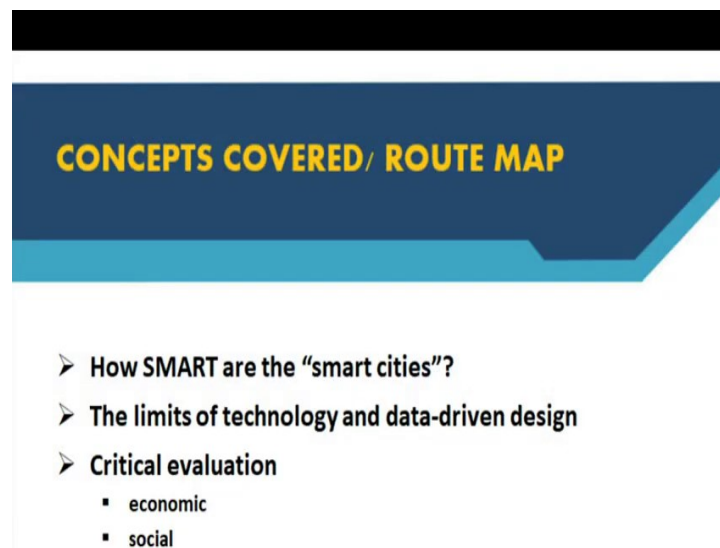


Urbanization and Environment
Prof. Jenia Mukherjee
Department of Humanities and Social Sciences
Indian Institute of Technology, Kharagpur

Module - 03
Urban (environmental) trajectories in India: Plans, policies, visions and missions
Lecture - 16
“Smart Cities” Critique and Contestations

So, good afternoon everyone and with this we are in lecture 16, which is on Smart Cities. And we have already covered smart cities in the previous lecture, that is lecture 15; but here we would be discussing you know the Critique and Contestations surrounding this doctrine of smart cities and also specifically Indian smart city mission.

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So, you know the concepts that will be covered in this lecture or the route map that I will be following, would be around this critical evaluation of you know the smart city concept and smart city practices and actions. So, the first question that I would like to raise here is, how smart are the smart cities and I will be sharing my acronym you know; so I will be sharing the elaboration of this acronym smart, this is my own formulation.

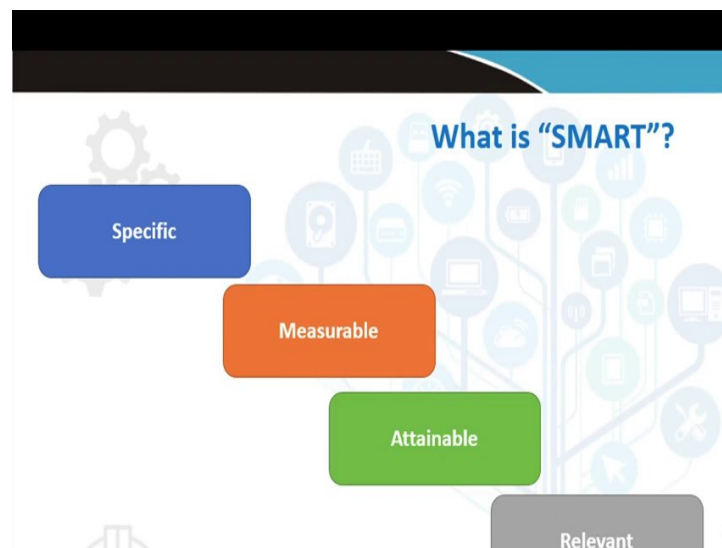
So, you know we would be using this formulation to basically you know see whether this smart cities are really smart or not. We will also discuss the limits of technology and data driven design. If you remember the previous lecture, you know we had discussed that

how the smart city absolutely relies upon information communication technology and also IOT, which is internet of things and everything here is data centric and technology you know enabled smart programs and smart actions.

So, but can technology and can data decide everything? So, if we are overpowering technology and overpowering data and it is outweighing social and other environmental parameters; does the smart city conceptualization really make sense? So, we would definitely be discussing you know the smart city discourse from this particular perspective.

