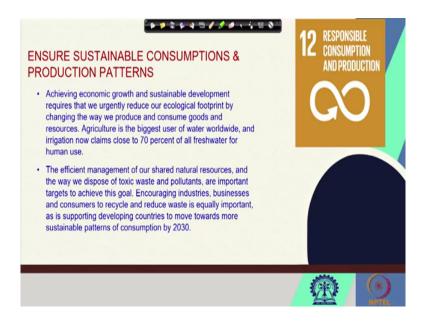
## Education for Sustainable Development Prof. Atasi Mohanty Rekhi Centre of Excellence for the Science of Happiness Department of Humanities and Social Sciences Indian Institute of Technology, Kharagpur

## Lecture - 04 Sustainable Development Goals (Contd.)

Welcome dear friends. So, now, we will begin the next topic; that means, continuing the next SDGs on the of the course of Education for Sustainable Development.

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So, we have already discussed up to 11 SDGs. So, now, today we will just discuss about the 12 SDG 12 that is the responsible consumption and production that we will discuss about that. So, what is the target; what is the target of SDG 12 that is ensure sustainable consumption and production patterns.

So, how to; that means, how to adopt that style of lifestyle in the such a way that all the citizens become very conscious about the responsible consumption and responsible production. In the sense that it has to be eco friendly it is there should not be any wastage of our resources all kinds of things that is the main focus of this SDG.

So, achieving the economic growth and sustainable development, but it requires to reduce our ecological footprint; that is a carbon footprint by changing the way we produce and consume the goods and resources. Like for example, the our factories our you know industries at and industries and other kinds of other kinds of the production oriented or manufacturing sector industries actually they are they also produce wastage and the wastage also lot of wastages and carbon carbons etcetera as a result of their manufacturing process; how to minimize it.

Then again even if like for example, unnecessary we purchase and consume lot of things lot of you know FMCG products or the all kinds of the consumer related products market products etcetera, that is not actually wise and sustainable. So, how to develop this kind of mindset to consume sustainably and to produce sustainably? So, again now in our country agriculture is the biggest user of water worldwide and irrigation now claims close to 70 percent of all our fresh water.

So, the efficient management of a shared natural resources a sources like our mineral products our energy and our water our you know other kinds of minerals all kinds of (Refer Time: 02:36). So, and the way we dispose this toxic outcome toxic waste and the pollutants are important to target this achieve goal. So, how do we use, how do we consume the products, how do we waste, how do we dispose this waste products and the pollutants etcetera these are very important factors of you know ecological sustainability.

So, that is why encouraging all encouraging the industries and businessmen and the consumers to recycle and to reduce the waste in equally is equally important is equally important and to and to it will help us in moving towards more sustainable patterns of consumption by 2030.

So, that is the way; that means, not only we in our individual household in the you know in individual household we practices in such things, but we have also should motivate also should direct the industries in terms of policy and the declaration etcetera that how sustainably they can produce certain things goods and other products.

And in even the manufacturing industry and how they can sustainably dispose the toxic pollutants in how to dispose it sustainably; that means, now nowadays the recycling of the waste products the waste management the.

So, all these kind of the technology for this kind of the things are should also be followed. So, how to; that means, direct how to motivate the industry people industries and organizations business houses that is to even though they produce the very valuable goods.

How they can dispose it. So, in a very in a very disposed in a very sustainable way.

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For this is all about; that means, having the per capita global food waste then waste in the waste at the retailer and consumer level is also important for it. How do we dispose our waste products like the extra food materials how to dispose it how to you know serve it others and all kinds of things. So, that food security also this can also help us in protecting our food security and shift us towards the more valuable resource efficient economy.

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So, sustainable consumption as we know that is the means that the our food practices our diet that how do we meet our dietary practices today in terms of the nutrition and nutrition and compromising the needs of other future generation.

That means, we were not we should not that mean as if as because we are getting the plenty of materials, plenty of food materials other kinds of the materials we should not waste it rather we should distribute it with we should actually we should serve it to the poor people to the disadvantaged people who are not getting it actually.

So, that is why; that means, in this way we should go beyond our own need our own you know satisfaction which would go beyond our own self interest, ambitions, achievement and aspirations, but to think about the planet to think about the community to think about the people as well.

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The next is that 13 glow SDG 13 is the climate action climate action; that means, to take urgent action to combat the climate change and its impact. Nowadays all of us as we are very familiar with you know this global warming and the climate change aspects and then how this our climate has become you know disruptive; that means, irregular in you know regular occurrence of storms and then floods all tsunamis all kind there is no regularity in the seasons and the climate process.

