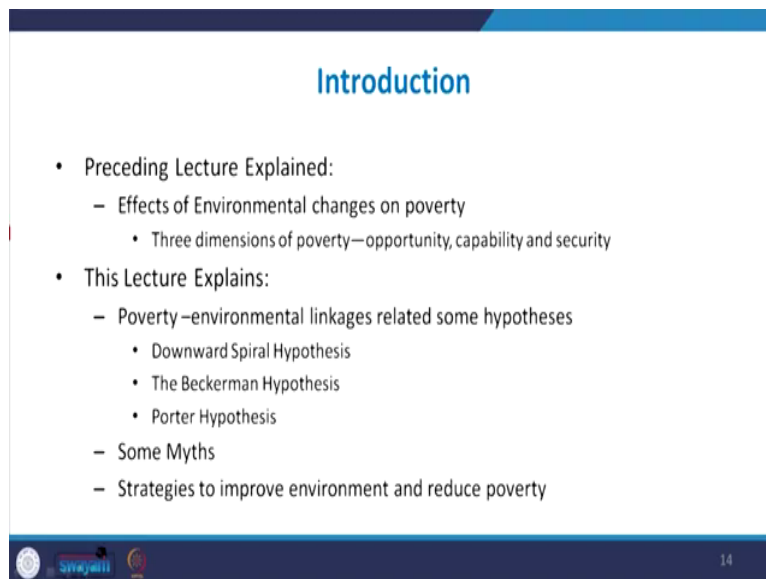


Introduction to Environmental Economics
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Lecture – 18
Poverty and Environment Linkages – III

Dear students, in the preceding lecture you have studied about the effects of environmental changes on poverty. I explained you the three dimension of poverty: opportunity, capability and security. In this lecture, you will study about Poverty, Environment related some hypothesis.

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Introduction

- Preceding Lecture Explained:
 - Effects of Environmental changes on poverty
 - Three dimensions of poverty—opportunity, capability and security
- This Lecture Explains:
 - Poverty–environmental linkages related some hypotheses
 - Downward Spiral Hypothesis
 - The Beckerman Hypothesis
 - Porter Hypothesis
 - Some Myths
 - Strategies to improve environment and reduce poverty

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Key hypothesis are downward spiral hypothesis, the Beckerman hypothesis, Porter hypothesis. So, these three hypothesis will be discuss in detail in this lecture and you will also study about

some myths related to environment and poverty lesson. And finally, I will explain you some strategy that are required to improve the environment and reduce the poverty.

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Poverty and Environment Linkages: Some Hypotheses

- The environment-poverty nexus is a two-way relationship.
- Environment affects poverty situations in three distinct dimensions : by providing sources of livelihoods to poor people, by affecting their health and by influencing their vulnerability.
- On the other hand, poverty affects environment in various ways: by forcing poor people to degrade environment, by encouraging countries to promote economic growth at the expense of environment, and by inducing societies to downgrade environmental concerns.
- Poverty → environment degradation
- Environment degradation → poverty

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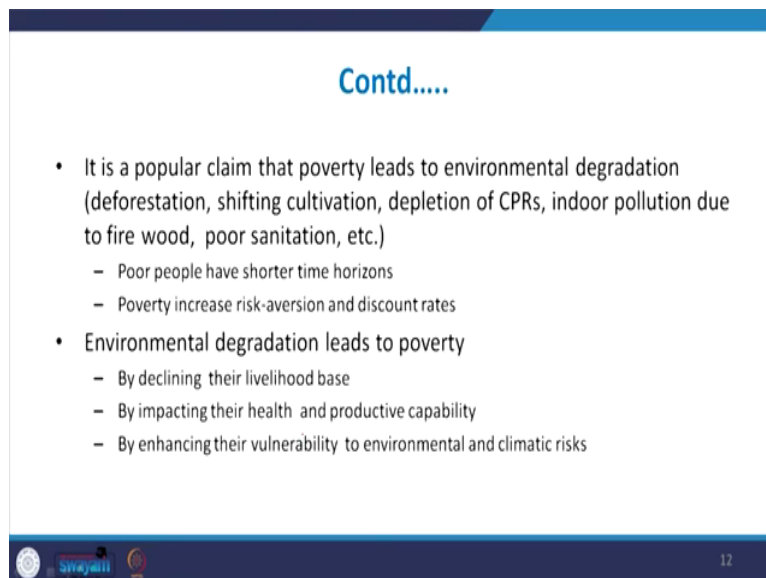
Now, another topic or subsection here is poverty and environment linkages some hypothesis. So, there are certain kind of hypothesis related to the poverty environment nexus. The environment poverty nexus is a two way relation. Environment affect poverty situations in three distinct dimensions, as I already discussed in the preceding lecture, by providing source of livelihood to the poor people, by affecting the health and by influencing the vulnerability.

