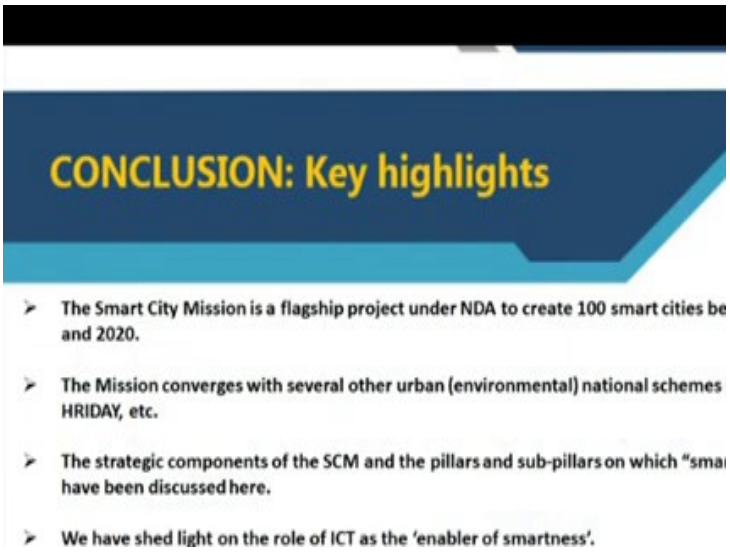

So, yes please go through some of these references.

And yeah, so what we have dealt with in this lecture is that; we have talked about we have discussed the Smart City Mission as a flagship project under NDA to create 100 smart cities between 2015 and 2020. We are talked about you know how the mission actually converges with several other urban environmental national schemes like AMRUT, HRIDAY, housing for all, national urban sanitation policy, etcetera.

We have talked about the strategic components under the Smart City Mission and the pillars and sub-pillars. Pillars you remember right the pillars physical, social, economic, institutional pillars and the sub-pillars within each of these pillars on which smart city rests we have discussed all these pillars and sub-pillars here. And we have shed light on the role of information communication technology as the enabler quote unquote enabler of smartness.

And along with discussing the implementation status, in this lecture, we have also touched upon inadequate focus on environmental components you know inherent in this smart city plan. If we compare it to sustainable development you know compared to sustainable development indicators for that matter, so far as UN DESA indicators are concerned that is United Nations department of economic and social affairs.

So, and this is something which again we will be taking up in our next lecture so.

Thank you all.