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

## Lecture - 40 The Way Forward

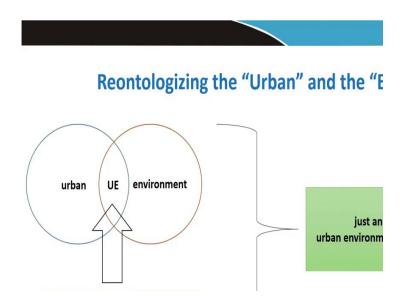
(Refer Slide Time: 00:16)

## **CONCEPTS COVERED/ ROUTE MAP**

- > stock taking
- the way forward
  - all-encompassing approaches
  - trans-sectoral exchange and collaboration

So, in this final lecture I am interested to do stock taking and also you know discuss the Way Forward, the significance of this all encompassing approaches and the kind of perspective that we get through the deployment of this all comprehensive approaches. And why it is also important to transcend from this trans-disciplinary knowledge domain to you know more fruitful and productive trans-sectoral exchange and collaboration and they are not antithetical.

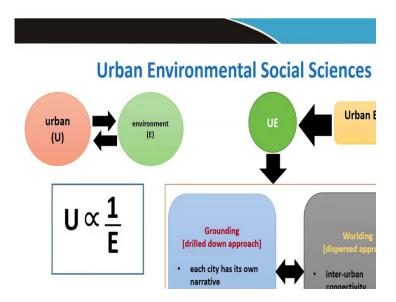
They are of course they are in tune to each other. They should be in tune to each other in order to tackle our contemporary crisis and challenges that are dotting the, you know this era of the overlapping scenes or the pandamo scene. And why this is important then for us to actually think about and design poly-centric multi-scalar innovations for this multi-polar wall and finally, why you know this transformative shift is imperative from ecology in to ecology of finally, to ecology for cities.



So, you know if you remember when we started this course I argued, I pointed out that this whole course is about re-ontologizing the environment, the urban and the relationship between the two. Because you know urban and environment, are still understood in terms of, in terms of, a kind of you know in terms of contradictory connotations in that sense. Because like, the whole understanding is that urbanization is actually happening at the cost of the environment.

So, kind of an inversely proportional correlation is actually drawn, but then we discussed , we said that you know through this course we will be able to kind of re-ontologize the, these categories and also the relationship between them, through you know, by or getting by getting exposed to urban environmental social sciences frameworks.

And finally, the larger rational or the larger agenda is to craft and forge this just and resilient urban environmental trajectories for the whole world at the global scale. Then now the question is have you been able to do this.



So, how far urban environmental social sciences frameworks had been useful for us to kind of re-ontologize you know this relationship from an inversely proportional relationship to you know the understanding that cities and nature they are intricately intertwined with each other and they are inseparable categories.

So, there is no boundary, and nature and culture, urban and environment they are not binaries, but rather this is UE, this is Urban Environment as a composite whole where the urban and the environment you know, they are embedded, they are enmeshed as a composite category in that sense.

And I think we had been able to arrive at this particular conclusion through our continuous discussions and where I have kind of dedicated at large chunk of this course in discussing urban environmental social sciences frameworks. Mainly, you know these two major frameworks of or approaches urban environmental history and urban political ecology and also you know cross fertilization between them and these methods and methodologies.

So, finally, you know now we understand that why the larger discussion or the larger understanding in terms of urban environment has to rest in this continuous concurrent and you know simultaneous approach in terms of grounding and worlding. So, we have to actually understand urban environmental trajectories by deploying this grounding

which I called drill down approach and worlding disperse approach you know together, simultaneously.

So, I have taken grounding and worlding from the recent book by edited volume, which came out in 2019 by Henrik Ernstson and Sverker Sorlin where they discuss or they talk about you know this grounding approach, but at the same time worlding approach. Why worlding and grounding you know should be taken up simultaneously and then you know these two key terms provided me with the edge to kind of think about to you know reimagine the urban environment.

And then I could understand that you know how this urban environmental history and urban political ecology all the discussions that we had you know, that we had done in this course across a number of lectures you know dedicated to urban environmental history at global scales.

So, far the South Asia is concerned and same you know urban political ecology and also like the more recent advances in these methodological frameworks and how they are also you know kind of converging with each other to come up with more all encompassing and overarching frameworks to be more inclusive or the most inclusive than ever.