So in fact, these are the three key dimension of the poverty, providing source of livelihood means opportunity, affecting their health means capability and by influencing their vulnerability means security. So, opportunity, capability and security these are the three distinct dimension of poverty. On the other hand poverty also affect environment in various ways by forcing the

poor people to degrade the environment, by encouraging countries to promote high economic growth at the expense of environment.

And, by inducing society to downgrade environmental concerns, these things I also discussed earlier. Now, if you look at the relationship then we had the two views; first view is poverty leads to environmental degradation, second is environmental degradation lead to poverty increase.

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The slide is titled "Contd...." and contains the following content:

- It is a popular claim that poverty leads to environmental degradation (deforestation, shifting cultivation, depletion of CPRs, indoor pollution due to fire wood, poor sanitation, etc.)
 - Poor people have shorter time horizons
 - Poverty increase risk-aversion and discount rates
- Environmental degradation leads to poverty
 - By declining their livelihood base
 - By impacting their health and productive capability
 - By enhancing their vulnerability to environmental and climatic risks

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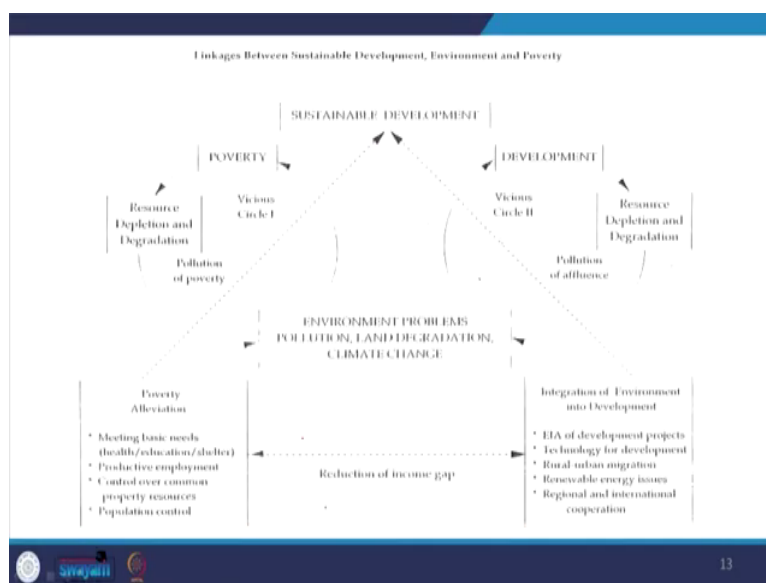
So, it is popular claim that poverty leads to environmental degradation like deforestation, shifting cultivation, depletion of common property resources, indoor pollution due to fire wood, poor sanitation etcetera. So, all these are the effects of poverty that effects the environment, poor people have shorter time horizon. So, they give more weight to show term and poverty increase risk aversion and discount rate.

So, poor people have shorter time horizon. This is one argument that poor people give more weight to short term and therefore, they try to maximize their return in the short run. And, may ignore the long runs long run sustainability, second argument is poverty increase risk aversion and discount rates. So, poor people have high discount rate for the current as compared to the future and that take risk and therefore, they give more weight to the present rather than to the future.