So, finally, we will be kind of, this lecture would surround round a critical evaluation and qualitative assessment mainly across several parameters. So, mainly the three parameters of economic, social and environmental you know parameters or components. So, how these components have been really addressed in the smart city program that India is, I would definitely say currently obsessed with.

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So, yes this is I think like smart, if we elaborate smart. So, smart can stand for specific, measurable, attainable, relevant and time bound. So, now, if we take each of these parameters again and see how a smart city design or smart city plan actually kind of pertains to these specific components; we will be able to understand the larger dynamics of you know quote unquote smartness, so far as Indian urban environmental template is concerned.

So, specific you know it is kind of imperative that each city should actually have its own narrative. So, the specificities are very very important for particular urbanscapes or for particular you know cityscapes for that matter.

But is these smart city agenda or the smart city discourse properly addressing the so called quote unquote epistemology of particulars? So, this is a question that we will be raising here and also try to find out what is actually happening, you know so far as the execution of the smart city plan is concerned.

The measurable and attainable variables are measurability and attainability, these are also very important variables that should determine the success of you know the smart city agenda. So, we will, but who would you know kind of, who would determine these indicators?

So, and like what about the authenticity question? So, these are also some questions which we really need to raise and think about. Then relevant, so far as relevance is concerned; like these smart city concept or the idea or the plan is actually relevant, would be actually relevant for whom and at what cost.

So, to which section of society would the smart city be able to cater to? So, this also you know brings us to the question of the larger rationale or relevance of the smart city program for particular sections of the Indian society and also you know you can understand that as yeah this is part of global vision. So, this is not definitely limited within the Indian contour; but it definitely has a kind of an international, international outreach.

So, we will this we will see this when we discuss the involvement, participation and engagement of you know transnational funding agencies, organizations and actors in the smart city story. Then the time bound. So, again the major question is that, is it always possible to really come up with time bound solutions for timeless urban phenomena and complex processes?

So, this is also another important question, which social scientists mainly need to pose you know before bureaucracy, technocracy and also you know the I mean people who think that; I mean the whole story should be understood from the technical point of view. So, this is a question I think I would like to put in front that, whether it is possible to

provide time bound solutions to complex you know urban process and phenomena which are actually timeless. So, let us think about this.

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Now, one should remember that you know when, immediately when this smart city idea was launched or floated in the union budget of 2014 and 15; opponents they critique this idea and there was like large scale criticisms and you know critiques and their opinions it swept, it flooded the Indian scene. And like urban experts like Ayona Datta for example, considered the smart city to be the 21st century utopian urban experiment, right.

And the three major you know criticisms that opponents had wonders with or they are apprehensive about or that, you know the smart city would actually entail economic competition on one hand, social polarization on the other. And of course, you know though I mean these corporate giants they are kind of spawning this slogan that, smart is green and smart is sustainable; but you know we really need to think about ecology and how ecology will be impacted by these smart city projects.

And whether you know through the implementation of this smart city projects, there would be a metabolic rift; whether a metabolic rift would be created between nature and society at large or not.

So, these I know these are three important perspectives; economic perspective, social perspective, and environmental perspective and we should also remember that they are

not disparate you know components here, they are also embedded, they have whole lot of integration.

So, it is important you know to also take into consideration what the opponents are really warning us with. And in this presentation, I am going to discuss you know as I mentioned and it is also there in the title of the presentation; that we are going to discuss the contestations surrounding the smart city discourse and plan and mission, so far as the Indian context is concerned, yes.

