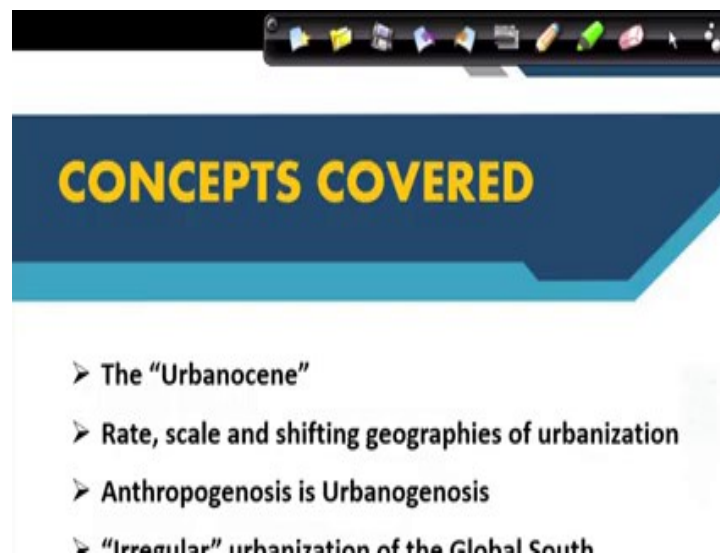


Urbanization and Environment
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Module - 01
The Urban and the Environment during the Era of the “Overlapping Cenozoic”
Lecture - 05
The “Urbanocene”

So, hello everyone. So, today, we are going to learn the Anthropocene and what it is all about. So, this is part of this Urbanization and Environment course and we are still in module 1 and this is lecture number 5, The Urbanocene within module 1 of this urbanization and environment course.

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So, with this let us move on to the major concepts that we are going to cover through this lecture on the urbanocene. So, as I mentioned that you know first we are going to shed light on what this urbanocene is all about because by now we already know about the Anthropocene and the Capitalocene.

So, we had discussed you know these two concepts extensively. We had also talked about the planetary boundaries framework you know as a major approach or a paradigm to kind of validate this present geological epoch which is this Anthropocene.

So, now we are going to talk about the urban story you know in the Anthropocene and this can be explained by the rate, scale and shifting geographies of urbanization. So, we will discuss that and then we will argue that why anthropogenesis is urbanogenesis.

So, when I, so, there are debates about this as well, but then you know the data the information and facts that we have on the current nature, patterns, pace, scale of urbanization that would to a great extent kind of provoke us to understand that you know this is the era of the urban Anthropocene.

Finally, we will be also talking about you know the Global South because this current pattern and nature of urbanization and if you think about this shifting geographies, so, we know that you know this unprecedented mega urbanization that we are encountering today, I mean most of this largest megalopolises they are part of the global south.

So, these are the developing cities they are like expanding, they are increasing in size like anything by kind of consuming and swallowing up or gobbling ecological patches and you know by kind of sprawling into their wider ecological infrastructures. So, we will be talking about this irregular urbanization in the Global South and what are the additional challenges, that is posed in front of the planet.

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“Urbanocene” or the Urban Anthropocene?

- Myint (2018): a transformation from the Anthropocene to the Urbanocene
- Lussault (2020): Anthropocene as the Urbanocene; a spectacular evolution of the earth system, with urbanization as a primary driver
- “Part of story of the anthropogenesis of humans is the

So, Tua Myint, who is an expert on you know basically who is an expert on rural out migration. So, she consulted robust data sets in terms of calculating out migration rural out migration from Asia.

So, her special context her special context remained the Asian cities and Tua Myint through her one of the major works which is known as the long read which came out in 2018. So, she argues that you know we have already transformed, I mean this present context is the context of the urbanocene because this transformation from the Anthropocene to the urbanocene has already taken place.

And, she I mean she said that you know that this global climate change and rural out migration, these are connected and why are they connected? Because like global climate change to a great extent can be explained by changes or transformations in our individual consumption patterns and consumption behavior and also the lifestyle dynamics.

Now, if we see that these lifestyle dynamics in cities are largely different from the rural areas. Though, you know I do not want to kind of draw a linear conclusion on this, but definitely there is no doubt about the fact that the emission rates and the consumption patterns in urban areas are much more than that in the rural areas.