And, that have adverse impact on environmental degradation. Then environmental degradation lead to poverty, this is second argument. So, second argument is not only poverty leads to environmental degradation, but environmental degradation also lead to poverty increase. How? By declining their livelihood base, second by impacting their health and productive capabilities. So, when environmental degradation occurs, it affects the health and productive capability of the poor people. And, due to this their income earning capability also affected and they may go further into deep poverty. And, third is by enhancing their vulnerability to environmental and climatic risk.

So, vulnerability to environmental and climatic risk is very high among the poor people.

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This graph shows the linkage between sustainable development environment and poverty and its very interesting. So, you can discuss this graph, environmental problems, pollution, land degradation, climate change and here there are two vicious cycle. First vicious cycle is related to poverty. So, pollution of poverty and here you can see how poverty is affecting the environmental degradation. Poverty alleviation is related to as I already told you meeting basic needs like health, education, shelter, productive employment, control our common property resources and population control.

So, these are the measures which required to reduce the poverty and that reduction in poverty that lead to link to the sustainable development. But at the same times when natural resource deplete and degraded that increase the poverty and people move into the vicious circle of poverty. So, that vicious circle of poverty is related to environmental degradation and poverty nexus which I already discussed. But, another important things when we try to establish the

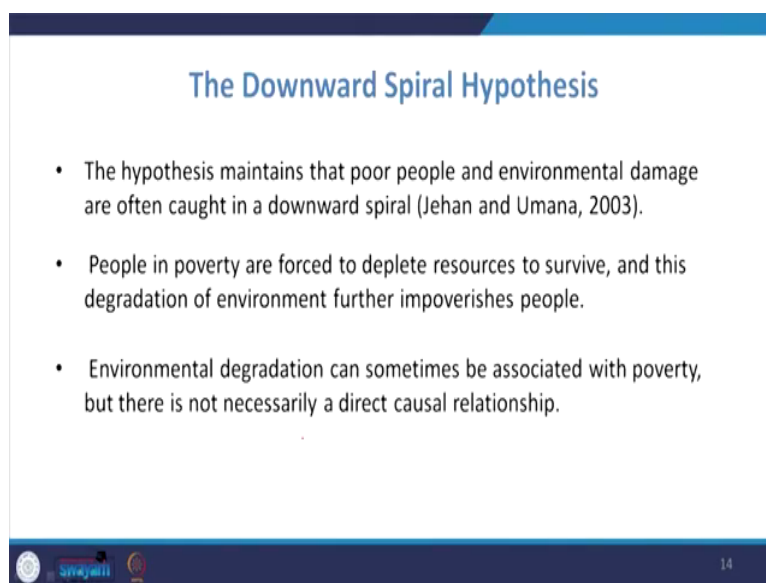
relationship between environment poverty and sustainable development, then major component of environmental degradation is not because of poverty; it is because of effluence.

Means, when a country's economic growth increases and when the growth is coming from most polluted industries, then pollution level will increase. And, resource depletion and degradation also occurs like agro based industries or call based industries, natural resource based industries. So, when we setup these kind of industries which require natural resources and by increasing the economic growth we also deplete the natural resources. But, at the same time there are many industries which increase the growth of the economy, but also release various form of waste: liquid, gaseous and solid waste into the atmosphere and that increase the pollution level and generate the vicious circle of poverty second.

So, both circle are valid, one is related to poverty and environment and other is the high growth rate and pollution relationship. And, integration of environment into development is very very necessary to address these pollutions of effluence circle or vicious circle of relation. Like what you have to do is you have to do environmental impact assessment of many development projects, like in India EI is mandatory for all those projects which has some environmental implication. Technology for development is very very important, rural urban migration is another important issues, renewable energy issues, regional and international cooperation.

So, by addressing all these issues we can achieve the sustainable development. Now, we can discuss several hypothesis which are directly related to the poverty environment nexus.

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The Downward Spiral Hypothesis

- The hypothesis maintains that poor people and environmental damage are often caught in a downward spiral (Jehan and Umana, 2003).
- People in poverty are forced to deplete resources to survive, and this degradation of environment further impoverishes people.
- Environmental degradation can sometimes be associated with poverty, but there is not necessarily a direct causal relationship.