So, that is an impact of these the environmental you know disasters or the eco; that means, the unsustainable planet unsustainable planet or how we are just torturing our planet and not caring for its resources etcetera. So, that is a that is in the present scenario with the climate change with a climate in the climate change and the disasters or natural disasters occurring frequently. So, it is a it is an it is the need of the (Refer Time: 06:48) utmost important to take the urgent action to combat this climate change and its impact; that means, its greenhouse impacts.

So, greenhouse gas emissions are more than 50 percent higher in comparison to 1990s and the global warming is actually the cause of long lasting change in our climate system. So, that is why this is the data that this is not the data that the geophysical that is why the geophysical

disasters are taking place or almost 90 percent of the climate related things are you know are affecting our environments.

So, here the primary focus is how to mobilize our resources the financial resources its annually and address to address this the requirement of the environmental requirements of the of to take care of to take or mitigate the challenges that we are facing due to the climate change in the global warning.

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So, this is the these are supporting that the supporting; that means, supporting documents literature that you can find out. So, find out in the industrial sector in the industrial sector and with the more investment and the technology use how we can minimize this kind of thing how can minimize this thing.

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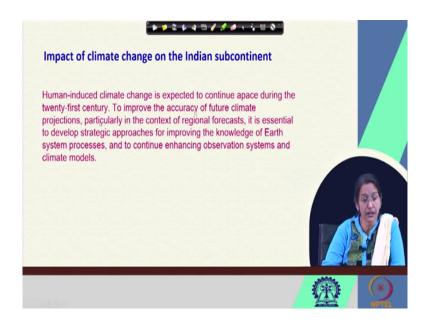


So, the since the middle of the twentieth century India has witnessed rise in the average temperature. Now because after this tsunami after this super cyclone after these things then in the coastal region in especially in the coastal region the temperature is increasing day by day.

So, the that is the again then rainfall the rainfall you know rainfall volume quantity also is decreasing it is very irregular. So, that also affects not only our human lives, but also affects our agriculture you know agriculture and all kinds of the activities all kinds of the business activities as well.

So, that is why that there is a compelling scientific evidence that the human activities are influenced by this kind of the regional climate change. So, we have to; that means, in order to increase our manpower enhance our capacity capabilities and the skills and competences also we need to deal with this kind of climatic changes. Because climate has also significant impact on our not only the life style and, but production also, but production and business activities also.

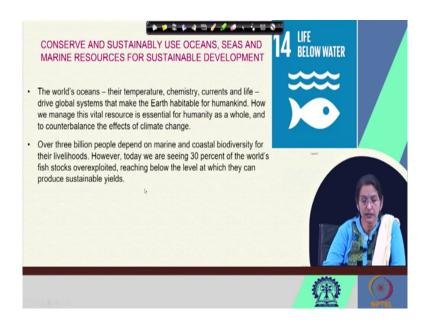
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So, that is why the that is to improve this accuracy of the future climate projection in the context of regional forecasts. So, therefore, it has been; it has been it has been very strategic it has been it has become the very important of utmost importance to improve the knowledge about the our geophysical system as well as to continue enhancing the observation system, monitoring system and you know develop certain climate models with the predictions and assumptions and with the help of the technology and other kinds of research.

We should take care of this otherwise the future will be you know doomed the future will be doomed.

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So, that is the; that is the regarding the climate change. Then the SDG 14 that is the life below water that is the how to sustainably conserve, how to sustainably conserve our water. Because you know almost 70 percent of our water is confined to the seas that is salted water and the only that there is only the drinking water kind of the pure water is only available little percentage of (Refer Time: 10:06) how to sustainably use it and distribute among our stakeholders among our citizens that is the biggest challenge.

So, conserve and sustainably use the ocean seas and the marine resources; that means, resources our natural the biological resources like the marine life marine resources that is living purely in underwater below water. So, that we have to take care of it that is that take care of our marine products. So, marine resources for sustainable development also.

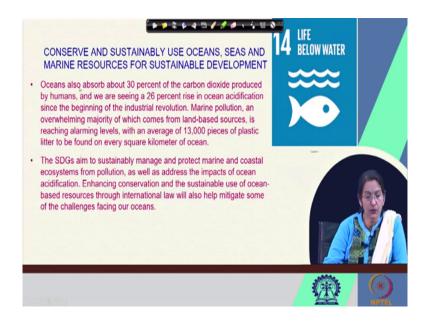
So, that is why the with the worlds ocean you know with global warming worlds in the worlds ocean the temperature the chemistry the currents all kinds of things these are also being changed these are being changed and affects the habitat human habitat. So, that is how to manage these vital resources its way has become very essential for the humanity as a whole and especially for the to counter balance to counter check the this climate effect.

