

INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

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Ecology and Society

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Human Ecology: Concepts and meanings

Well so far we have discussed some of the basic concepts and in the last lecture I had given a brief discussion on the meaning of culture and then cultural ecology and cultural ecological theory and in this lecture we will be looking at what human ecology is its basic concepts meanings and the interrelationship between different kinds of resources in this planet system and how it is one of the component in essence is affecting the other species.

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What is human ecology?

- Human ecology is an approach to the study of human behaviour marked by two commitments.
- First, human ecologists think that humans should be studied living systems operating in complex environments.
 - Human sciences are divided into several social science disciplines – humanistic, and human biological disciplines.
 - Ecologists attempts to understand how diverse parts of the system operate together to produce behaviour.
 - In a sense, traditional human science disciplines take people apart, while human ecologists endeavour to put us back together.
- Second, human ecologists think that humans are subject to very similar ecological and evolutionary processes as any other species.

So in some way the humans if you take as an entirety whatever we does often leave an imprint or it does have some kind of implications on the environment this is something which is in essence the human ecology tries to look at now to begin with let us try to familiarize ourselves with what human ecology is human ecology innocence is a kind of approach in order to looked at or study human behavior and this can perhaps be divided into two.

And the first part looks at how humans should be studied living systems operating in a complex environment now if you look at in the slides you will see operating in complex environments while humans seem to be or known to be operating in the complex environment it is because it is different from the plants and animals and we all know human itself in itself is unpredictable for the simple reason that human is guided by different emotions different desires different needs.

Therefore the way humans operate in this environment is quite a complex and therefore human ecology attempts to deal with this an art hard way how humans operate or tries to make an in-depth study into this and in essence human science also can be divided into several social science disciplines if you look at in the social sciences it can be divided into humanistic as well as the human biological disciplines.

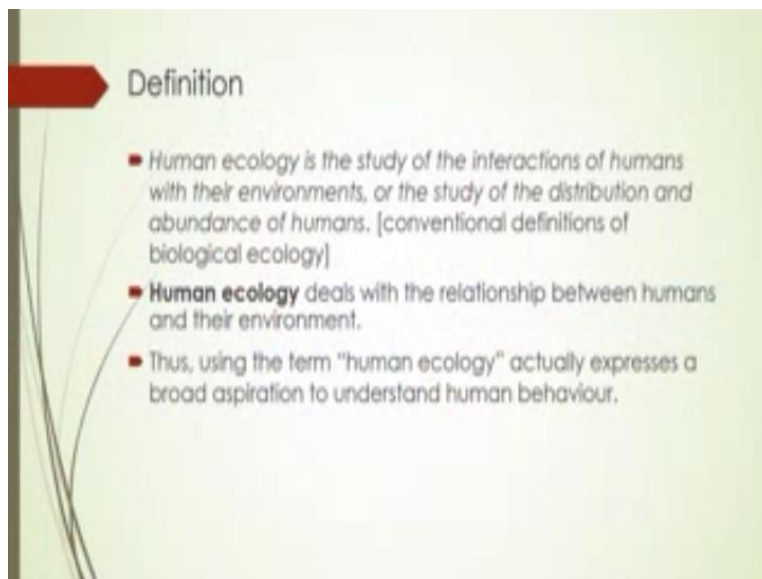
Now within this ecologist attempts to understand how this diverse part of the systems operate together in order to produce some kind of behavior and this behavior is something which is being learned as a part of socialization it is not something which is free but it is something which is being learned not just in the environment but also beginning from the family system therefore it is important to look at this diverse part of systems which in away environment also affects or have and implications on human behavior.

Now in essence of in a traditional sense humans of human science disciplines tech or separate people apart while the human ecologist posits or attempts to put us back together now that some of the basic difference between human science and human equality now partly human science tends to separate or segregate depending on our list or at the same time based on our expertise skills so on and so forth whereas human ecology tends to put humans together.

Because it tends to situate human in relationship with the ecosystem or maybe in terms of our relationship with the biodiversity for instance and having said that secondly human ecology also deals with how in this similar setting or if not through this ecology and evolutionary processes human is also part of the other species so in a sense of if I may say so of human ecology tends to posit if not follow this approach of biocentric by biocentric.

I mean to say that human is also part of the ecology if not part of the whole ecosystem now it is also interesting to see that human is not some things which has a dominance over others species but rather they are part and parcel of the whole ecosystem now there is how the it is a part of the bio centric approach to the ecosystem and secondly if we go by the basic definitions of what human ecology is where I give a conventional definition.

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If you look at the conventional definitions of what human ecology is it is about the study of how humans interact with their environment or in essence the kind of distributions and abundance of humans how human in essence populate and also it tends to you know are distribute itself based on their needs now over here you can bring in the idea of this carrying capacity for instance a human population will definitely try to inhabit a geographical area.

Where in it in essence provide of enough resources for the needs of those populations now partly if you look at the history of the evolution of society or how the stages of societies move on if you look back at hunting and gathering society they were innocence being distributed and they were populated depending on the carrying capacity of the resources or maybe the requirement of animals.

In order to satisfy their basic needs now society moves on from a more complex simple to complex depending on how their basic requirements and needs tends to in essence multiply now debt itself also shows the kind of behavioral changes in relation to the environment we are into it now secondly if you look at the basic definitions human ecology Unison deals with the relations the relationship between humans and their environment.