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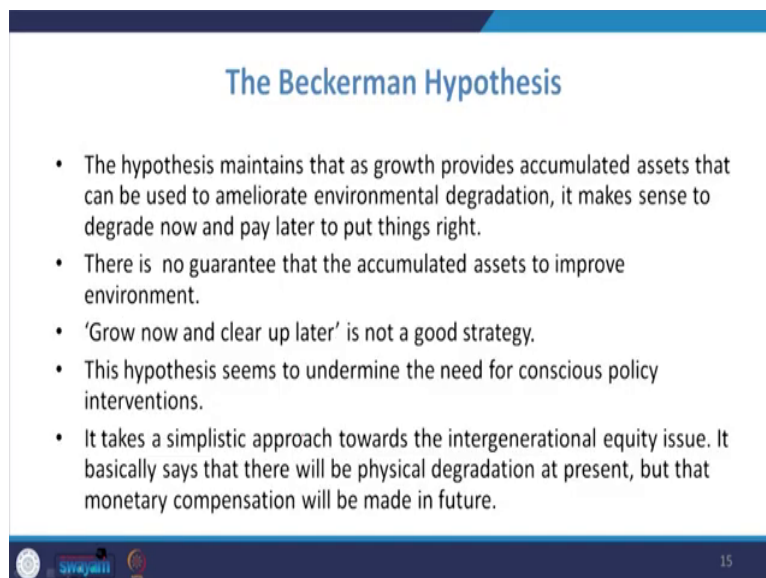
First hypothesis is downward spiral hypothesis. This hypothesis maintains that poor people and environment damage are often caught in a downward spiral according to Jehan and Umana in 2003. People in poverty are forced to deplete resources to survive and this degradation of environment further improves people. So, this actually I already discussed the in the preceding slide, the relationship between sustainable development, environment and poverty.

So, actually this hypothesis is clearly mention that poor people damage environment and since poor people depend more on natural resources. So, they degrade the environment and when environment is degraded then the people depending on the environment, due to degradation of environmental resources they further go into poverty. So, this becomes a vicious circle of

poverty. Environmental degradation can sometimes be associated with poverty, but there is not necessary a direct causal relationship between poverty and environment.

So, although this hypothesis shows that the environmental degradation lead to poverty and poverty lead to environmental degradation. But, empirical evidence is shows that there are many many other issues, many other factors which also affect the environment not just the poverty. So, this hypothesis has certain limitations because empirical evidence is cannot show that only the poverty is responsible for the environmental degradation; as we discuss in the preceding graph.

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The slide is titled "The Beckerman Hypothesis" in blue text. It contains a bulleted list of five points. At the bottom left, there are three small circular logos. At the bottom right, the number "15" is displayed.

The Beckerman Hypothesis

- The hypothesis maintains that as growth provides accumulated assets that can be used to ameliorate environmental degradation, it makes sense to degrade now and pay later to put things right.
- There is no guarantee that the accumulated assets to improve environment.
- 'Grow now and clear up later' is not a good strategy.
- This hypothesis seems to undermine the need for conscious policy interventions.
- It takes a simplistic approach towards the intergenerational equity issue. It basically says that there will be physical degradation at present, but that monetary compensation will be made in future.

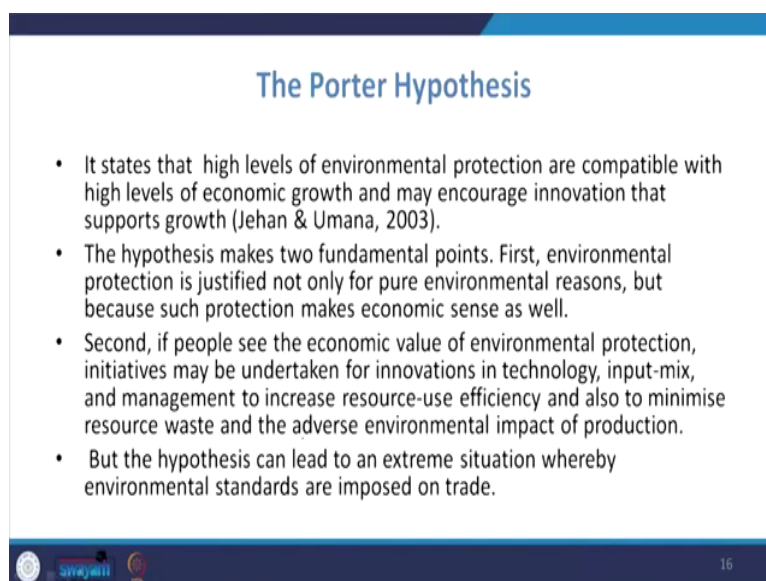
Second hypothesis is Beckerman hypothesis, the hypothesis maintain that as the growth provides accumulated assets, these assets can be used to reduce the environmental degradation. It make sense to degrade now and pay later to put this things right. So, it is very