So, if I so, when I started thinking about you know what is this grounding approach and how you know UPE and UEH can help us to think about this grounding approach. So, you know if this grounding is actually the a drill down approach, so, when you were discussing cities when you were discussing cities environment, when you were discussing city nature relationship, when you were discussing the making, remaking, shaping, reshaping of urban nature, you have to drill down.

So, you have to have this larger understanding that each city has its own narrative and again any city is actually not a homogeneous space, but they are like dotted with spatiosocial fractures marked by conflict ridden, power laden you know hierarchies in terms of allocation or access to resource.

So, that is why it is important for us to minutely then in look into the inter settlement zones. Again even within one particular settlement zone there are intra settlement spaces. For example, you know we had discussed Yaffa Truelove's article on what happened you know in this in the Rampur Camp, in the Rampur Camp slum in Delhi.

So, then we now understand that you know there are several other components or variables, aspects, social aspects you know like gender, like ethnicity, like religion which also need to be understood you know when we are actually discussing cities or cityscapes.

So, political ecology definitely enable us to understand that yes the class analysis remains the most significant, but then how all the other processes like gender processes, ethno religious processes how these processes also they are in conversation with class and capital accumulation.

So, the drill down approach has to go you know minutely from the particular narratives of each particular city focusing on the epistemology of particulars to inter settlement zones inside a city and through intra settlement spaces. And also, we had discussed that why the embodiment you know the embodiment phenomena also needs to be taken into consideration.

So, we had also discussed embodied urban political ecology. In that sense where we also definitely even within gender, we need to discuss male, female, queer. And I think there is dearth of literature so far as you know differently able communities and also like aged communities are concerned.

So, these are the, these are the avenues which remain then open for us to plunge into a more nuanced and fine grained analysis of you know urban environmental equations. So, while it is important for us to kind of you know deploy these grounding methodology by following this or practicing this drill down approach.

On the other hand, the worlding methodology the dispersed approach has to be there parallelly, simultaneously, alright. So, where we need to really also understand urban explore the urban by looking into and by exploring inter urban connectivity. So, where the urban remains beyond the urban, so, the urban is not only about the city, but also its larger you know, interaction with its wider environment, with its larger ecological infrastructures in the form of wetlands, in the form of water bodies, in the form of pasture lands, in the form of arable land etcetera.

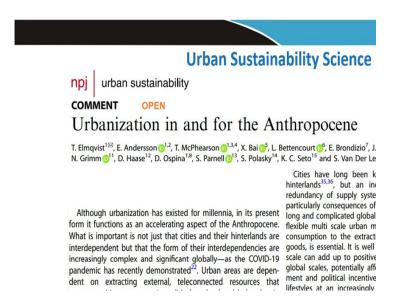
So, it is important to bring into this discussion what is going on in the peri urban interface and the relationship between the continuous and the constantly dynamic

evolving relationship between the urban and it is you know like beyond urban counterparts.

So, the analysis has to be like I think of course, cross spatial scale and is it has to be a like multi-scaler analysis. And this is something which you know this is a lesson which I think environmental history, urban environmental history and urban political ecology both these frameworks you know kind of put before us.

So, yes so, we have seen that why and how multi sited analysis and also site multiple, multiple elsewhere these frameworks and these approaches along with an apart from situatedness together help us to do more, I mean to do a sophisticated and nuanced exploration of urban environmental equations you know shaping urban nature.

(Refer Slide Time: 10:49)



So, and the good news is that I was just talking about urban social sciences framework, but if you see sustainability science where the people mainly they are from the natural sciences background and also like we have these giants like Elmqvist, Tim McPhearson then we have Dagmar Haase in this. So, this is the latest article which I accessed on this then we have Carl Folke. So, you know they are like big giants in the area of ecosystem services and sustainability science.

And I was amazed you know to read this article actually yesterday because it is a very recent article which has been published just this year I think one and a half month back.

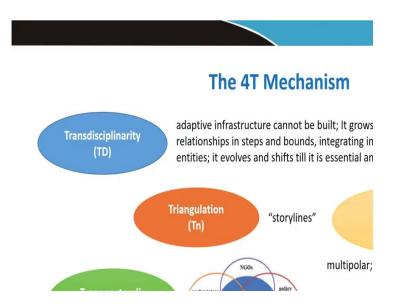
And the kind of things that urban environmental history and urban political ecology the lessons that these frameworks are teaching us the same thing now the sustainability science experts are also talking about.