This is the basic of the rudimentary principles of human ecology what it tries to espouse and tries to make sense of the relationship can be formed in many ways as I explained the relationship can be based on fulfilling the basic needs it can be based on rather fulfilling much more than what you actually require now this is something which we need to look at how the kind of relationship it relationship can be complex as I explained in the context of human because it is considered to be much more complex compared to other relationship which is being shared by the other species.

Now therefore if we use this term human ecology it actually tries to express abroad aspirations to understand human behavior now what is this broad aspiration it tends to you know like there are different of embedded meanings within these how these aspirations are being expressed for instance in a modern capitalist society these aspirations could be more in terms of accumulation of wealth because capitalist society is again being influenced or being guided by the market economy or the market forces.

It is nothing but a profit driven ideas now if one is being driven by this profit driven ideas obviously the kind of behavior or the relationship it share with environment will definitely be different now for instance of it those who practice opposite or subscribes to the idea of a

capitalist economy which is of course beginning from the Whistling society and even the global south today we are in essence being affected as a process of this globalization modernization process and the market forces are sort of aspirations keeps changing and many of these aspirations are actually being defined and guided by this forces that is profit driven desire.

Now we tend to see the environment if not the resources as something which will in essence fulfill our needs or other needs now depths is sort of ideas tends to develop that aspirations or ideas within us to see or put it the resources are something from a very utilitarian perspective the economic value of resources or the external value rather we tends to overlook the intrinsic value of those resources and the kind of relationship which normally was being shared in the past generations.

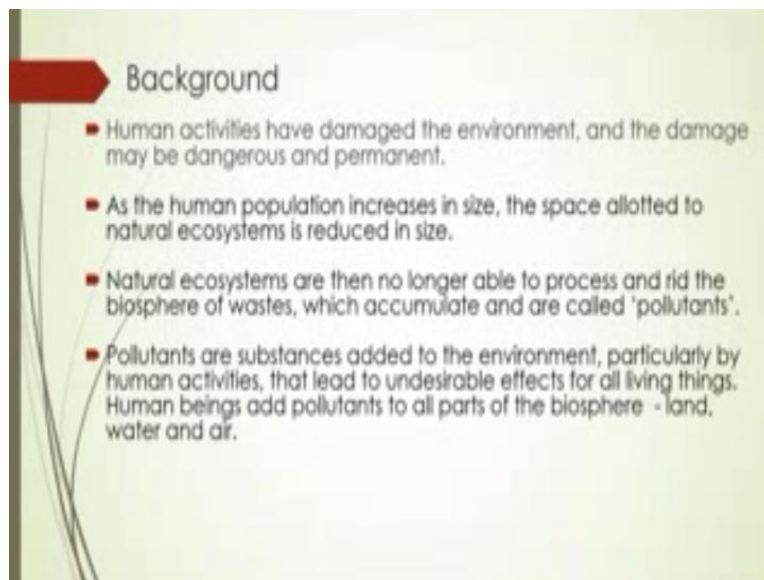
Now we tend to engage in trying to commodify or co modification of these resources modifications of these resources as if we are we tends to follow this idea of how the resources cannot be they are inexhaustible now for instance for quite some time water it seems to be seen to be something which is out of the context of this resource but today water is seems to be given more important and it is part of the resources and within away can be depleted now this sense of urgency or realization innocence has come up.

Because there has been an extensive modifications of even these water resources now we can cite certain examples and the list can go on how many of these the corporate companies now for instance like the Coke Company for instance producing this coca-cola and Pepsi for instance there have been excessively exploiting or using this fresh drinking water bodies in order to satisfy their sort of market needs.

Now and we also tend to you know like some across the fan kind of inter trans boundary water disputes between states within India for instance and across different countries and Nations now because we in essence filled the sort of importance of this water resource as which was considered to be you know like freely given to us as if it cannot in essence be exhaustible now these are partly something which we can tries to perhaps include or trying to sort of give a critic equations debate about the human relationship with their environment.

Across different stages and then primarily in the present context and why is this relationship between human and environment is in essence given so much importance today and why is the need to locate and situate this relationship and in the in the upcoming lectures will try to address and look at how society maintained or connected with nature or environment in the past so these are something which we would be looking at now looking at the background of how these human ecology study.

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In essence emerges why what is the basic need of even talking about human ecology or positioning human ecology in the economic domains now partly if you look at history human usually engaged indifferent kinds of activities and that have in essence are directly or indirectly affected or so to say damage the environment and some of these implications are seen to be dangerous.

And permanent innocence so because even there are resources which can be renewable and nonrenewable because when we engage in trying to damage the non-renewable resources it does

leave a permanent scar in the environment and as a result of this there is a sort of a force which is being tripped a threat which is being posed to the environment because if you look at the post-industrial society and with the beginning of colonialism many countries were being colonized and India is one of them were in essence are colonizing would not 200 years.

Now the amount or the kind of nature is which was being exploited and damaged during this period that is in the poles the industrial and post-industrial period and the colonial period the magnitude of how the environment is being damaged or resource were depleted multiplies much more than anything else and why is this damage on their environment so much filled and so much high perhaps one reason could be the increase in the size of populations now multiplied have a different if you go by the Malthusian theory of these populations.

It tends to see the increasing population size as something which also is posing a threat to the environment because he tends to see in terms of the supply and demand or may be if population increases and that is it is going to have an impact on the environment that is in exploiting of much more resources therefore if we go by the Malthusian theory increasing size of populations is perhaps one of the factors of how this the natural system is being affected or reduced or the carrying capacity is being under threat.