interesting that according to this hypothesis that when economic growth increases, then accumulated assets capital can be used for environmental improvement. So, environmental degradation can be reduced by making more investment on improving the environment, since economic growth is using more assets for this.

But, point here is that is there any guarantee that the accumulated assets will be invested to improve the environment, this is an issue. Second is grow now and clean up later is it a good strategy? So, and most of the countries now making this argument that first you improve the economic growth and when economic growth is leading to pollution, then you make investment to clean the environment. So, this kind of strategy grow now and clean up later is not a good strategy and not a sustainable strategy. And, this hypothesis seems to be undermine the need for conscious policy interventions. And, another things is that it is a simplest approach towards the intergenerational equity issues. It basically says that there will be physical degradation at present, but the monetary compensation will be made in future.

What does it mean? It means that you generate income today and invest on clean environment tomorrow, but tomorrow who will bear the burden, the next generation. So, intergeneration equity is also the important issues when we discuss the Beckerman hypothesis.

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The Porter Hypothesis

- It states that high levels of environmental protection are compatible with high levels of economic growth and may encourage innovation that supports growth (Jehan & Umana, 2003).
- The hypothesis makes two fundamental points. First, environmental protection is justified not only for pure environmental reasons, but because such protection makes economic sense as well.
- Second, if people see the economic value of environmental protection, initiatives may be undertaken for innovations in technology, input-mix, and management to increase resource-use efficiency and also to minimise resource waste and the adverse environmental impact of production.
- But the hypothesis can lead to an extreme situation whereby environmental standards are imposed on trade.

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Then third hypothesis is the Porter hypothesis, the Porter hypothesis states that high level of environmental protection are compatible with high level of economic growth and may encourage innovation and support growth. This hypothesis makes two fundamental points; first environmental protection is justified not only for the sake of environmental improvement, but also for increasing the economic growth. Second if people see the economic value of environmental protection initiatives may be undertaken for innovations in technology, input mix and management to increase resource use efficiency and also to minimize resource waste and adverse environmental impact on production.

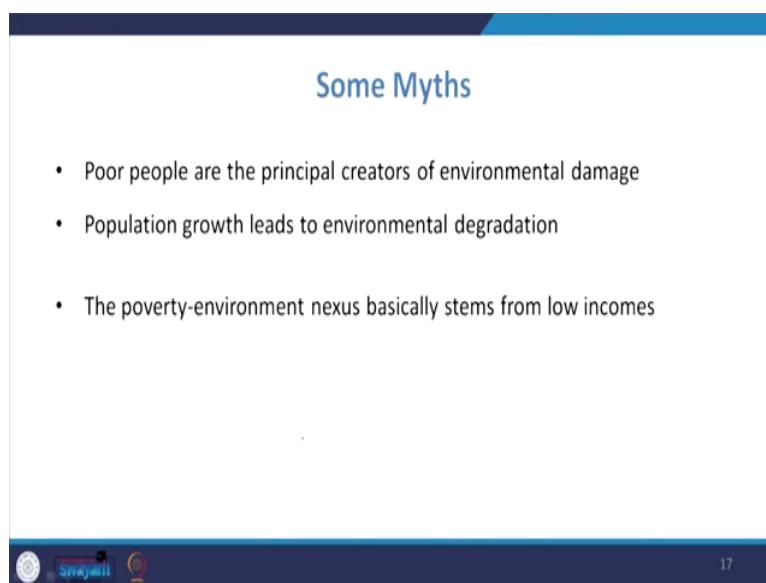
So, this Porter hypothesis clearly indicates that if economic growth increases, then environmental protection can also be achieved. Means, environmental protection is compatible with the economic growth and the major argument here is that innovations and technology would lead to resource conservation in the economy. And, and better environmental

conditions will improve due to technological interventions, due to high level of resource use efficiency. And, due to better waste management as a country has more resources because of increase in GDP growth rate to invest on waste management, cleaning the wastewater etcetera.