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The “competitive” approach

- ‘Challenge’ or competition method to select cities for funding
 - Stage 1: intra-state challenge
 - the highest scoring potential smart cities will be shortlisted and recommended for Stage 2 of the Challenge
 - <http://smartcities.gov.in/content/innerpage/>
 - Stage 2: “City Challenge” – Smart City Proposal
 - what is the proposal for financing of the smart city plan including the revenue

So, if we take a look into the financial part of it, the economic part of it. I must say that you know this is the ever first program under MOUD, which is this ministry of urban development, where it is it has been mentioned and if you access the websites, smart city website of the government; you will find that they are mentioning blatantly that, you know they are actually kind of they are, they have floated a competitive concept. So, the way through which cities can actually avail funding to become smart, to become smart cities, it entails whole lot of competition.

So, cities can only be selected through this challenge mode or competition method. And this competition would I mean, there are two stages through which this competition would take place. So, stage 1, stage 1 is all about the in intra states challenge; which means that you know the state Indian states or maybe union territories, within any

particular Indian state or within a union territory, cities would there would be a scoring criteria right, there would be a scoring criteria and cities would submit proposals.

And as per the strength of each proposal, scores would be given you know and this would be mainly determined by the state and states advisory committees and advisory bodies. And you know those cities which will be able to, I mean score good; they would be shortlisted and they will only be able to make it in the next round or the second round, which is the city challenge round.

And I have quoted here from the smart city website itself so far as stage 1 is concerned; the official website it announces or it proclaims that, the highest scoring potential smart cities will be shortlisted and recommended to participate in stage 2 of the challenge. So, as I mentioned that you know, so the whole I mean shortlisting will be done on the basis of the scores, that each city would actually you know get and the highest scorers would make would then be able to move on to stage 2 or the second round.

And the second round is all about city challenge. So, where you know cities from different states or union territories of India would finally, you know compete for the final round and they would draft and submit smart city proposal and the whole lot of components are should be there.

So, they have to show a model and here they also have to mention that you know and justify that, what kind of development they want, area based development or retrofitting model or you know Greenfield development, these are the strategic components, if you remember we had already discussed in lecture 15.

So, here the cities have to make a model, where you know the cities would flesh out that what kind of; what kind of development would suit them the best and the rational and the logic has to be provided in the smart city proposal. And it has definitely to be very much in tuned to the vision of the you know larger smart city goal and this is very very important.

So, one important component is that you know in the smart city proposal has to show that, how several stakeholders were consulted when the proposal was actually drafted. So, this is one important part; but the another important part which is very very crucial here is that, again I have quoted it from, I have taken it from the website. So, it said what

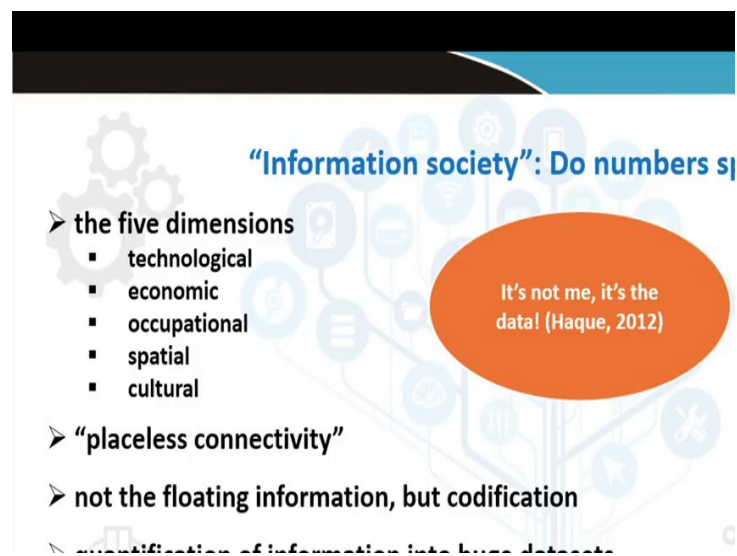
is the proposal for each city, you know which will be competing in the second round or the last round; that what is the proposal for financing of the smart city plan.

So, this finance part becomes very very important. So, what is the proposal for financing of the smart city plan including the revenue model to attract private participation? So, this would be one of the most important determinants, determining whether the city would be able to you know make it in the final round or not.