So, what is happening is that definitely you know this is exerting whole lot of pressure from local to planetary scales in terms of extraction of planetary resources. So, this is something which we really need to think about and you know this pressure on the biophysical components and processes of earth and the earth system. This is again leading to the transgression of the planetary boundaries.

So, urban plays a crucial role and I think urban can be considered as one of the very important indicators or even one of the crucial variables, that is crafting this transformation at the planetary scale. So, there is no doubt about the fact that you know this that urban or urban settings really play a very important role in terms of in terms of exerting pressure on the carrying capacity or the underlying resilience of the earth system.

Lussault, while Tua Myint argued that you know there has been a shift from the era of the Anthropocene to urbanocene. Lussault, who is the who is connected to this

urban research lab in Barclay, he was more interested to the you know to this particular coinage which is this urban Anthropocene.

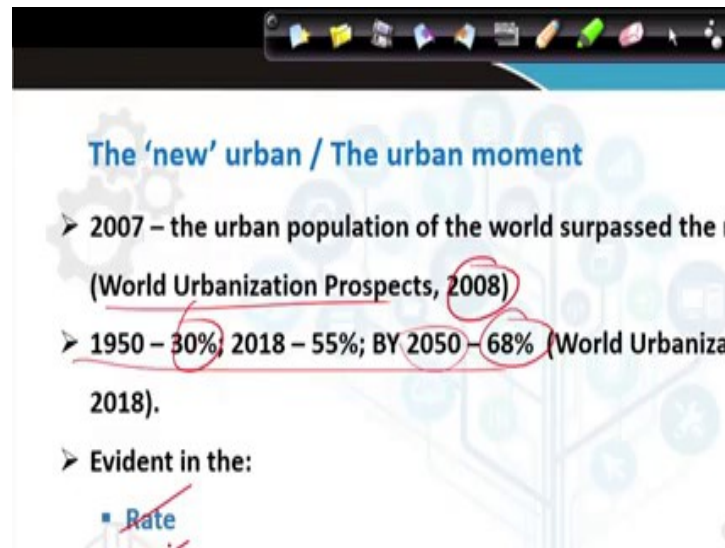
So, Lussault argued that Michael Lussault, see he argued that you know this two urban and Anthropocene they are not disparate, but they are rather connected. So, it will be more scientific to come I mean to use urban Anthropocene instead of you know urbanocene. So, because urban Anthropocene then it you know it is a combination of both these terminologies to show the interconnections between the two.

And, definitely Lussault in his research lab he also does with his team a lot of research on you know these shifting scales of planetary bound planetary urbanization during our recent times. And, of course, they also I mean kind of the this research lab has generated a huge data sets about this spectacular evolution of the earth system with urbanization as a prime driver.

So, and finally, I would also like to talk about you know one very crucial intervention so, the work by Mendieta. This is a very recent work just came out in 2019 last year. So, she so, Eduardo published this particular article called the Edge City. And this article was published in this critical philosophy of race in 2019 and here Mendieta he says that how part of the story of the anthropogenesis of humans is the story of the species urbanization. So, anthropogenesis is urbanogenesis.

So, this is the you know context of the urbanocene where we need to understand this urbanization as an indicator of the current amplitude of the Anthropocene.

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So, when we are discussing urban or when we are discussing urbanization I think that urbanization is actually not a new phenomenon. Because all of us know that you know like during the ancient period during the ancient times the world visualized the growth and prosperity of very important cities which were also the you know the bed of civilization.

So, Stuart Piggott he it is a famous remark by Stuart Piggott that no city no civilization. Then why are we discussing urbanization so much these days? Is the current urbanization different from the waves of urbanizations that the world visualized in their preceding centuries? The answer is obviously, yes. So, why what is so new about or so drastic or dramatic about this new urban movement, about the new urban transition?

So, the new thing is that you know 2007 is a landmark here because as per the report by this world urbanization prospects, which was published in 2008; 2007 is a crucial year when for the first time the urban population of the world it surpassed the rural population and this is a major phenomenon because we have to understand that by their very own definition, cities are actually not self sufficient.