So, it will lead to better environmental conditions, but this hypothesis can lead to an extreme situation thereby, environmental standards are imposed on trade. So, one of the issue in this regard is that some countries may use high environmental standard as a trade barriers for other countries. And in fact, in WTO this issue several time came into discussion that the environmental standards should be introduced in the multilateral trading system. So, for example, if India want to export dairy products and if in processing and producing the dairy product, the hygienic conditions are not met.

High level of environmental standards are not met, then our dairy products in international market may not be acceptable. So, it may be indirectly restriction on the trade if we try to introduce this environmental standards in relation to trade.

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Some Myths

- Poor people are the principal creators of environmental damage
- Population growth leads to environmental degradation
- The poverty-environment nexus basically stems from low incomes

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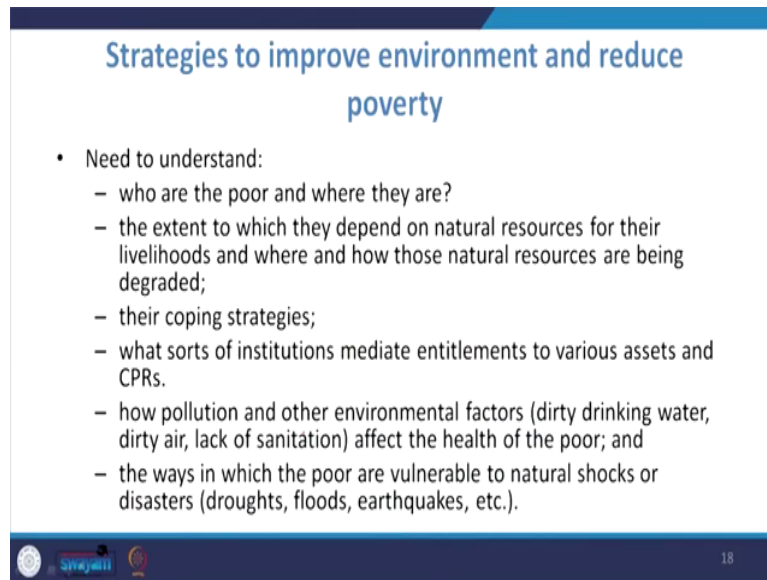
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There are certain myths regarding the relationship between environment and poverty. First is poor people are the principal creator of environmental damage, that this is a simple myth and you can see some empirical evidence is that large number of pollution that is occurring in most of the countries are not because of poverty, it is because of high growth of industrialization, urbanization etcetera. So, so this is simply a myth that poor people degrade more environment as compared to the rich people.

Because, rich people consume more resources, they consume more energies and also release more waste into the atmosphere. Therefore, this simply seems to be a myth, population growth related to environmental degradation. Again this is also debatable issue and seems to be a myth whether population growth would lead to environmental degradation etcetera. Then third is poverty environment nexus basically stem from low income. So, this is also a myth that

environmental degradation and occurs because of the low level of income or in developing countries where level of income is quite low.

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The slide features a blue header with the title "Strategies to improve environment and reduce poverty". Below the title is a bulleted list of points. At the bottom of the slide, there are logos for "Swayam" and "18".

Strategies to improve environment and reduce poverty

- Need to understand:
 - who are the poor and where they are?
 - the extent to which they depend on natural resources for their livelihoods and where and how those natural resources are being degraded;
 - their coping strategies;
 - what sorts of institutions mediate entitlements to various assets and CPRs.
 - how pollution and other environmental factors (dirty drinking water, dirty air, lack of sanitation) affect the health of the poor; and
 - the ways in which the poor are vulnerable to natural shocks or disasters (droughts, floods, earthquakes, etc.).