And Ayona Datta of course, like the urban expert, the urban critique you know of the smart city discourse; Ayona Datta says that, you know it is absolutely visible here that how you know this kind of a competitive approach, it kind of it demonstrates neoliberal ethos. And here cities compete to kind of attract foreign capital and also attract local investment companies and partners.

So, this is the present day new liberal entrepreneurial urbanization, which is absolutely in tune to corporate interests and you know aspirations of corporate lobby and not in tune to the you know the to larger social benefits for masses.

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So, yes. So, with this I move on to another book, which I have recently read and this is by Frank Webster. So, and this book came out in 2015, 2014 sorry and the name of this book is Theories of the Information Society. So, this book is very interesting and if possible you can you know at least go through the introduction of this book.

And here Webster he says that, you know the present society is actually an information society. And he also tries to understand the relationship between data and information on one hand and cityscapes on the other. So, what is the relationship, what is the interrelationship between cityscapes and information?

So, he is and the major question he raises in the introduction of the book is that, you know what determines or what kind of or what are the parameters or indicators that actually explain that a society is an information society? How would you say that you know this particular society has become or has achieved the status of information society?

So, then he says that, you know there are five dimensions through which one can explain this information societies. So, info and he says. So, this five dimension can also be considered as five attributes of the information society of our contemporary times. So, the first dimension is technological. And what does it mean? It means that, you know all of us are facing it; this is the present reality of placeless connectivity.

So, what is placeless connectivity? So, we remain connected, but through I mean this is a wireless connection; no electricity I mean, its not like electricity grid, it does not really required a gross level, but at the same time I mean the technological apparatus is also very very complex. So, this duality and ambiguity is also very much there. But what is more important is all about placeless connectivity and how everything is being determined by technologies, technologies like sensors, cameras you know etcetera.

And economic for example, against how you know this information economy is very much shaped by you know advertisements, research and development, etcetera; similarly like occupational.

So, how again occupational works? So, far as occupational work is concerned, we know that you know we know how there is there has been a spark a rise in the service sectors like telecommunication, computer engineering etcetera and how it has also has opened in a market for engineers working you know in these particular sectors.

Again spatial, spatial is also very very important; because spatial its all about geography. So, geography of you know info. So, its all about like information networks connecting homes, you know different other locations, schools, marketplaces, etcetera. So, how a

seamless integration of seamless and wireless connection has been crafted and forged you know across locations.

And finally, you know he also talks about the cultural part or the cultural component where he says that, you know previously we used to get information or even you know we used to become entertained through television. So, television was very important mode of information, providing information and entertainment; but now there are so many other means and now you know we do not really need to sit somewhere to gather information, we can move.

So, the mobility, you know the mobility quotient has absolutely changed; because now information we can actually track information from several devices including our mobile phones, laptops, you know Walkman, iPod's and the television with mobile phones also have come to our hands.

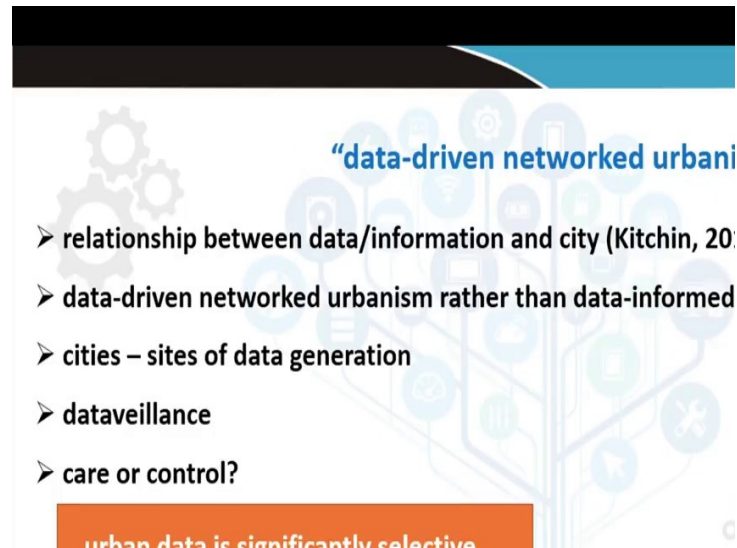
So, this has been a major change. And, but you know apart from all these you know discussing these various attributes and dimensions; Webster also talks about the nature of this information and he says that you know the nature of the information is that, it is not floating information, but it is codification. That is how that is how information is transmitted from the source to the receiver, you know through this seamless integration of you know this kind of placeless connectivity.