So, there are three billion people depends on the marine and coastal biodiversity of their livelihood especially the coastal region. And India being the peninsula is the peninsula; that

means, lower portion; that means, the western portion southern portion majority major portions major regional portions are lying in the coastal region.

So, and it has thus that is why the marine type that the oceans the seas are become the you know resource source of income source of habitat source of economical and financial life source of living also day to day source of living for many of our citizens many of our citizens residing in the coastal areas. So, that is why how to sustainably use these resources and the marine life in a. So, effective way. So, that it would not only that we can restore the resources for the future generation, but also we can sustainably use it for our present requirement.

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So, how to sustainably conserve these oceans and etcetera. So, because oceans observe 30 percent of the carbon dioxide produce by the humans and the industries as a result etcetera. So, that is a marine pollution also increases marine pollution. So, and with the overwhelming majority which comes from the river through the rivers also through the rivers through the cities and ultimately it is coming to the oceans.

So, that is the SDG therefore, aims to sustainably manage and protect the marine and coastal ecosystem for the pollutions as well as; as well as to address the impact of the oceans impact of the oceans that is why enhancing the conservation for the sustainable use of the ocean based resources has become an international issue international law.

And there are also different policies international laws and the you know regulations are there; regulations are there how to sustainably use the sea seas and the oceans and how to you know mitigate this some of the crucial challenges. For example, the oil spills then; that means, excess; that means, excess; that means, excess excessive excess wastage and pollutions that is in the marine life and how we are; how we are using that sea life or ocean or water waters in an around our regional spaces how sustainable whether we are using it sustainably or not.

So, these are the factors that actually that these are the factor that not only affects our life style our habitat our marine life, but also as a whole our planet. So, planet and human life also that is why it has become goal SDG 14 goal number 14 that is how to deal with the our water resources and the life below the water like our marine life. The fisheries and other kinds of a marine life how to take care of them and sustainably use these use them so, that we can protect our environment.

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Then the 15 is like the 15 SDG 15 is on life on land; life on land. So, that is a life on land like our on all the land forest and the forest and the lands how we are using it especially the greens especially the greens. So, protect and restore and promote the sustainable use of the territorial ecosystem. Ecosystem sustainable sustainably manage our forest then the you know

then the combat the certification of like you know that reverse the land degradation and the halt of the biodiversity loss and the halt of the biodiversity loss.

That is the focus of this SDG 15 that is to take care of the biodiversity; that means the, how to sustainably use our forest resources. And you know for the mega projects for mega projects how to you know how to monitor how to evaluate how to what extent it is affecting the human life to what extent it is affecting the our environment.

So, that is the more and more because you know oxygen where because of this you know carbon excess carbon dioxide in the atmosphere not only it causes the pollution, but also it affects human health also. So, human health also.

So, that is why how to halt this biodiversity loss. So, that is the major the factor under this SDG. So, human life because as of us all of us we know human life depends on the earth as much as the oceans for our you know sustenance and livelihoods that is why. So, plant life almost at least provides 80 percent of the human diet.

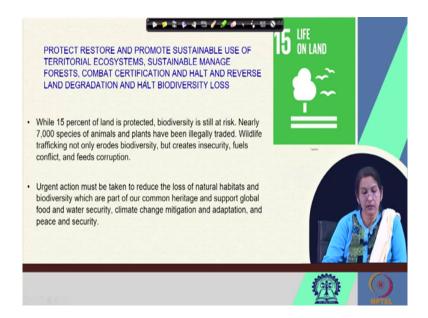
So, that is why in India agriculture has become the has been an important source of economic resource and forest also almost covers a 30 percent of the earth you know surface. So, that is why how to; that means, an again it is also it is a vital habitat for our millions of species and animals. So, it is a you know base it is a; it is a living space it is a base of the this animal planet.

So, that is why so, how to maintain this clean air water and you know as well as combating the climate change for that matter the we have to be very cautious and careful about our land our lands and the equations in the land like the green the percentage of the greenery then the pollutions the air then temperature and the water all these kinds of things were very important.

So, because you know every year a lot a large sector of the land actually is being lost because of the construction because of the factory industry and etcetera. So, in this way the our greenery actually gradually decreases because being effected. So, disproportionately which also affecting the communities.

So, because of the deforestation also the temperature the climate change also is an is outcome of these kind of disasters habitat disasters practices etcetera. That is why so, this SDG 15 that is the how to take care of the life on the land both the human being and the animal planet also.