Now perhaps mouthfuls in essence also contribute to you know are influencing some of the earlier thinkers who tends to come up with this idea of this human ecology or the human ecologist rather now when we talk about this increasing human population for instance if you take the examples of the present-day foreign and the process of this urbanization the urbanization has in essence of attempts to exploit the resources or maybe there is much more demand of land a space which is required for the human settlement.

Now by and by as a result of this of modernization process people stems to sift the more and more from the rule through the urban spaces and those populations in the urban spaces again is dependent on the hinterland if not the rural areas for the supply of food now this rural urban continuum is in essence have started maybe prior to the colonial period and then it is much more strengthened now why is this urbanization seen as a problem now for instance as population

increases crowding and then many of the cities especially in the south or maybe in India are unplanned and there is an irresponsible sort of dumping of waste items and as a result of this it tends to you know are pollute the river water bodies.

And as a riddle of this is not only pose a threat to the land as set but also to the water resources these are some very basic things which in essence we can explain in this context there are a lot more examples but this is suffice for us to make sense of how the population increases and also it resulted to reduce the natural ecosystems now secondly why are these natural systems in essence or the ecosystems under threat.

Because they are no longer able to kind of process and reach the biosphere of waste which accumulate in our coal pollutants now even pollutants can be broadly divided and the different can be air water and mostly as a result of the industrial waste now I will show you some of the pictures in the later slides where how as a result of the neutralization process and there is a lot of toxic items being dumped on the river and then the river in essence becomes unfit for human consumption.

Now why is this pollutant innocence being thinned to be access to the natural ecosystems is because they are a substance which are headed to the environment particularly these are because of the results of human activities and the human activities can be right now dumping of waste in a sense is one of them and within innocence indirectly led to directly lead to the undesirable effect for all living things and ultimately on the humans themselves which, which innocence is hardly being realized.

Now humans innocence by engaging all this kind of activity involves in adding pollutants of all sorts to the biosphere that island water and air now these activities with human in essence and gates in a very responsible manner has a foraging impact on the biosphere now for instance the depletion of this the ozone laser which innocence is also something which is very much debated and discussed now what are these spectral.

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What are the different factors which in essence affect the human population world now there were times where human populations were not really a problem or a trend rather there was a aesthetic growth now why is the population of humans multiplied and what are the factors responsible for that first and foremost could be the agriculture revolutions and as a result of agriculture revolution the food production in essence multiplied and as a result of peace it also in essence to the use of different kinds of technologies human tends to produce much more food.

And there was a surplus of food rather now the second thing is there is an awareness or an increasing knowledge of ideas and how for instance malaria at one point of time was attract to mankind and it also resulted to the death of many people now for instance now since that very diseases which is being caused by that cold malaria as a result of different inventions and development of Medical Sciences it tends to develop some kind of treatment and so is different other diseases.

Because this the development of these Medical Sciences enhances or rather led to the cutting down of the mortality rate of human kind and therefore they did it could be one factor which led to the growth of population and, and obviously the healthcare facilities is much more higher

compared to those say 10 years or 50 years before and accessibility like the health care centers like hospitals dispensaries so.

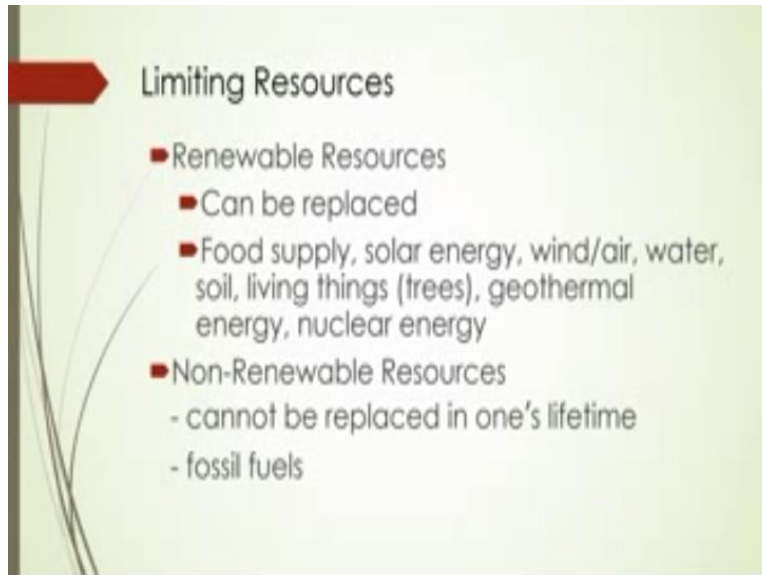
And so forth it is much more rather available in close proximity than may be 10 years 20 years before because people tends to travel you know like kilometers of the kilometers or maybe they do not have accessibility to this health facilities and it resulted to the death of many now what is this they are the advances in medicine and technology not this only simply cut down the mortality rate but rather also the longevity of human life innocence is being extended the lifespan usually has in essence increased.

Now maybe seventy years or more than 70 innocence is an expected life span of a human life now as a result of these emerging facilities the development of medical science technology knowledge and the development of these agriculture revolutions all these in essence have catered to the decrease in death threat and also led to the longer lifespan and an increasing barrette in some areas including barrette innocence if you look around for instance die we have.

Even the couples who lose the hope of you know like conceiving a child through the use of the medical health can innocence conceive so this sort of facilities were unknown to people like maybe few decades back now as a result of this there has been an increasing fertility rates and mostly in the, in the underdeveloped nations now because the underdeveloped nations primarily I mentioned is because there is sort of there is no traction balance and the kind of health facilities which is which has been discussed in the like for example like India maybe there is an imbalance still.