So, cities actually have to depend on hinterlands, on pasture lands, on rural areas for their subsistence, for their survival. So, the very fact that the urban population surpass the rural population is a big thing you know to be internalized and to be

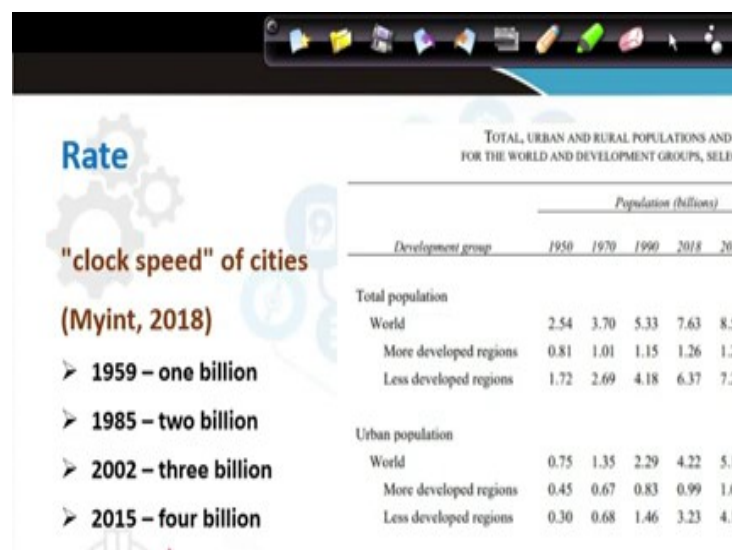
thought upon. So, what we find is that, if you see this data between 1950s and then there is a projection for to 2050.

So, this is a kind of a 100year data including like real facts and including projections and again published by this the same report this World Urbanization Prospects to 2018. So, what we see is that in 1950 the percentage the percentage for the urban population of the world was 30 percent, alright and so, within a period of 26 years that is.

So, with a period of like roughly 26 years it changed to like 55 percent and now, the projection is that that by 2050 it will be like 68 percent. So, one can understand that the accelerated pace in which this planet is actually urbanizing. And this is very much evident and this can be explained by the changing rate, scale and shifting geographies of urbanization.

I would highlight on this and we will have an in I mean we will have our lecture dedicated to this particular to this particular phenomena of shifting geographies of urbanization. And what are the additional challenges that it bring in to the table, you know when this low-key of urbanization has actually shifted to the global south.

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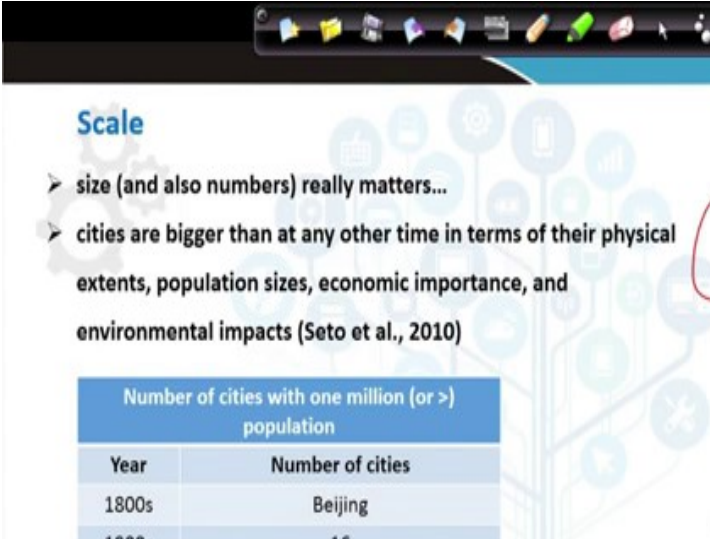
So, we talked about rate scale and shifting geography. So, if we shed light on the rate of urbanization we find, again I am quoting Tua Myint, so, she talks she says

about she draws our attention to the clock speed of cities. And she says you know the way that the planet is urbanizing. So, what is happening is that the metabolism, politics, economics, they everything has become out of sync with nature? So, there is no sync with nature or even the less urbanized areas.