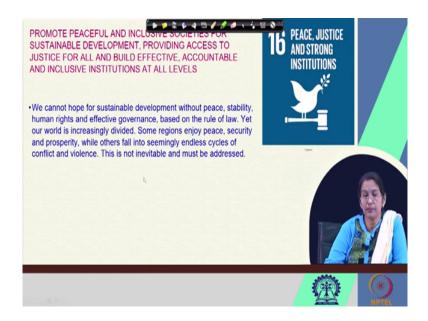
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So, that is why it has been become very important factor. So, and that is why urgent action must be taken to reduce this kind of loss of the natural habitat and to take care of the biodiversity which actually you know it is a part of our common heritage and support system.

So, that is climate change mitigation and adaptation is you know adaptation and the peace and security; that means, co habitat coexistence of all the living organisms and take care of the environment has become the priority of this SDG.

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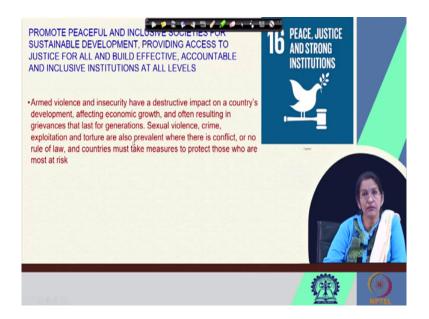
Now, the next SDG is that is the 16 number SDG is the peace justice and strong institution. How to build a peaceful society, how to provide justice, how to have a strong institutions, how to build the strong institutions by providing the access to all justice to all to build an effective accountable and inclusive institutions at all level. That means, we have to be accountable we have to be responsible not only in our consumption production and etcetera, but we have to be careful for our society for our future generation for our resource depletion and so.

How to be careful? So, that is how we cannot hope for sustainable development without peace human rights stability justice etcetera and effective governance also because we in order to you know in order to mobilize all the resources and in order to enhance the human resource power we need some kinds of rules regulations justice legal systems etcetera to maintain peace to you know to maintain peace then to built the strong institution with the ethical value standards etcetera.

So, that is and to you know to remove all kinds of the conflicts chaos and because of the n number of reasons that is. So, which also forms into the in the preview of this in the society and the governance under sector. So, communal violence and the conflict and all kinds of this all kinds of things it is over burden our society with you know with a limited resources also.

Because so, that is why it inevitable, but how to how it must be addressed how it must be addressed that is an important factor here.

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So, violence is a as a we can see all of us we can see in and around in our neighboring countries in and around India is continuously facing all kinds of the border challenges, the security challenges, terrorism challenges and internal security challenges also. How to how; that means, it has a negative impact and disruptive impact definitely on our society and effecting not only the economic growth all, but also resulting in a kind of you know grievances very tensions and the depressions and all kinds of the negative emotions are emerging out of it.

So, that is in order to so that is the main cause of this social conflict any kind all kinds of violence crime and all kinds of torture and actually it gradually the human society is moving towards becoming very you know clinical and all kinds of the clinical abnormal and you can say the psychologically depressed. So, that is the how to take the necessity necessary measures to protect not only our resources, but also our society our mankind our people our human resource.

So, that has been. So, that is why to focus on the peace justice and the and to how to build the strong institution with a value system with a ethical standard of practices.

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So, therefore, this SDG aims to significantly reduce all forms of the violence and work with the government and communities to end the conflict and insecurity. So, promoting the rule of law human rights gender equality we have already discuss gender equality. At the key processes of reducing this low this flow of the illicit and illicit arms etcetera then terrorism and strengthening our the participation of our developing countries in the institution building or global governance.

So, that means, we almost all of us we can develop not only develop an awareness about the sustainability and sustainable resource development etcetera. But about our ethical behaviors our pro social behavior our governance we have to be you know you have to be very resilient about the molasses that is happening in an around our society we must be very responsible in taking the ownership and taking the responsibility of you know addressing all these issues through media through action through you know and through social media through actions through different kinds of approaching the government agencies.

And working with non governmental agency. So, this is our primary responsibility is the social responsibility of every citizen it is not just confined to different organizations working on this domain, but it is the common it is a common it is the responsibility for all of us.

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So, therefore, the SDG then the next then the so, this is the primary target of good governance and even the corporates also they have been assigned the task to through corporate social responsibility to take care of not only the; not only the natural resources, but human resources and for enhancing the skills and competencies of the our man power all kinds of things.