Because we do not have adequate number of these maybe doctors or medical centers which in essence can you know like cater to the needs of the people now and also there is no sort of population controlled and in essence there is an imbalance in the terms of the existing populations and the kind of facilities which is normally been provided by not only the government.

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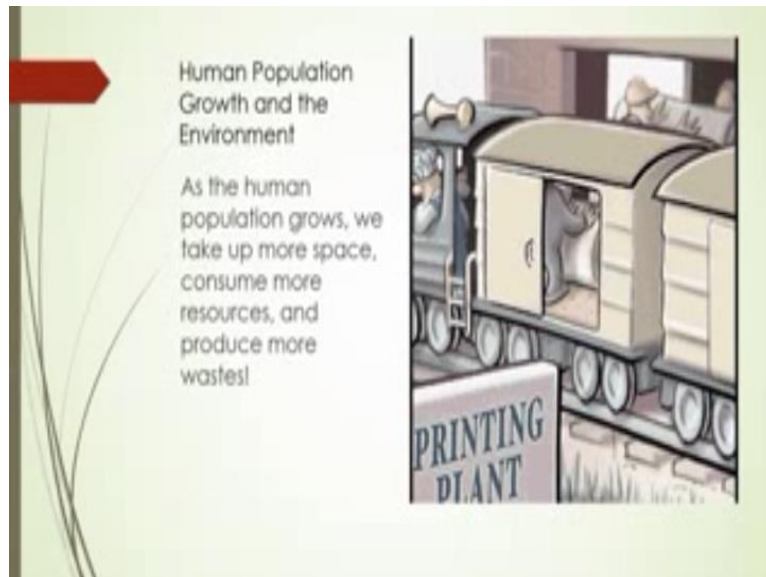
But also the resources the natural resources now what have all these little like the increasing in the rate of population growth now in essence there are two types of resources which I had mentioned one is the renewable resources and the second is the non-renewable resource what is this renewable resources which can perhaps be replaced by foreign for example the food supply the solar energy year water soil living things all these are innocent renewable whereas they are non-renewable resources which cannot be replaced in one's lifetime.

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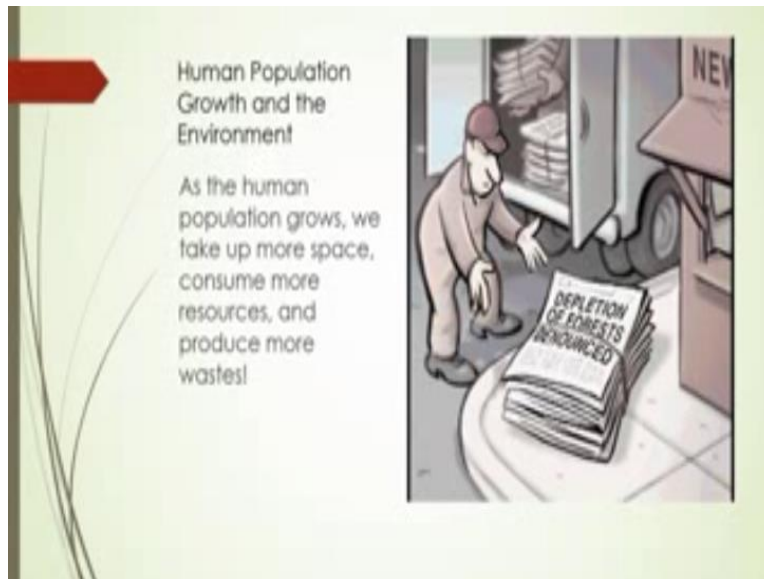
That for example the fossil fuels now for instance on the August picture you can actually see how there has been you know like a changes in terms of not just the use of Motor Vehicles or the changes which in essence resulted to the depletion of resources and all these are innocence as a result of the human population growth and animal now again these are partly something which is a result of the supply and demand of the market.

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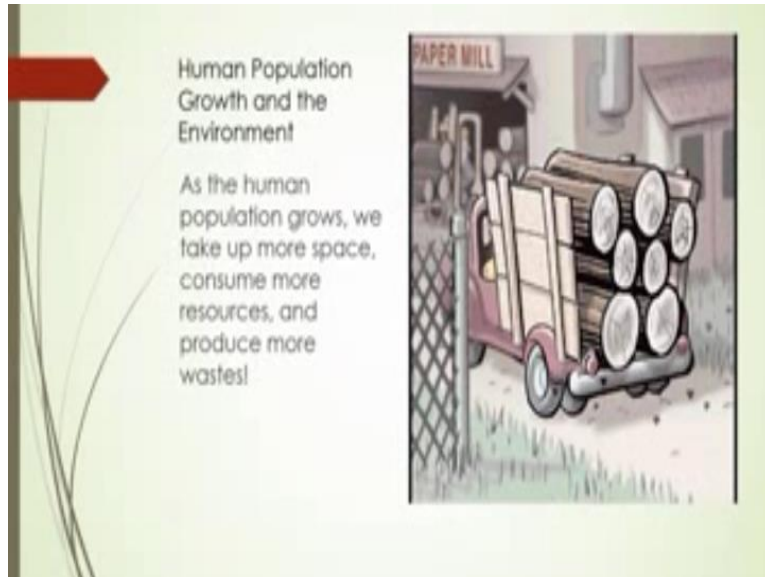
How people are extensively and this in extraction of timbers from the forest that itself in essence liquid the deforestation or the amount of deforestation it is much more at a faster and higher speed compared to the past because there is much more of a demand in the market for woods maybe for furniture and or maybe as we talked about in the people like populating in urban spaces in cities.