So, she says you know the, a little bit of, I felt a little bit of satire in her remark where she says that you know we need to we need to we now have the option. But we are now compelled to think of strategies or innovations through which we will be able to produce in finite resources to kind of feed our appetite or we need some technological breakthrough or maybe we need you know some kind of paradigm shifts to reset the clock in order to avoid the potential collapse of the earth.

And, again we can see you know this the rate of urbanization the accelerating rate of urbanization is evident through these numbers. I will not go into the details, but again like in 1915 the urban population was like one billion within a gap I mean within 26 years that is in 1850 it grew to 2 billion, to become 3 billion it just needed 13 years and so on. So, sorry 17 years and then from here to become 4 billion it just took like 13 years and you know it moves on like that. So, this is a kind of linear exponential growth.

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Scale

- size (and also numbers) really matters...
- cities are bigger than at any other time in terms of their physical extents, population sizes, economic importance, and environmental impacts (Seto et al., 2010)

Number of cities with one million (or >) population	
Year	Number of cities
1800s	Beijing
1900s	16

Now, so far as this scale of urbanization is concerned I would like to specifically mention about this particular book which again has been published in 2017. So, and

the author is Geoffrey West. So, Geoffrey West in this particular book called Scale, The Universal Laws of Growth, Innovation, Sustainability and the Pace of Life in Organisms Cities, Economies and Companies.

So, in this book he really tries to draw our attention to the scale of urbanization emphasizing on the very fact that size and also numbers really matter. And what we see now? That cities are bigger than any other times. So, this is something new, this is something unprecedented which is happening in our contemporary times.

So, cities are bigger than at than at any other time in terms of their physical extent in terms of the physical extent, in terms of population sizes, economic importance and environmental impacts. So, these are all the parameters through which we can see that how the cities are growing exponentially in their size; in their size, in numbers, in spread and how this is exerting whole lot of pressure on the earth system.

So, again some data about cities with more than one million, I mean with more than million population and so, size and scale and numbers the importance of scale in the kind of understanding the in capturing the present urban moment.

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So, now we will come to shifting geographies of urbanization and I think this is very very important because we have to understand that one of the major like change that we are encountering now, is that the that urbanization has shifted to the global south.

So, we are in this era of unprecedented mega urbanization and the largest megalopolises of the 21st century they are in the Global South. So, a tremendous increase in the numbers and size of this developing cities. So, these data will you know will this data will show or demonstrate you know this shifting geographies of urbanization.

So, what we see is that the world's largest internal migration of rural people to urban areas has been happening on a remarkable scale and if you consider Asia, then 19 since 1990s this is going on in a in great in huge proportion and between 9s and the very important centers or countries are China, India etcetera.

So, between 1990 and 2017, China was the leading rural out migrating society in the world. So, falling from 73 percent this is quite remarkable. So, falling from 73.56 to 42.04 percent of rural population followed by Southeast Asia. So, these data is also very important in terms of the Southeast Asian countries including Thailand, including Indonesia etcetera.

So, in case of Thailand we see a sharp decline in the rural population from 80 percent in 1960 to 48.48 percent almost half, right, within a period of I think less than 50 years. So, the numbers falling the percentage falling from 80 percent to 48.46 between 1960 and 2016 same with Indonesia. So, for Indonesia the numbers are like 69.42 percent in 1900 to 45.34 percent in 2017, so, and Malaysia from 50.21 percent in 1900 to 24.55 percent in 2017.

So, we can see you know this Southeast Asian countries data that how this rural out migration is taking place.

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So, again this is projected and this is the projection by world urbanization prospects 2019. So, that is a latest one. I think the world urbanization prospects to a 2020 is yet to come and it has not been disseminated yet. So, 2019 is the latest data set that we have with ourselves.

So, and by the projection is that by 2030, the urban population in China is expected to exceed one billion, so, which is an increase of 400 million and it will result in a creation of at least 30 cities of one million. You can understand the scale and India; India is projected to even surpass that of China with its urban population nearly doubling from today's 350 million to 611 million and with an addition of 26 cities of one million.

So, you can understand you know the size, the scale and the kind of you know pressure it will be exerting on the earth system. So, I mean I think like this is the this is a crucial, critical juncture which definitely which infiltrates lots of lot and lot of apprehensions among us.