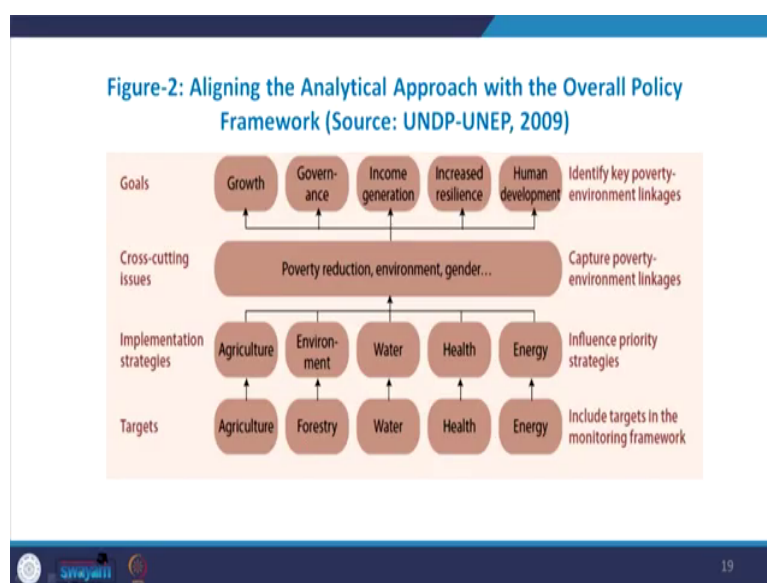
And now, let me just discuss in brief what kind of strategies we can adopt to improve the environment and reduce the poverty. So, what you need is you have to understand who are they poor, where they are. So, if we know in which region the poor concentrate, in which activities the poor concentrate and who are they whether they belongs to the marginalized group whether they are landless labour whether they are pretty small vendors etcetera. So, if we know who are the poor and where are they, then certainly an appropriate policy interventions can be made to reduce the poverty.

Then extent to which they depend on natural resources for their livelihood; so, we should also understand up to what extent the poor people depend on natural resources for their livelihood.

And, where and how these natural resources are being degraded, then appropriate actions in terms of policy can be initiated. Then their coping strategies. So, we should also conduct studies and of course, many studies are being done. How the poor people follow the coping strategies in order to have the or mitigate the adverse impact of climate change or environmental harsh or adverse environmental conditions.

What sort of institution mediate entitlement to various assets and CPR; so, that is also important to understand how pollution and other environmental factors like dirty drinking water, dirty air, lack of sanitation affect the health of the poor. So, studies are required to know up to what extent the pollution and other environmental factors affect the health of the poor people. So, that appropriate actions can be taken in terms of policy to address these issues. And, the way in which the poor are vulnerable to natural shocks or disasters like drought, flood, earthquake. These understanding of these issues are very very important to follow the appropriate strategies.

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Let me now explain the figure 2: aligning the analytical approach with the overall policy framework that is suggested by United Nation Development Programme and United Nations Environmental Programme handbook in 2009. Here goals cross cutting issues, implementation strategies and targets. So, goal is growth, governance, income generation, increased resilience, human development. So, ultimately what we have to do is the ultimate goal is to achieve the human development.