So, for example, if you see, I mean, I have just copied extracts, excerpts from this article by Elmqvist et al., which is urbanization in and for the Anthropocene where he talks about that why you know the local along with the global processes together need to be understood in detail and in a very systematic way.

And he also talks about you know the changes you know the contemporary changes, the scale or the landscape you know of extended urbanization how it is actually putting pressure on us, to really design resilient and innovative frameworks. So, what can we do? How can we you know kind of come up with a proper decision making strategy and proper an inclusive governance systems through which you know the present urbanization and urban environment challenges can actually be tackled and dealt with?

So, you see and you will find that you know, if you, if I do not, I do not, if I did not put the title of this article and also the names of authors and if I would have asked you know can you guess that who could be the authors, I think you would have told me that you know must be some urban political ecologists.

But they are not urban political ecologists in that sense, but they are urban sustainability science experts or they are you know sustainability scientist. So, the good news is that you know this shows that how the trans-disciplinary domain is actually forging.



So, how people are thinking on similar lines, so, what is required is now actually you know the 4T mechanism. So, this is what I call the 4T mechanism. So, transdisciplinarity where the natural scientists, social scientists and everyone and anyone under the sun working on the urban environment you know, mainly, the epistemological, conducting epistemological research they definitely should talk to each other.

And there should be this collective understanding of complex systems. And this transdisciplinary approach and domain would then enable us to understand that you know infrastructures or adaptive infrastructures actually cannot be built, but they grow slowly and extensively. So, I think this is this could be one of the fundamental understanding so far as urban environment is concerned.

Then we need triangulation. So, this is the second T of this 4T mechanism. So, by triangulation I mean continuous and constant validation and cross validation of data, of stories, where we need to capture plural stories, where we need to capture story lines. You know mainstream stories, dominant stories, deep repressed stories, everything together to then really you know kind of get the composite story about the urban environmental scale.

So, triangulation has to be something which needs to be continuously implemented to keep on validating and cross validating data through the deployment and application of you know multi nodal and multi modal methods and methodologies.

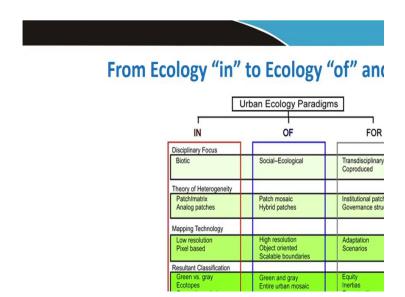
So, then of course, this transdisciplinary epistemological understanding finally, has to transcend into trans-sectorality. So, where like all the different actors and stakeholders working on the urban involved and engage with urban environmental issues should come together and this should not you know now, this knowledge system should not or the domain of knowledge should not remain restricted only to the academicians.

But the academicians also have to learn from the other actors and the other sectors so that you know there can be reciprocal learning. And through this mutual exchange more inclusive and more practical and feasible innovative solutions can actually be designed and implemented.

So, we really need to craft a common language of conversation across multiple stakeholders. And the final T is trans-local. So, we are in this multipolar wall and where you know this perspective and like the implementation design has to be kind of multiscalar, polycentric.

Because you know we need to think about it social, cultural and ecological diversity how you know this diversity should thrive to cater to and to address the larger question of sustainability you know, through new urban rural regional integration.

(Refer Slide Time: 16:53)



So, high time for us you know or high time for the planet to kind of, to high time for the planet for this transformative shift to get enacted. So, this transformative shift from

ecology in to ecology of to ecology for cities. So, like ecology for cities actually it combines you know both this knowledge systems ecology and in ecology of cities.

So, ecology in cities where the disciplinary focus remain like restricted to the biotic and in ecology of cities you know the scientists or the you know the scholars they basically or the researchers they basically try to understand the urban environmental relationship by looking into urban metabolism and also the flows the sustainable flows between urban and beyond urban counterpart.

And ecology for cities is most significant because it is loaded with the promise of you know the experts engagement with other actors. So, it is loaded with the promise of transdisciplinary and trans-sectoral co-production. So, I think and also like for example, the article by Bahadur and Dodman which is called Disruptive Risks and why do we need to you know kind of come up with disruptive resilience to tackle with the disruptive risks of our current times.