Now the next is our 17 that is the partnership for the goals. In order to achieve in order to achieve all these 17 all these 16 goals we need partner partnership collaboration etcetera. So, that is why by strengthening the means of implementation revitalizing the global partnership for sustainable development. So; that means, all alone; that means, independently we cannot achieve all the 70s all the 17 goals in a very 16 goals in a very short period of time by 2030 or 2020 and 2030.

So, but that is why for that matter we need to collaborate with us because we now post globalization we are living in the global setup; that means, all of us we are interconnected because we are the global citizens. So, therefore, how to build up that network and partnership sustainable partnership for not only exchange our business activities exchange of our business activities, but also sharing the thoughts sharing our knowledge sharing our technology all kinds of things.

So, many such countries therefore, the many countries now also required that official development assistance like to encourage the growth. And it is for example, the developed nation also they should share some of their resources with developing countries or the poor countries in this process of sustainable development.

So, it is not just then it is not just confined to the development of few countries are those who are already. So, it has become a responsibility of the developed countries those who are already achieve some of the SDGs and to a remarkable percentage. So, they are to stretch out they are to help out they are to help out the other developing countries in the sharing the resources information technology and etcetera. So, that they globally all the almost all the counties we can stay we can live peacefully and our planet earth can also be protected.

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So, these are some of the means these are some of the means; that means, how we can develop this global partnership like the like for example, improving the you know sharing of knowledge and technology is an important policy of the you know research and innovation then coordinating the policies to help developing countries to manage their debt as well as promoting the investment at least for the at least for you know sustainable growth and development.

Then the goals also aim to enhance the North-South and South-South cooperation supporting the national plans or international plans some international you know organizations like a summits also summit international conferences, international organizational bodies our organizational like World Trade the WHO then UNESCO organization UNICEF all kinds all kinds of the different kinds of communities and countries that is a economical and financial and business related bodies international bodies and organizations. They are taking care of not only cooperating with each other cooperating with their neighboring countries.

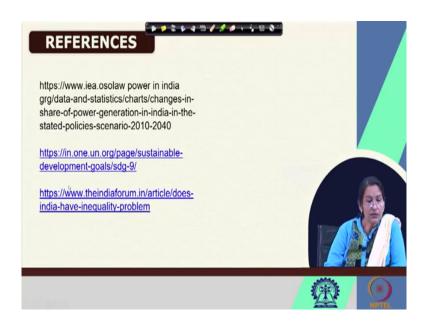
But also in a stretching their help or extending their help with regard to resources to the like the countries who are in the deficit level who are in deficit who are in the disadvantage positions. So, it is not just about the financial or the economic transactions business etcetera, but it is about sharing and caring our resource resources with the you know require with the you know those who are deprived those who are disadvantaged this population also across the world.

So, it is a kind of developing a brotherhood. It is a kind of developing the global brotherhood you know global citizenship. So, that not only we can develop the partnership and different networks for our own inner development, but also the holistic development the harmonious development of you know the total global citizens.

So, now in terms of our you know immigration policy, then you know migration people migrated migrate people; that means, migration policies these kind of different policies; that means, to facilitate to help to you know to support our deprived humanity deprived human deprived societies from different countries how to settle them down. So, that is it is going beyond our owns interest which is going beyond our own countries requirement.

So, we have to be; we have to be a significant we have to play a significant role in the global scenario as well.

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So, these are some of the websites that we can go through because in UNESCO is very active now it is a very active in you know in spelling out in declares in its declaration and implementation of the different policies with the new you know new action plans new strategies new approaches. So, we can update ourselves through these you know through these links and literatures and the policy documents that is coming out from the UNESCO platforms and related UNESCO organizations.

So, now this is we have just discussed about this all the 17 SDGs this is the only this is a brief idea about what SDG which SDGs are addressing which issues. This is a brief out; that means, overall knowledge about the SDGs. Now we will go into the depth in the next sessions about the ESD the role of ESD how what should be the role of ESD, how we should develop the framework, what should be the curriculum framework, what should be the its pedagogical framework, what should be the components and the important factors that should be incorporated.

And through ESD how you know we can enhance not only our knowledge not only our technical skills and competences, but how ESD can play a major role vital role in achieving these kind of the all these SDGs initially for the India for, but in the global context. So, it is

not just focus for India, but is yes definitely in order to play very important role in the global scenario.

We need to develop ourself also. So, we need to be sustainable and we need to achieve almost all these 17 goals then only we can be a very good you know play very important role vital role in global scenario or international scenario. So, this is all about the all these 17 SDGs then we will in the next topic next class we will discuss about the other things other topics chapters.

Thank you very much.