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Kolkata and EKW - Conveying The Co-evolutionary Narrative

So, hello everyone. In this lecture, I will be conveying the co-evolutionary narrative between or of the city of Kolkata and the East Kolkata wetlands. So, these are the concepts which will be covered through this lecture. This is the route map or the structure of the presentation. So, where first I am going to discuss the ecological incentives or disincentives and I will explain why you know this is both ecological disincentives and incentives that plays major role in the British decision of selecting Kolkata as a seat of the imperial capital. Then I will be talking about the hydrological manipulations you know which were kind of implemented by the colonial rule under the British, under the British hydrological engineers and the municipal officials, people from the irrigation department and so on.

And then finally, I would also discuss the parallel evolution or the simultaneous evolution of the East Kolkata wetlands along with the evolution of the city of Kolkata and that is why I call it you know co-evolutionary narrative. So, finally, we would see how you know this hydrological manipulations led to the emergence and birth of Kolkata's wider ecological infrastructures in the form of this widespread wetlands and marshes. Now this is a very famous poem by Rudyard Kipling. Thus the midday halt of Charnok-more's the pity! Grew a city. As the fungus sprout chaotic from its bed, so it spread- Chance directed, chance erected, laid and built on the silt- Palace, byre, hovel-poverty and pride Side by side; And above the packed and pestilential town, Death looked down.

So, this is like I mean in this poem Rudyard Kipling he is not happy you know about this particular site because it is totally infested with I mean kind of diseases, wildness, the condition is extremely insanitary. So, we get all the negative like negative understandings about this particular site and this on the right hand side you will see you see an adapted and a modified map the first ever map of the site that is available in the archive. So, you see the here there are three villages Sutanuti, Kolkata and Gobindapur and then you see the Bhagirathi-Hugli river on the left and this is one of the major distributaries of the river Ganga in a lower course and then you also see the Adigonga river again another stream of the Ganges river and there are creeks some natural creeks or canals inlet canals and in the on the eastern side on the eastern side you see the saltwater marshes. So, overall you know the site has been described as wild, as unhygienic, as insanitary and so, the if you see the last two lines in this poem.

So, it talks about the I mean this town has been or this site rather has been kind of explained

or described as pestilential and the mortality rates were quite high because of the insanitary unhygienic condition of the site. Same things you know we also of course, get similar kind of reactions and responses from the early British or the early colonial infiltrators. So, these are some documents and books which are available at the West Bengal state archive and also some of the documents are also available in the town hall and some archival materials we also get in the annex building of national library and if we compare if we you know kind of go through all these archival documents the correspondence, the gazetteers you know and several other kinds of records and reports. We find similar kind of reactions or similar kind of narrative from these sources from their colonial officials. So, for example, this is quoted in Deib, but this is actually from the like this is from William Hunter W. W. Hunter who has kind of who composed different I mean accounts of different districts of Bengal and this is on the 24 Parganas and the Sundarbans and you can see that how for example, Hunter is talking about the dampness of the region. This quote for example, the jungle the dampness of the soil the impure air. So, all negative connotations right blowing from the Sundarbans and the salt lake saltwater lake standing in its vicinity you have already seen the saltwater lakes in the map on the right hand side where all in sanitary factors and Calcutta, in consequence, was the picture of unhealthiness. So, you can see how the site how Calcutta has been described you know it is a icon or it is a symbol of unhealthiness. So, living creatures were no less a source of danger because there were it was like infested with wild boars and other dangerous creatures according to the British than the forces of nature.

So, wild boars crocodiles alligators reptiles and leopards infected the place. So, you can imagine the intensity of wildness and man was as much a source of danger as the beast for thieves and robbers abounded. So, this is the portrayal that we get about the site. Similarly you know in similar vein F. P Strong. So, F.P Strong you know he wrote this particular account it is entitled like cryptography and vital statistics of Calcutta. So, F.P Strong was a health practitioner by profession and you can see his narrative of the site. So, he says let us look around us and we find all the essential essentials necessary for the formation of malaria.

Beyond our city jungles, lakes, marshes, gardens, crowded with trees and woods of every description and weeds, stagnant water, filthy pools and low grass jungles of every kind surrounding the villagers habitation. So, it was an ideal space an ideal place for which you know approved to be the breeding grounds of mosquitoes you know mosquitoes causing malaria. So, in this example means for a constant supply of the poison. So, it was a toxic environment assisted as they are by the natural heat and moisture of the climate, but when unnatural or meteoric changes of climate take place or when unnatural inundations of sea or river water occur then we find disease and death scorched the land as was instance by the inundation of 1833 in particular and as shown by all the other. So, he

also sites and quotes other records other documents where similar kind of you know environment has been had been projected so far as a description of the site had been concerned.