And I had discussed this article I think in lecture 6, where I discussed you know COVID crisis and urban informality in the global south mainly. So, in that article they talked about disruptive resilience and one of the key parameters or attributes of disruptive resilience should be you know engaging with the local actors and involving them as full partners ok.

So, the participatory method or the participatory you know design should not be faulty because then we have to finally, you know we have to, the brunt of burden will finally fall on us and as victims we now know that you know this should not be the case.

So, why and how then it is important to actually involve and engage with local partners with local experts who have like whole lot of knowledge about the functioning of you know of cities of the relationship between city and nature and of adaptive infrastructures? So, it is important to know from them and that is why engage them as full partners you know in our project design and implementation.

## **Towards the Hopeful Narrat**

- > crisis as the opportunity
- > pandemic as the avenue towards imagining and enacting possibilities
- > just and desirable urban (environmental) predicament



So, yes, so, finally, I would like to end with this with a hopeful note. I know that it is not easy to imagine hope during this testing times where you know the ambience is declensionalist, but the my argument would be that you know there is still a whole lot of reason to actually feel hopeful and is more important for us to actually optimize from these useful narratives beyond declensionism.

So, all of us know, that you know crisis also provides us with a platform with a edge to think about opportunities and after a particular point of time crisis actually you know seems to get transcended into opportunity. So, like two days before I was like. So, I was giving a seminar you know because my book was launched by the environment ESEH; European Environment; European Society and Environmental History; European Society for Environmental History, ESEH launched my book, it was an honor and it was moderated by team (Refer Time: 21:03).

And I was when I was talking or presenting the story of you know the encroachment of Kolkata's wetlands and the degradation of the canal system and about the mega march of the cities of urban sprawl and how development drive how real estate you know real estate lobbies are to a great extent impacting upon our cities ecological infrastructures, so, team (Refer Time: 21:30) pointed out that you know that how do you perceive this real estate threat.

Do you think that this real estate threat is finally, of course, its having a severe socio ecological impact, but at the same time do not you think that it is also kind of providing or it may it has the potential to provide opportunities for the different stakeholders and actors to come together to resist against you know this lobby?

For the greater good of the urban environmental scape and for you know for the larger interest of survival of cities, survival of environment and survival of us and by us we I not only mean the human beings, but also all other planetary species. So, that was a kind of an eye opener.

And definitely I think the pandemic also though it seems to be like one of the major crisis, seems to be like an earth shattering moment we are going through, but I still think that it is also, it can be the avenue towards imagining and enacting possibilities. So, the pandemic I think, I will now quote Anna Singh, where Anna Singh talks about acknowledging catastrophe, but also you know enacting and imagining possibilities.

So, I think this pandemic is the proper platform or the you know the exact avenue which can enable us to acknowledge the catastrophe, but also imagine and hence enact possibilities through you know transdisciplinary knowledge domain and trans-sectoral engagements. And lot of stories, lot of positive stories hopeful stories are there.

So, for example, the newspaper clip that you see in my on my right hand side this is today's information where again like the juniors from my university, Jadavpur University they had like kind of come up with websites, with a website which can actually control fake information.

So, there are rays of hope where we see so many people in the form of mask makers, you know donation drivers, pet feeders, fake news controllers who are actually trying to you know enact possibilities. So, it is important for us to also feel hopeful through these stories because all these scattered movements then we can really think about a mechanism through which this scattered initiatives can also you know kind of find a coherent channel through which this can make more concrete and consolidated impact across city scales.

And for example, like there is a plan which has come up. This is the adaptation plan 2020, where the city of Milan they have taken you know, the city has taken full benefit

of this pandemic to do a stock taking of the challenges and potentials you know of the city and like the it is like inner and exterior attributes.

So, it has done a very robust mapping or a situational analysis and it now knows you know its loopholes. So, definitely I know that these are sporadic examples and also each city has its own narrative no city can be compared to other city. But the comparative framework also can be devised in a innovative way.

So, we definitely have lessons to learn from our multiple elsewhere and like all these hopeful narratives and the useful narratives should be enacted upon and should be you know kind of should be optimized towards just and desirable urban environmental predicament.

Thank you.