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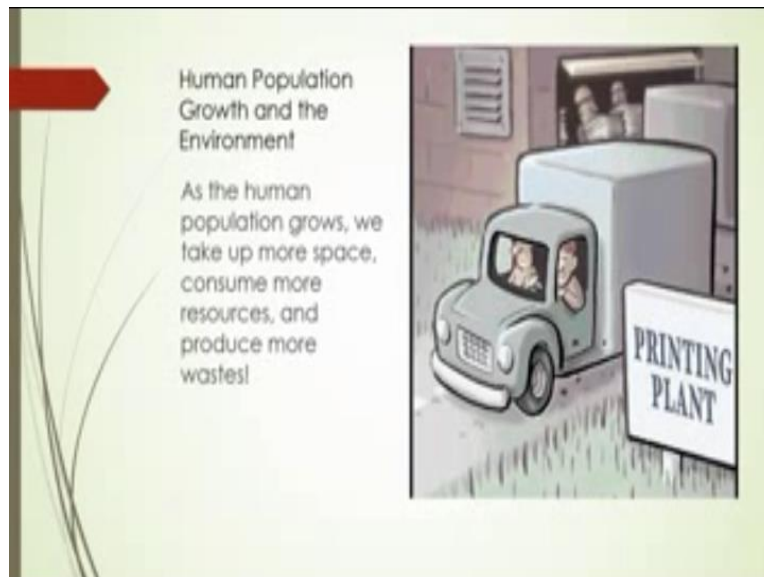
Because population growth and not this extraction but we also tend to be in much more demand of spaces for settlement and also resulted in consuming more resources.

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And also we produce more waste because the more human population the more human waste and if we look around in many of our cities the kind of waste management or waste treatment is something which we are very much like in behind and if you go to any city the manner in which the municipality corporations the way they functions.

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It is as if something not really adequate and then they are notable to in a sense you know engaging in cleaning up all these waste items perhaps the standard forces is not really much after the demand because there is a lot of population and then the waste items multiplies and increases now in this picture you can also look at how this introduction of railway in essence also contribute to the depletion of resources now going back to the Cornell period why was this will with being introduced in every nook and corner of the country in India.

Is simply because it is being used for sort of transporting different kinds of resources and these resources in a way is raw material which is to be supplied to the industry now as a result of this the kind of resources which are being exploited is enormous and it has led to higher scale and speed compared to before this introduction of railways and other facilities were available now for instance the paper industry.

For fragment book is in demand of much more of resources like wood now we have increasingly realized that you know we should you know like use less paper and but to in impractical these are something which is still yet to be implicated because we tend to use a lot of will be done really establish or being aware of the kind of interconnections which we innocence have an

implications on the environment rather so there is something which we need to not just only discuss in academia.

But also the this environment awareness needs to be developed event in the right from the high schools and in the last few years the environment component is being taught in high school and this increasing awareness will definitely have an implications in terms of relationship between humans and environment.

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So as a result of this we need to innocence tries to locate historically how we humans have started trying to try trying to extract if not exploit the resources more abundantly and then what are the factors responsible for it so unless we know the factors responsible for it we cannot afford to come up with some kind of a solution or rather an alternative approach students let us now try to look at how urbanization is in essence affecting and disrupting the ecosystem.

Ecosystem now as we all know in the so called traditional society people are engaging in much more farming practices in rural areas and today there is a system of these farming practices which was more abundantly practice in rural areas to cities these are something which are the

result of urbanization and mostly also because of the increase in industrialization and many of these industries are being centered in close proximity or within the city.

Now that sort of you know like connectivity tends to help in terms of supplying the raw materials you know much more faster paced now as a result of peace it has led to the destruction of these farmlands and deforestation and this when we talk about this one and we are talking about in the rural context now this destruction of this farmland and forests patient has resulted in the decrease of not just the amount of spaces for other species.

But also in terms of the loss of habitats now for instances since we populate and then move towards the cities we tend to you know like post effect to the spaces and there is an increasing loss of habitats and also we have this witness in decrease in the biodiversity now when we talk about biodiversity it includes not just the land but also the water bodies like for instance some of the floods which we have encounter and witness in, in in the past few years like for instance the flood in Chennai.

If you give looked at the kind of study which are being done some of the possible factors was an unplanned way of human settlement and also by you know like developing those from wetland areas into human settlement now perhaps maybe there was the least concerned and less awareness about the importance of this wetland areas and you could actually see the water flowing in the heart of the city.

These are in essence to be considered as a human or man-made disasters which in essence we are alone responsible and this flux could have been avoided if there has been a mechanism or a kind of plant which, which could have been easily averted now there could be certain other factors but this is one basic and examples which we have generally encounter and in bigness in the context of this urbanization and his development of the cities exponentially have innocence resulted in terms of you know like the way this relationship between human and biodiversity or the impact on biodiversity is pretty much higher in compared to the past few decades.

Now all this innocence has led to the disruption of the ecosystems by not just introducing new species to an area known or and without no known now we in essence humans become sort of appreciator rather than the protector now that sort of unmindful activities which we usually engage tends to have a threat and it disrupt the whole ecosystem now continue to this, this the increasing number of this industry and the establishment of agriculture.

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Mostly concentrated in the near the cities as in a way led to a terrible situation that human life is seems to be posing except and ecologically it has sort of to be seen as some things we have reached a mark of a point of danger now as a reason of this increasing high level of Industry and the agriculture which is concentrated mostly on human economic activities have much less only pose a threat to the ecology for instance the pollution of environment that is water pollution air pollution and land pollution now if you look at their agriculture concentration and human economic activities.