Now, that the major question which we should ask is that if this space if this place or the site was so unhygienic, so wild you know then finally, why did the colonizers, why did the British select her as the imperial capital not only select her as a city where you know they wanted to kind of develop settlement, but Calcutta also became the capital city and it was the capital city of India till 1911 before you know the Delhi became the capital city of India. So, what were the incentives did the incentives surpass the these incentives. So, that is a major question I think which we should ask here. So, actually the answer is yes because the ecological incentives surpass and they were like I mean the incentives were much more compared to the problems or the challenges associated with the with this particular space. So, what were the incentives? Number 1, the river Hooghly that you are again seen on the map and the left bank on the you know left hand side of the site.

So, the river Hooghly again one of the major streams of river Ganga in her lower course. So, Hooghly on the left the Bidya Dhari, the Adi Ganga on the right and the saline marshes you know the saltwater lakes bordering the east it was together it can be considered a system a system of natural channels which could then be interlinked. And why was this interlinkage important because you know the British could really see the prospect of the growth of the settlement as a commercial hub as a and that is why the Calcutta port was constructed immediately. So, yes you know these channels and this entire system it actually offered possibilities for the growth and development of both inland and external trade. Sutanuti you know you have also seen Sutaniti.

So, above Calcutta. So, Sutanuti that particular point was the highest point at which the river was navigable for sea going vessels. So, yes they could actually notice they could actually calculate you know the prospect of the emergence of this site as a port area. And then on the other hand these eastern swamps and marshes of course, they were breeding grounds of malaria it kind of I mean the atmosphere was malarial, but at the same time you know these eastern marshes also proved to be I mean a space which then the enemies or the people who were not wanted they it was difficult for them to actually cross you know those marshes and then infiltrate into the site. So, that was so, eastern marshes and swamps invulnerable to the enemy this was also another incentive actually.

Then as the this particular space it was wild, but it was not totally uninhabited because you know Sutanuti we see already there were people, there were weavers, there were cotton traders who were inhabitants of Sutanuti before the coming of the British. So, the you know it was not totally uninhabitable, but at the same time it was not crowded. So, the cost

of land acquisition was cheaper the cost of land acquisition was cheaper because the place of course, also had its disincentives. So, it was a volatile space with vulnerable topography, but at the same time which showed signs of habitation. Thus you know if you see the this particular diary it is called the Sutanuti diary and consultation it is one of the very important historical records dated 1698, October 3, 1698 the East India Company officials they say that you know this was actually the best money ever spent.

So, we know now that in spite of being wild and in spite of being unhygienic how and why you know this site was finally, selected by the British for their for I mean which could facilitate commercial trade and transaction and that is why I call this the victory of site over situation. So, and I think I have been able to explain now that why you know this can be scientifically understood as the victory of site over situation which otherwise seem to be very very wild. Now once the decision was made that yes this would be the site where we would like to establish you know we would like to establish our commercial settlement then the next sets or series of actions could be clubbed together could be categorized under what I call colonial hydrological interventions or colonial urban hydrological intervention in the form of the excavation of canals. So, excavations means it is not always excavation of the entire canal, but sometimes you know linking some of the natural canals with each other and in some of the lake because this is a very silty area. So, in some cases is also demanded you know little bit of dredging.

So, I mean the cost of maintenance were high, but you know the returns were also very very high on investments. So, we see that you know after the decision was made then how tamed interventions were conducted in the form of the emergence of this canal system or the canal network. So, you see it is one of the brilliant examples of engineering feat you see the city of Calcutta growing expanding you can compare the this with the earlier map that I had shown before. So, you see the you know the Hoogney river and the city of Calcutta expanding you know the space the area and so many other canals you know were cut and excavated and linked with the natural channels and how this entire river line scape this land water scape was actually manipulated by the British by the British engineers through series of what I call tamed interventions. Now as I already discussed before you can imagine how this canal systems or you know the canals they performed you know they performed significant role and functions in facilitating colonial trade and commerce.