Again another warning that is their you know in this book is that, there is too much of quantification. So, it is absolutely dependent on quantification of information into huge datasets. So, these data sets are all outcomes of you know quantitative, quantitative techniques and you know they are they are all numbers. So, then the final question is, do numbers speak it all? And there is inadequate or almost no qualitative meanings and interpretations.

We do not get any qualitative meaning and interpretation you know infused with these kinds of quantitative data sets. So, do numbers speak it all? I think I will be able to better explain this in my next slide, which is on, alright. So, this is also by Haque, where he says that; its not me, it is the data. So, how you know data dominance or domination of data is actually one of the major indicators of our contemporary urban you have seen.

So, yes. So, I think like you know this robust quantitative information and this quantification of information into huge data sets with no or I mean inadequate qualitative meanings and interpretation infused to kind of, I mean to make these data sets significant; I mentioned that you know, I will be able to better flesh it out in my next slide, which is on data driven network urbanism.

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And so, I am quite influenced by the work by Kitchin, which came out in 2015. So, he you know he has talked about this dataveillance and he also talks about. So, in the program city, he talks about the relationship between the information and city like Webster and he says that, you know how contemporary urbanism especially or urbanization especially you know through this capsule smart city projects is actually facilitating data driven networked urbanism rather than data informed urbanism, right.

So, cities are have become like sites of data generation; huge data sets, we are now exposed to huge datasets. And because like lot of technological, I mean a whole lot of technological sophistication has been accomplished; so like sensors, cameras, GPS, tele portals and this you know several other technological devices, every second these devices are actually tracing and tracking data. But then the question is you know; so this dataveillance terminology is so very important.

So, of course, you can understand that this is a, this is a word which you know it is an outcome of the fusion between two words data and surveillance. So, the question the

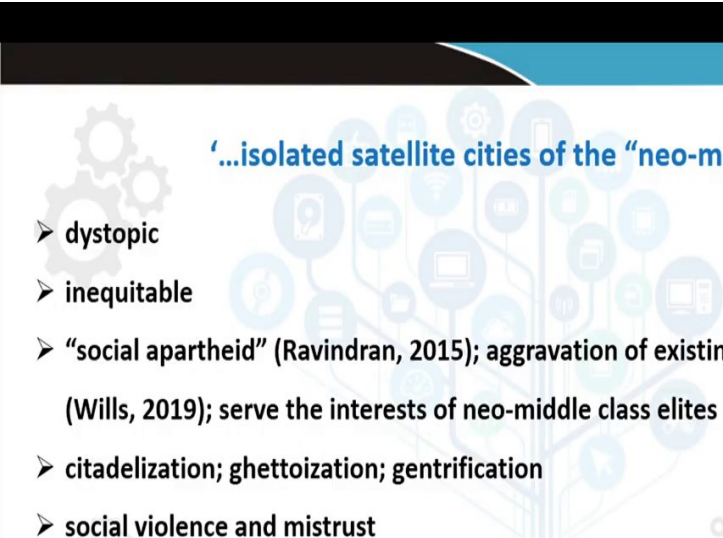
major question is that, so cities have transformed to sites of data generation; but this data is the statecraft, using these data only you know as it really cares for us or through this data is a state graph also trying to control us.

So, I would like to draw your attention to the picture that is there in the right hand side of this particular slide and I think this illustration or the picture explains it all. So, it is very important for us, you know to also remain aware of this dataveillance. And another important fact is that, you know this urban data is sometimes it is very selective flawed and it is politically infected.