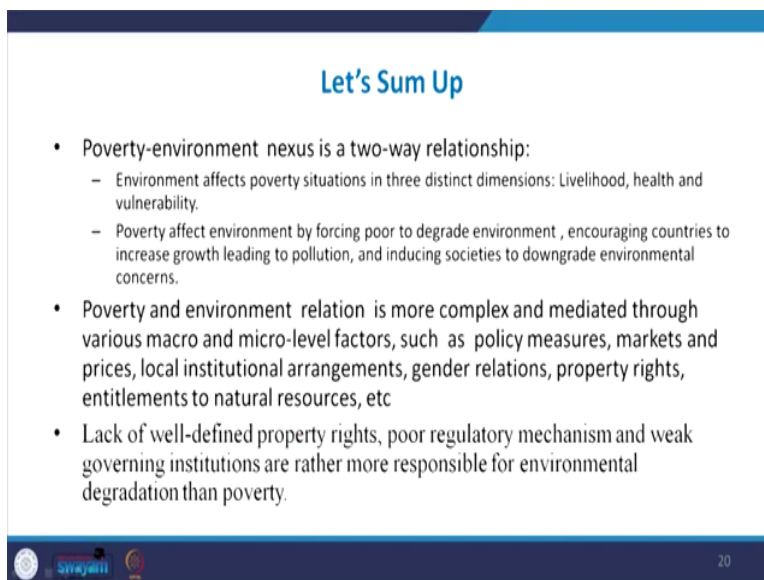
So, here identify the key poverty environment linkages. So, one has to identify the key environment poverty linkages and focus is on growth, governance, income generation, increase resilience of poor people to natural shocks, risk and ultimately to achieve the human development. Now, how this can be received? Growth like poverty reduction, environment and gender issues; they are cross cutting issues. So, you cannot prepare only it is not a function of only single ministry because environment issue should be part and parcel of all

departments and ministries. So, that environmental conditions can be improved and poverty can be reduced.

So, in order to establish or capture the poverty and environmental linkages, then these two issues are cross cutting, the cross cutting issues which can be not limited to only one ministry or one department, but across ministries and departments. Then as for as implementation strategy is concerned, as I in the very beginning told you who are the poor, where are they. So, if we know the majority the poor people are engaging in agriculture as a small farmers or agricultural labourers, then priority must be given on agriculture, then environment, then water, health, energy.

So, these are the sectors where policy interventions required to be made to influence the priority strategies. And finally, the target is to improve the agriculture, forestry, water, health and energy and include the target in monetary framework of any policies. So, let me now just wind up or sum up this lecture. First point we had discuss in this lecture is poverty environment nexus is a two way relation. So, when we try to establish the linkage between poverty and environment, then you have to keep in mind that this relationship is in a two way system.

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The slide is titled "Let's Sum Up" in blue text. It contains three bullet points. The first bullet point is "Poverty-environment nexus is a two-way relationship:" followed by two sub-bullets: "Environment affects poverty situations in three distinct dimensions: Livelihood, health and vulnerability." and "Poverty affect environment by forcing poor to degrade environment , encouraging countries to increase growth leading to pollution, and inducing societies to downgrade environmental concerns." The second bullet point is "Poverty and environment relation is more complex and mediated through various macro and micro-level factors, such as policy measures, markets and prices, local institutional arrangements, gender relations, property rights, entitlements to natural resources, etc". The third bullet point is "Lack of well-defined property rights, poor regulatory mechanism and weak governing institutions are rather more responsible for environmental degradation than poverty." At the bottom of the slide, there are logos for "swayam" and "20".

Let's Sum Up

- Poverty-environment nexus is a two-way relationship:
 - Environment affects poverty situations in three distinct dimensions: Livelihood, health and vulnerability.
 - Poverty affect environment by forcing poor to degrade environment , encouraging countries to increase growth leading to pollution, and inducing societies to downgrade environmental concerns.
- Poverty and environment relation is more complex and mediated through various macro and micro-level factors, such as policy measures, markets and prices, local institutional arrangements, gender relations, property rights, entitlements to natural resources, etc
- Lack of well-defined property rights, poor regulatory mechanism and weak governing institutions are rather more responsible for environmental degradation than poverty.

Poverty and environment relation is not very simple. So, you cannot simply establish the relationship between poverty and environment, it is very complex and it is mediated through various macro and micro level factors such as policy measures, market and prices, local institution arrangement, gender relation, property rights, entitlement to natural resources etcetera. Lack of well-defined property rights, poor regulatory mechanism and weak governing institutions are rather more responsible for environmental degradation than poverty.

So, apart from poverty, there are many other factors like well defined property rights. Why these is a over grazing of common property resources or why there is a tragedy of commons or why there is a over stress on the common property resources? One of the argument made is that since there is no well defined property rights; so, by instituting the well defined property rights; many of the issues related to environmental protections can be solved. If the property

rights are well defined; moreover if we have effective regulatory and monitoring mechanisms and if we have the strong governing institutions.

So, with this I thank you all.