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The slide features a title 'Implications – metabolism to 'metabolic rift'' in blue text. Below the title is a list of five bullet points, each preceded by a red arrow. To the right of the list is a book cover for 'Untamed Urbanisms' by Myint, which is part of the 'Routledge Advances in Regional Economic Science and Policy' series. The book cover has a blue and white abstract design. A red handwritten line with the word 'peri-urbanization' is drawn across the middle of the slide, connecting the third and fourth bullet points.

- consumption and consumerist cities
- a largescale, dispersed, fragmented, and (non-)networked landscape – planetary urbanization
- ...metabolisms, economics and politics are increasingly out of sync with nature and with less-urbanized regions (Myint 2018)
- from centric formations to the new

peri-urbanization

Untamed Urbanisms

So, definitely we can understand that through those figures that what would be the kind of impact that this urbanization will be crafting on planet earth because it is already doing them. So, it is already exerting pressure at all levels. So, I think I would like to draw your attention to one or two important factors in terms of the relationship between the urban and the environment.

So, if we are thinking about urban nature, if we want to discuss extensively discuss the issue of urban nature and how urban nature is produced, manipulated, manufactured, tamed etcetera. So, we need to know about some of the processes through which you know these mechanisms or these complex interactions actually occur.

So, I will draw your attention to you know to some of the works most importantly by we already discussed Myint, but I would also like to draw your attention to this particular book and this I find a very useful edited volume covering stories from cities of the North and cities of the Global South and you can see that you know what are the what are the crucial problems across cross cutting economic, political and environmental challenges.

And, this book not only have the various chapters that are there in this book on different cities like the city of Kolkata, like the city of some Latin American cities like some African cities. So, if you see this book you will understand that you know

how this the cities and not only the cities and not only kind of facing lot of constraints or challenges, but in the cities the cities themselves also provide lot of opportunities which we really need to we really to understand.

So, if we are in a better position to kind of identify and map both challenges and opportunities, then I think we not only get heavily loaded by the doomsday message, but we also are in a position to capacitate the potential levers of you know the urban environment through which resilience can actually be nurtured.

So, this is that book where you know these chapters provide the narratives of both challenges and existing opportunities which need to be tapped and harnessed for making the cities sustainable and resilience. So, I would encourage you to go through if not if you can go through all the chapter and the good news is that this book is an open access book.

So, you can just type the name and you will be able to download the whole book. So, and I will very much encourage you to go through the introduction because the introduction is also brilliant because they have introduced lot of concepts in this introduction and these different concepts that actually enable us to really understand the complex interactions between the urban and the environment.

And Adriana, Andrea and Mark Swilling they are like fascinating urban experts and urban researchers, who by themselves they have like produced very good cutting edge radical works and I would also be very happy that if you can also go through some of their articles that discuss urban environmental issues extensively.

So, with this I would also like to talk about you know peri-urbanization; peri-urbanization as a recent phenomena or if not recent, but like peri-urbanization as a phenomena which can be contextualized within the present context of unprecedented mega urbanization.

So, what is happening is that you know the way this urban this cities, the core cities of the Global South are expanding, so, they are kind of the swallowing like the if the surrounding ecological infrastructures in the form of wetlands, lakes, arable lands, pastures other forms of water bodies etcetera. And, so, what is happening is that you

know these spaces are the spaces where which are which have urbanized, but they lack infrastructure.

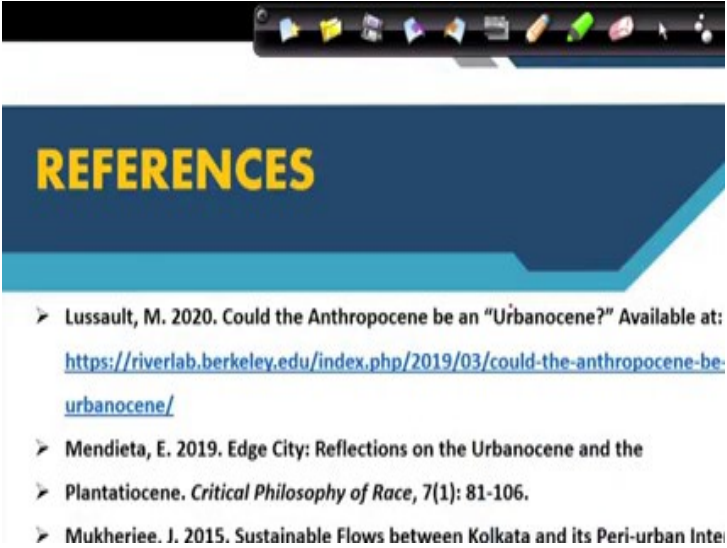
So, they unfortunately you know they suffer from this syndrome of what Adriana calls urbanization without infrastructure. So, we will learn about these challenges, about this crisis that this developing cities of the Global South are facing I mean more in our in the next lecture where we learn about their additional vulnerabilities in the present context.