Now these human economic activities also as I explained mostly the agriculture which was practiced in the past is to do with the subsistence form but the agriculture practices today is more of the case crop farming and as a result of these in order or to have an enormous or high amount

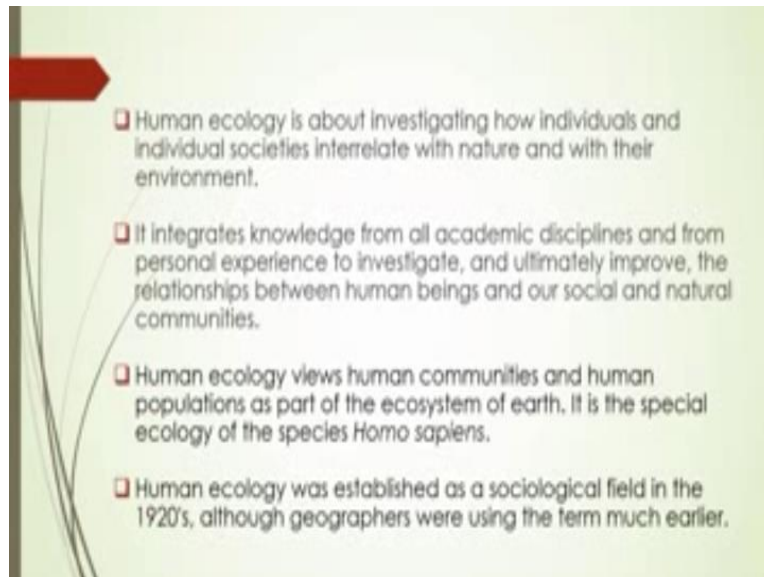
of production people tend to use certain kind of maybe fertilizers chemicals soon and so forth and as a result of these ecologically speaking it has posed a lot of threat.

Now and which eventually has led to the pollution of the environment and in return these have a far-reaching impact on the human health now therefore a new branch of ecological science begins to develop video and that is human ecology that is because they are different brands of ecological science and within this human ecology is one of them now by saying so we can in essence say that human ecology is a discipline within the economy that deals with association between humans and their natural environment the it is it is not just an association between humans and humans or maybe between humans and animals.

But the whole natural environment that is the ecosystem therefore the kind of relationship which we shared with the natural environment the humans here with environment is important and, and this perhaps is one of the main pursuit of human ecology and now further explaining about what human ecology aspire and then in diverse to look at it also attempts to investigate how individuals and maybe individual societies tends to sort of form a relationship with their environment.

That is it can be in terms of the economic activity it can be in terms of the socio-cultural socio culture and religious practices and it can be the right now definitely economic activity is perhaps the starting point and once it also tends to look behind it, it is not just the economic production which defined the human relationship the environment but also different other parameters with into which we should have to situate the human environment discourse.

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Now in the human equality it also attempts to integrate knowledge from all disciplines and the human experience and also through these experiences it tries to improve the human relationship between in social and the natural community of communities now because this by trying to look at the experiences we tend to you know I come up with a different suggestions and approach altogether so that it tends to sort of form and alternative approach or a viable option.

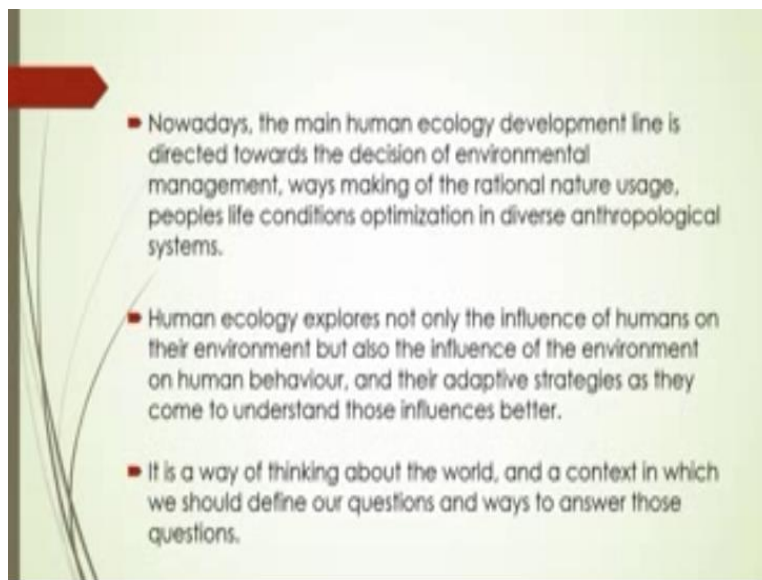
For instance if we give an examples of the traditional ecological knowledge of a particular community say an in business community now through their experience over the past generations we tend to document and locate how influential and how beneficial these knowledge systems of those indigenous peoples and perhaps by integrating this indigenous knowledge with the scientific knowledge we can form an alternative approach or find a way out to solve this so called ecological crisis which we are into.

Now that could be one way of looking at because now in this indigenous knowledge again or traditional ecological knowledge is primarily based on the trial and error experiences of humans in their natural setting now these experiences in essence can be either in proof or implemented so that there can be a way out in this present context wherein the idea or this sustainability is pretty

much talked about and debated or maybe sustainable development now in the if you look at human ecology also tends to look at the way human communities and human populations are not to be seen in isolation.