So, this canals can actually be considered as arteries of trade. So, these are some tables again you know you will see the sources. So, they are from so, I have consulted different I mean I have consulted primary sources I have consulted some administrative reports proceedings and the compilations and accounts of colonial surveyors and officials like O'Malley, L S S O'Malley C Adams Williams English and all and from all these different reports and records and from the colonial archive then I have been able to kind of compile

you know this data. So, these tables show this data you can see for example, the first table if you take a look at the first table you see the names of the canals and the years of execution. So, you can see all the very these are all the I mean these are the 5 most important canal and you also should add the name of the Adiganga Tolly's nala canal with it.

So, the 6 most important canals it form a part of these eastern canal system and on the right hand side of the table you see their years of execution. So, you see that between the early 19th and the early 20th centuries. So, this 100 years it can be considered as the golden age so, far as you know this excavation of canals or the emergence of the canal network is concerned. Now, the pros and cons the costs and benefits for whom, who are the beneficiaries, who are the non-beneficiaries these are questions which need to be tackled separately, but so, far as excavation is concerned then of course, you know this long early 19th to early 20th century can I mean there is no doubt if we can use or if we can use the epithet of the golden age of canal construction of Kolkata you know so, far as this particular period is concerned. Then you see other tables where you also see that why you know this site was actually lucrative to the British and how the canals you know facilitated colonial calculus of rule and colonial agenda of you know kind of getting huge returns on investment and you see that these are the years and these are the amounts the collections which were made because where were the collection made they were the toll posts.

So, for every canal you will see you know toll gates and toll posts where revenues were collected. So, you see that this is just one example the right hand side table the big table and the source is the administrative report on Kolkata and eastern canals and Nadia rivers 1868 and 69 and you see the names of articles. So, many articles different so, many different commodities like coal, indigo, salt, castor oil, rice, fabrics these were the commodities which were transported through the Tolly's canal and these are the names of chokis you know the toll posts Shamukhpota, Roshan and Khidrpur these were the two these were three major you know toll posts on the Tolly's canal and on these you know toll posts the collections were made. And you see the you know the how profitable this entire venture was and I should tell you that you know during this time that is roughly between the second half of the 19th to the first half of the 20th century the bulk of trade that was done through canals it was like 7 to 8 times higher than the bulk of trade which was done through the eastern railway system. So, this is such a significant data, but now if you come to Kolkata unfortunately you will not even realize you know that these canals plays such an important role because now they have transformed into mere nullas from navigable canals to mere you know nullas which means like sewers or drainage canals.

So, this is a very very important map and so, if you again compare the maps one by one. So, you remember the early map the earliest map that I had shown you in the slide then

you had seen the map where you know I put it under colonial hydrological manipulations to showcase to demonstrate you know the series of tame interventions which were then I mean kind of conducted on the like riverine space of Kolkata. And then you see this map you can see that all the different canals that you also saw in the previous map, but here your focus has to be on these two oval circles this is the river Bidyadhuri and this is the river Kulti. Now in 1828 the river Bidyadhari was declared officially declared to be dead and I think I considered this as the turning point in the ecological history of Kolkata I will explain why. Now first of all why did the Bidyadhari river decline I mean there are number of reasons first of all one needs to remember that you know this is still a deltaic space.

So, and delta ecosystems are very very dynamic. So, always you will see you know the rise of new rivers and the decline of older canals and streams and inlets and then you know there will be chore formation like it is a very dynamic it is a very volatile you know geomorphological space where you will continuously see a dynamic you know geomorphological configurations right. So, due to both natural causes or natural reasons and also a series of artificial you know interventions because water was also taken from river Bidyadhari to feed some of the excavated canals. So, and that is how the experts explain this they argue because I had also interviewed number of you know irrigation department officials and they also pointed out that yes due to both natural causes and artificial interventions Bidyadhari river started declining. So, the volume of water started declining and deteriorating in the river and so, ultimately in 1928 it was officially declared to be dead.

Now why do I consider this to be a turning point in the ecological history of Calcutta very very important because this Bidyadhari river was a tidal river it still is a tidal river and this river was responsible for because it is connected to the salt water marshes and it like carried saline water from the Bay of Bengal because just the below you we have the largest mangrove delta the Sundarbans ok. So, the Bidyadhari river carried the salt water saline water for Bay of Bengal and as the eastern part the salt water lakes area like it was undulating it was a low lying land. So, the Bidyadhari spilled its water in that area and the water became stagnant and could not move out. So, this is also the reasons how you know the salt water lakes function and it remained marshy and saline, but with the decline of the river Bidyadhari I mean it was like a I mean a kind of a lockdown almost a lockdown period in the British like attempts to collect revenues and so, far as this entire system technological system was concerned. So, there were lot of debates and discussions that which river could then replace the Bidyadhari because the Bidyadhari was also the most important you know sewage outfall channel for the city of Kolkata.