Again the same question that, how can we you know how can we ensure the authenticity of data? And does data or numbers have the capacity to convey and narrate everything? So, again the same question that I raised in a previous slide, the do numbers speak it all. So, it is very important for us you know to understand that why and how data is being tracked; why and how you know such huge data sets are being generated, and whom is it actually benefiting.

So, this is a crucial question that we need to raise or ask you know within the context of smart city, because smart city is technology enabled and technology driven and it is data centric.

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'...isolated satellite cities of the "neo-m

- dystopic
- inequitable
- "social apartheid" (Ravindran, 2015); aggravation of existing (Wills, 2019); serve the interests of neo-middle class elites
- citadelization; ghettoization; gentrification
- social violence and mistrust

So, with this I then move on to the more you know social I mean criticisms that talk about, I mean that bring to the fore this social question. And it says you know the experts like Ravindran and Ayona Datta and Himanshu Burte they directly they say and they show and demonstrate that, how you know this smart cities will actually you know it will increase and aggravate social inequities, rather than solving or addressing social exclusions.

So, it would cause a social apathy and you know the smart city vision is dystopic, its inequitable and like. So, for example, we can use a very interesting or a powerful metaphor here. So, the metaphor can be of you know like having islands of.

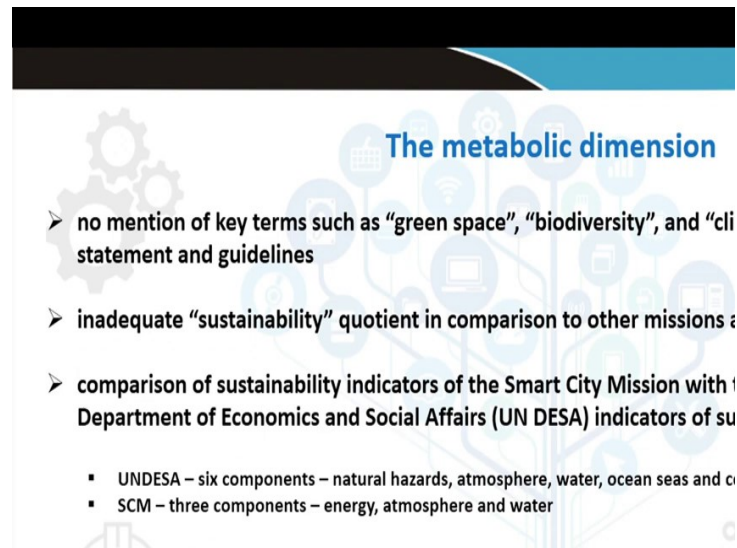
So, having islands of you know this smart cities in the middle of the vast sea of poorly services and impoverished villages right in the Indian subcontinent. So, and this kind of you know this islands of smart city would definitely you know the outcome will be the juxtaposition of citadelization, ghettoization, and gentrification.

So, this will juxtapose you know the emergence of citadels, ghettos and you know walled communities and walled spaces. And so, definitely they are visible forms of spatial inequities, we cannot deny this fact. So, we have to accept this fact that, you know they are you know in these programs, in these plans if you know take a minute look; you can immediately see you know how spatial iniquity is very much you know kind of embedded in this whole doctrine and discourse.

So, and this will definitely engender like social violence and mistrust. And here I have quoted from Burte that where he says that, a class based; you just take a look into this blue quotation, I mean the quotation in this blue box. So, Burte says that, it is a class based spatial categorization of population it. So, I mean the outcome is will be class based spatial categorization of population.

So, world class urbanism of smart cities for the upper classes and the creaky old urbanism of existing city cities for the creaky old middle and lower classes. So, that is why smart cities have been explained as isolated satellite cities of the new middle class.

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Yes, so now I will move on to the final dimension or the environmental dimension, which is you know the metabolic dimension. So, again I must say that you know metabolic rift if some of you do not know about what metabolic rift is all about, maybe first let me give a little bit of background and then I can you know draw your attention to the facts specific to this particular discussion on smart cities.