But also they are part and parcel of the ecosystem they are one the interrelated parts of the art now it is the special ecology of this species which is called the Homo sapiens now the humans are also part of this whole ecosystem and which is to be known as Homo sapiens now human ecology was established in the field of sociology or sociological field in the 1920s although this very basic splint was being used by mainly who practice geography or in the field of the graphic you know in the rougher's where the pioneer in terms of using this concept.

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Now in recent times the human ecology development is in essence mostly focused towards the decision of environmental management making use of the nature in a more rational manner when we talk about rationale we are not simply making sense of the resources but we tend to you know a way between the pros and cons and ultimately if it only benefits humans we tend to engage in them that is more or less a choice which is being made rationally and this in essence has led to a diverse and landing of anthropological existence.

That is metropolis usually looked at the human cultural and human society and the way human society operates in the environment is something the ecological anthropology tends to look at and which perhaps are we discussing more in detail in the upcoming lectures how the ecological anthropology operates now secondly human ecology also attempts to explore not only the influence of humans on their immediate environment but also it tends to look at the influence of the environment on human behavior.

So as I said the human culture is also being to a certain extent being influenced by the environment which human area now the food habits the kind of dress or may be the kind of socio religious practices which human health is being innocence effect I mean influenced by the environment systems and through this human comes up with an adaptive strategies or adaptive mechanism in order to manage or maxims or as this with these influences in a much more better way now if you take an examples of the leap Aryan communities who are mostly inhabiting the bank of the river that is the riparian communities they are quite prone to you know like encountering these floods.

So they might have a different cultural or adaptive mechanism to encounter these floods maybe in terms of their food habits or maybe in terms of their economic activities agriculture practices and maybe for instance the way they build their house there is a particular community in the Assam which is called the Machine tracks they have this how the school sounds are and they have build a house which is innovated from the ground.

May be four to five feet higher and which in essence is used as a coping strategy in terms of you know like staying I look from the water which is which is normally during the flood and also they have in essence a different kind of you know a warning system which they tends to understand or perceive about the impending floods through the science of maybe the behavior of the animals and then the sounds of birds and animals now these are something which a cultural community tends to develop across a time span and generations and through this they are able to cope with any kind of disaster in a much more better way.

So that the kind of impact or maybe the most in terms of maybe human lives can be lessened and if not be avoided now if you look across different cultural communities they might have some kind of all these adaptive strategies to encounter or understand their environment in a much more better way now this perhaps in away is a way of thinking about the world or maybe let us say the cosmology of any community.

That is the worldview how they perceive and how they try to situate and make nations and understand their relationship with the environment now this perhaps is in a way how they tend to you know like perceive the world around them and a context in which they in essence defined themselves so within this we have to you know define equations and ways to answers those questions why perhaps this particular community behaved this way and why is that they are following this kind of food habits or attires the dress code so it has to be understood in the context we cannot afford to read all of the context it has to be read and understood or interpret in a in that particular context.

Why people behave so why they perceive so why they think so now I would like to recall waybill's understanding of worst hand which is a German term which he talks about interpretive understanding in sociology where inhuman needs to Macon's or understand of other cultural groups by seeing into the subjectivity of the persons who practice now for instances and excellent to an outsider what I do what I act the way I behave might not really make sense a complete sense to someone who belong to a different cultural group now within my own cultural group.

What I do the way I speak by gesture the way I make a facial expression it makes sense to my immediate is not within my cultural group is simply because you have that kind of shared understanding and the kind of societal values norms achieved are something which we have learned and these are in essence a learned behavior now by saying so that subjective meaning with that embedded meanings which is attached to that particular accent should be understood in that particular context.

Now if an outsider suit or attempts to Maxim's of a particular things he should tend to interpret things from the taking the positions of that particular person or community which he or she is looking into Australia only than that intrinsic or that embedded meaning which is attributed to that actions could be meaningfully interpreted this is what Webber has talked about in bursts and that is interpreted this understanding of an understanding of human actions.

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And the kind of meanings it attached to it well moving on what human ecology attempts to looked at how does it tends to operationalize or how it attempts to investigate the sort of the environment now on the right hand side is a picture which was taken by me way back in the 2016 may this is a place called Juke Valley which is on the border of money pure and Nagaland state and this valley is a tourist destination and it is it is the panoramic view and the picture scheme of this valley.

Is so fascinating to the people around and then there is this visitor which is you know like across different parts of the country and then even we have come across foreigners visiting and usually this enchanted Valley there is a lily which is called zuculini which in essence blooms in the

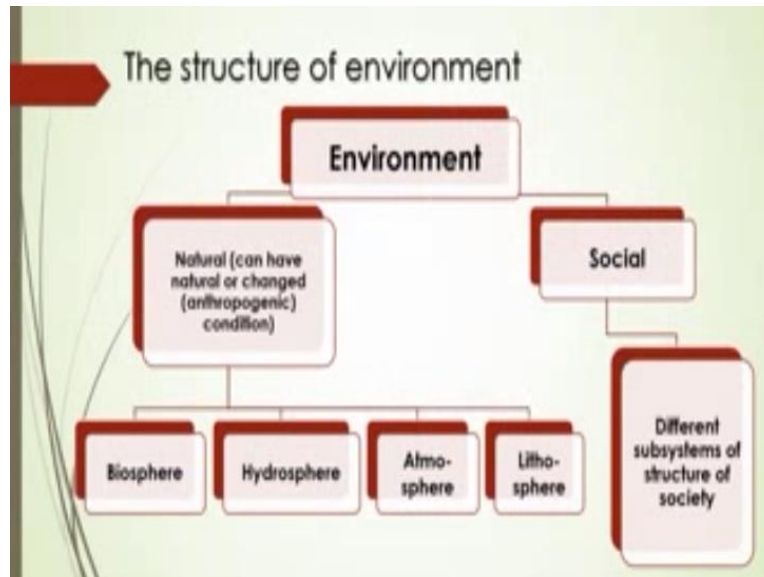
month of May to June now the reason why I am watering this picture is apart from this you know scenic beauty with the increase of to risk developing into moving into this area the last summer.