But, here finally, I would like to talk about you know the implications that the way the world is urbanizing, the way planetary urbanization is taken place in our contemporary times it is having a lot of complex, it is generating significant implications.

So, what is happening is that the balance between the urban and its wider ecological setting? This balance has been disrupted, this balance has been destabilized because you know there has been a shift from the metabolic relationship between the urban and its wider ecological infrastructures from you know. So, the sustainable flows between urban and its peri urban this has been destabilized like anything.

So, now the relationship has really transformed from a mutually interdependent one to a mutually truncated equation. So, which is very unfortunate with a whole lot of like ramifications or with whole lot of cyclical you know implications and impact for the planet and its inhabitants.


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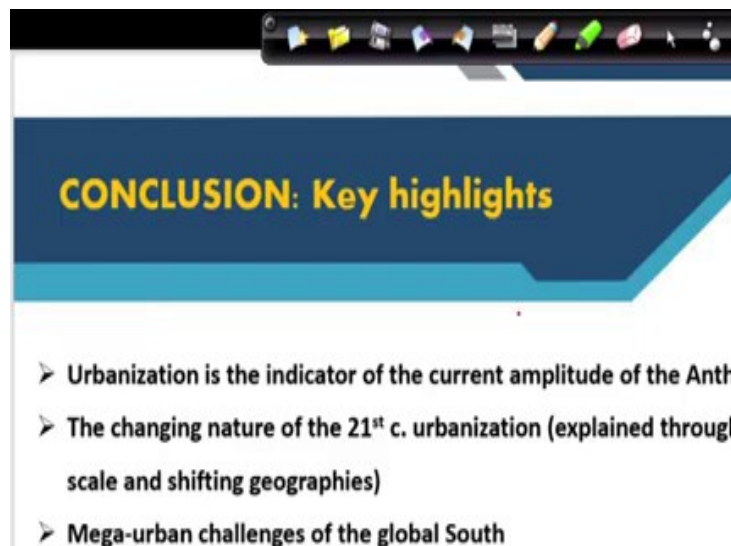
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So, yes these are some of the references.

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And I think the key highlights or the concluding line of arguments would be that in this lecture we have been able to cover these important facts. So, we I think we could establish that why we should perceive urbanization for contemporary times as the indicator of the current amplitude of the Anthropocene.

So, like whether we use urban Anthropocene or whether we use urbanogenesis that is a different debate altogether, but there is no doubt about the fact that you know

this urban is a major variable in you know kind of facilitating this Anthropocene. So, and I think I very quickly should mention that there are works and in the Anthropocene lecture we already talked about the 1950s syndrome if you remember, right.

So, we talked about the great acceleration period that how earth system scientists like Will Steffen, they argue that Anthropocene actually began in 1950s. And, if you remember that 1950s is also you know the period from when there was a massive change in the rate of urbanization.

So, in 1945 there was increase in the mega cities from 2 to 25. So, one can understand that you know how this urbanization and urban patterns of live and livelihoods and also you know kind of crafting as stratigraphic signatures. So, our crafting imprints on the rock strata. So, this is really this is having or it will also have its future geographical proof. So, there is no doubt about the fact that urbanization is the indicator of the current amplitude of the Anthropocene.

So, we also discussed it you know how this changing nature of the 21st century urbanization of the contemporary urbanization can actually be validated through the shifting, rate scale and geographies of urbanization. We also touched upon the mega urban challenges of the Global South and in our next lecture we would get lot of chance to kind of discuss in detail about this additional vulnerabilities or additional challenges for the developing cities.

So, thank you all.