So, metabolic rift is a concept which was actually used by or which has been borrowed by John Bellamy foster from Karl Marx. So, and it talks about you know. So, Karl Marx had talked about two major contradictions in our society. So, one contradiction between capital and labor, and the other country contradiction between man or we can also use a woman, and or human beings for example, human beings and nature.

And these two contradictions are also related to each other. And John Bellamy Foster he is a very renowned like Marxist environmental sociologist, who has talked about I mean it is a, so if you read his books; so he has written a book called Marx’s Ecology. So, there he has used this metabolic rift concepts. So, he is also written articles that also talks about metabolic rift concept.

So, and through this concept, we get an idea that how you know the capitalist mode of production has actually created this rupture between the functioning of the human society and the and how I mean and the functioning of environment, right. So, the metabolism that was there between nature and society, the pre capitalist period, it has

been lost at is, it has been ruptured under the capitalist mode of production. So, that is a major idea.

So, we do not have scope in this course or in this particular lecture to go into details of metabolic rate; but you know metabolism, by metabolism you know or urban metabolism it is all about the relationship, the deeper relationship of the city with its larger ecological infrastructure or with its environmental template for that matter. So, I just came across a very interesting article which has been recently published in the international journal of urban, sorry the International Journal of Sustainable Bit Environment.

So, it is an Elsevier journal and this article has been published by Randhawa and Kumar. So, this is there in the reference list. So, please go through this article; because I think this is only one major work that you know talks in detail about the, I mean about how the issue of sustainability has not been adequately or properly addressed in this smart city plan.

So, what I mean if you go through the article, it is a technical article and you also like you will get, you will see quantitative tables; you know tables that are outcome of regulation and which they had applied you know in this particular in writing this article. But these are the key findings which I have taken from them and then they say that, no mention of key terms are there; you know if you see the smart city guidelines and the smart city policy.

So, in the SCM that is smart city mission statement and guidelines, there is no mention of key terms as green space biodiversity etcetera and climate change as well. So, that is what they are saying. So, we can also like you know kind of cross check and validate it; because this article also came out in 2017 and it will also be important for us to see like if there has been further development in the last three years or not.

But you know Randhawa Kumar they say, they specifically mentioned that, they could not find any mention of key terms like green space biodiversity and climate change; I will also provoke you to cross check it. And so, they say also say that you know the sustainability quotient is inadequate or insufficient in the smart city mission guidelines, if it is compared to other missions and programs.

So, you know for example, they also discuss like the sustainability indicators or the environmental components that are there in UNDESA for example. So, United Nations department of economic and social affairs. So, they have compared it. So, they have made a comparison of sustainability indicators of smart city mission with the United Nations department of economics and social affairs that is UN DESA indicators of sustainability.

So, and the article shows or discusses that why UNDESA has six environmental components including natural hazards, atmosphere, water, ocean, seas and coasts, biodiversity and land; SCM only has three environmental components energy, atmosphere, and water.

So, again they say you know this, so their final argument in this article is that, this that this doctrine or this policy or mission actually lacks concern towards the natural environment, which is otherwise a very important dimension of sustainable development of a city.

So, though this corporate you know lobbies and also the bureaucracy is spanning you know slogans like smart is green and smart is sustainable; but you know if you really do a very proper critical assessment, you will find that it really lacks concern towards the natural environment, which is an important dimension of sustainable development of a city.

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“Disembedded”ness and the “re-embedding”

- urban problems are seen only as technical problems
- political, cultural and social nature of problems neglected

Each city has its own narrative.

The slide features a background with faint icons of gears, a lightbulb, a smartphone, and a network of lines. A large blue oval at the bottom contains the text 'Each city has its own narrative.' A black arrow points from the right towards this oval.