So, it was a sewage outfall channel for the city of Kolkata and now it was there. So, what would be the alternative you know outfall channel for the city of Kolkata now and you

have to remember by that by this time 1928 Kolkata already you know it expanded it become a big city and the demographic pressures were also high. So, what to do? Then I am I will not go into the debates a lot, but you know I would just say that there were debates between the colonial officials the Indian engineers and finally, you know one of the Bengali engineers B. N. Dey he made a design and in consultation with others and this is known as the B. N. Dey scheme of the Kulti river or the Kulti log gate. So, Bidyadhari was then replaced by the Kulti river which was then selected as the outfall channel for the city of Kolkata, but this caused a major change a departure in the ecological scenario of the whole setting. Why? Because you know all the different excavated canals then started carrying sewage water most importantly there were two like very important sewage canal. So, one is this dry weather flow which carried a Kolkata sewage or effluent and other one is the storm water flow which carried the rainwater mainly and then these canals were interlinked and with each other and then the sewage or the effluent was carried to the Kulti log gate to the Kulti river finally. And then what happened is that so, there was a major change in the in the ecosystem a situation of this particular setting because from saline water marshes you know it then gradually became the fresh water marshes.

Why? Because the canals carried the effluent and in between you can see you know this map and this map here. So, once the Bidyadhari river you know so, once the Bidyadhari river decline and once you know this canal directly carried the effluent the no more I mean they carried the non saline water to the Kulti in between a system emerged a system evolved where the fishers started practicing Pisciculture inland fishing experimentations with sewage with effluent. So, it came up as the resource recycling I mean on the wise use using wise use principles of resource recovery mechanisms the fishers they started pursuing Pisciculture activities by growing fish on sewage water and this is how the East Kolkata wetlands you know was formed. So, now you know that why and how we need this entire history we need to know this entire history to really understand the emergence of the birth of the East Kolkata wetlands. And so, I would like to place it as you know the co evolution of the city and her wetlands.

So, how the emergence of the city actually also crafted the birth of the East Kolkata wetlands. So, this is the contemporary map from the East Kolkata Wetland Management Authority website where you can see the boundary of the city of Kolkata in green and you can see the boundary of the East Kolkata wetlands in red and you see how they intersect with each other and how and why that is why we should understand it as you know a kind of a co-evolutionary narrative between the two. So, these are some of the like references you so, I have like put the most important references where you see old books by the British officials like you know the statistical account of Bengal by Hunter for example, and also the recent works very recently for example, in 2018 Debjani Bhattacharya has had written this phenomenal book path breaking you know environmental history for the city of

Kolkata and here she had shown how the city had been you know kind of reclaimed from her marshes. So, this I would definitely you know kind of request you to go through at least the introduction of this book *Empire and Ecology in the Bengal Delta the Making of Calcutta*. And then these are some of the other references.

So, I wrote this book called *Blue Infrastructures* you will get some more references about this book as well and here I also try to kind of combine political ecology with environmental history to again you know see the different dynamics. So, Debjani this book it is still limited to the colonial period for me I had you know kind of expanded the time span and covered both the contemporary and the colonial period and for me like back casting like I have used environmental history as a back casting technique to really understand the contemporary dynamics in a more scientific way. So, you can also go through the book at least if not the whole book, but at least the introduction. So, I would like to conclude by highlighting the key points that I had covered in this lecture. So, the first important argument is that the British calculus of rule you know the British calculations of making profits facilitated the selection of Kolkata, Calcutta at that time as the imperial capital.

So, in spite of so many complaints that you know their space was wild, the space was unhygienic insanitary, but still they could understand there were lot of calculations of the fact that ultimately you know this site is the site which would be able to fulfill accomplish you know our like entrepreneurial motives. So, that is why the place the space was selected as a colonial capital. Then once you know this decision was made the best money I have ever spent they said it right if you remember the Sutanuti Dairy or consultations. So, when this best money was spent then the next series of actions were I mean in the form of hydrological manipulations of the space in the form of excavation of canals and reclamation of marshes. And then finally, it is also about the birth and the emergence of the East Kolkata wetland as an unintended consequence you know crafting the co-evolutionary narrative between the city and a wider ecological infrastructures. So, it is about this urban ecological inheritance that we need to be aware of.