When I visited I have come across you know like unwanted throwing of waste item by those people like and getting the cooking and then sudden other sort of picnics and old now it innocence both a threat to the biodiversity of that particular place and also we have come across in the vicinity of this area where there was the forest was set a set ablaze by fire and then you can actually I do not have a picture with me.

Now we have come across the forest which was being set fired by the region being unknown but with the kind of precautionary measures taken by the revolution I mean the volunteers of this area it is was it was evident that might be because of the responsible you know like lighting I mean the use of light by the visitors may be using of the matchstick and so and so forth now then why I am highlighting this issue is because these are some examples of how the humans lives of far-reaching implications on the footprints.

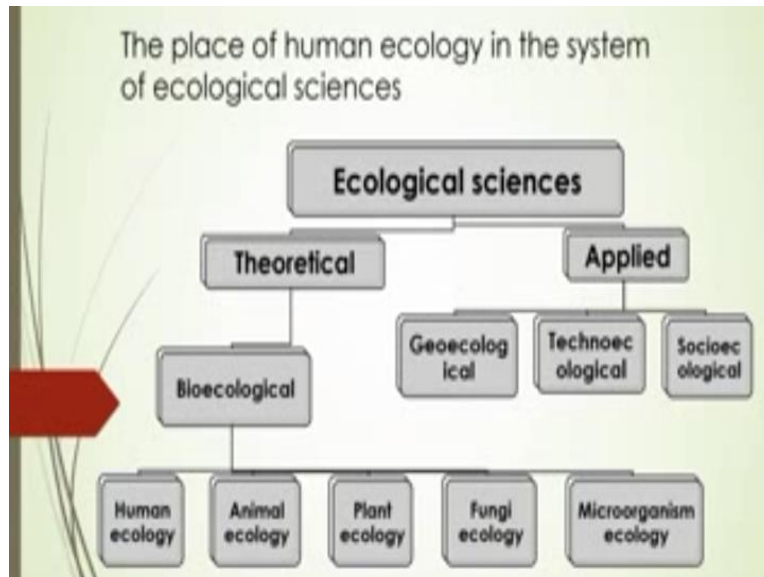
Which we have in essence has a financing impact on the environment or the biodiversity now maybe who knows like in the coming five years ten years this whole area might be you know like full of waste and then the mob so you know like attractive like at it is now so there has to be an increasing awareness in terms of how we you know like and get in the environment in a much more responsible way because unless we are aware about the kind of you know footprint which we are closing on the environment it is no we are going to be a lasting solution.

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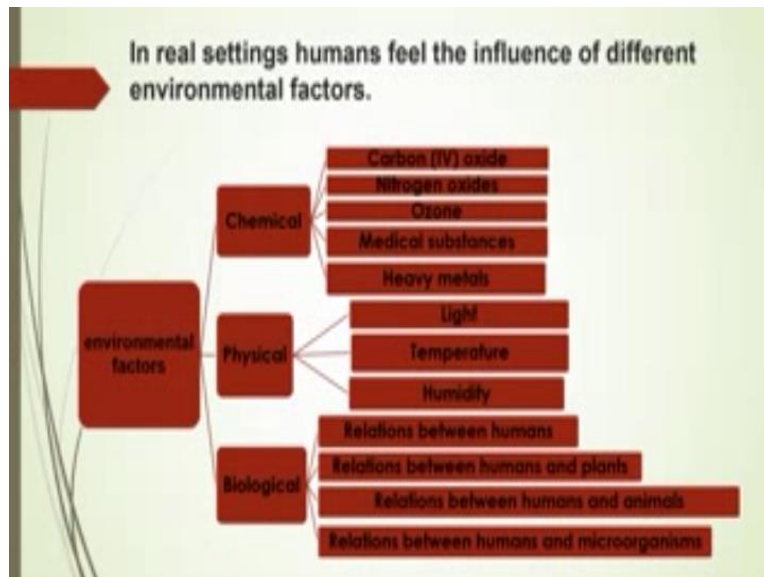
Now this very idea when the I am just trying to bring in this sort of are a flowchart where you can see how things are being interconnected and within the environment how the humans and nature innocence shared sort of symbiotic is not and a very the connected relationship now they can be in a natural setting or in the they can be sort of a chains through the anthropogenic conditions and this itself the social or the humans are in a way being responsible and by and giving into this the human culture tends to pose a threat not just to the natural.

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And eventually it has in essence are percussion to the human now if you look at the, the different sub disciplines of ecological sciences and of with human ecology is also one of them and within the bio ecological it has human ecology animal ecology and so and so forth and for you to have enough idea of how human ecology emerges out of these ecological Sciences which is small as a article.

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And then it tries to it endeavors to come up with certain kind of and lasting sort of intention because it begins with posing equations now in real settings human fills the influence of different environmental factors and this perhaps are some of the things which we need to look at how these components are interrelated within the environmental sectors and we will the continuity discussing of this in the next lecture.

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