So, this is the final slide in this lecture, where I would like to draw your attention to this concept of disembeddedness and here I am actually drawing from Polanyi, Karl Polanyi and his very renowned book called the Great Transformation. So, in this book called Great Transformation, Karl Polanyi talks about you know, he also makes comparison between capitalist economy and you know economies which function in the past societies, that is in the pre capitalist societies.

And he says that you know in past societies, economy was not disparate from society or social relations; even it was not even a kind of noticeable or identifiable category. So, it was absolutely enmeshed you know in social relations. But it is from the time of capitalism and if you see capitalist economy that; then capitalist economy actually you know is or it became absolutely disembedded from larger equation from its larger equations for the society.

So, it started functioning as quote unquote loose and autonomised; remaining blind you know to the workings of society or remaining blind to the society at large. So, there is a kind of a blind mechanism here and everything is determined by the market and like, so market is overpowered and determines almost everything.

And so, he talks about this disembeddedness and I argue here that you know the smart city doctrine or the smart city discourse and the smart city mission, this is also very much disembedded you know from the you know larger political, cultural and environmental template that India actually offered. So, here urban problems are only understood as technical problems, physical problems.

But you know unfortunately if we go through the guidelines in this SCM, I mean we will not be able to say that you know that the political context, cultural context, and social context are very much there. So, it is disembedded from the larger political, cultural, social, and environmental context of the Indian subcontinent.

And finally, I would like to draw your attention on this particular book, again which is there in the right side in the slide. So, this book is called sustainable urbanization in India. So, I edited this book 5 years back and during that time only you know this whole lot of cynicism, criticism; on one hand and on the other hand whole lot of glorification of the smart city discourse was going on, because it was absolutely fresh and new during that time, 5 years back 2015.

And so, here, so this is actually an outcome of conference of a 3 day conference that took place in my previous institute, where I used to work before I joined IIT Kharagpur. So, this is the Institute of Development Studies Kolkata and I organized the conference you know on this particular issue of sustainable urbanization very much in tune, you know to the gospel of sustainable urbanization, which was floated by the United Nations during that time.

And here you know the major argument that this book that, this book raises or makes is the very fact that, why it is important for us to concentrate or to plunge into the micro political settings of each city; because each city has its own narrative. The smart city discourse it will blind you with the fact that, you know the same size fit solve; it provides a kind of same sites fit solve solution. But you know this I mean this is very reductionist.

And definitely, if you start understanding problems of urbanscapes from the same site fits all kind of a lens; then definitely your lens is dystopic and it is reductionist. So, this book you know through several case studies across various cities from western, eastern, northern, and southern India; so cities like Vizag, Hyderabad, Bangalore and also small cities like for example, Patna and other cities like Ahmedabad, Kolkata, Mumbai.

So, from various case studies, here you know we have discussed that why understanding each cities particularities or understanding particularities and intricacies of particular urban space is very important to identify challenges and opportunities that are available in specific, within specific urban contours and contexts.

So, this epistemology of particulars remain a very very important perspective or lens for us to understand you know or to capture micro political urban realities, so far as the huge diverse and complex Indian urban and Indian urban environmental scene is concerned.

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So, these are the references, you can go through some of this and this is the conclusion. So, in the conclusion I would like to highlight that, you know this presentation has covered or has discussed the inadequacy or exclusions in the smart city agenda; discussing economic, social and environmental dimensions. We have covered you know this we have used these three parameters to understand the exclusions or inadequacy of the smart city program.

And we have discussed the problems associated with quantitative data sets that portray data as apolitical and neutral. So, why qualitative dimensions are important and then we had also discussed the rationale behind pursuing in depth explorations of micro political settings which should shape urban planning and development discourse than the same size fits all solution at national scale. So, thank you, please go through some of the references.

And you know plunge yourself into and delve deep into you know these inadequacies and exclusions that are embedded in the smart city discourse; because it will be important to know both the technical and the social concurrently. So, I encourage you to go through the references, to have a more clearer; I mean to have a clearer and sharper understanding of contemporary urban environmental scene.

Thank you.