United Nations Sustainable Development Goals (UN SDGs) Professor. Doctor Shiva ji Department of Sustainability Lab, Department of Design Indian Institute of Technology, Hyderabad SDGs and Socio Ecological Systems Economy SDGs; Society SDGs; Biosphere SDGs

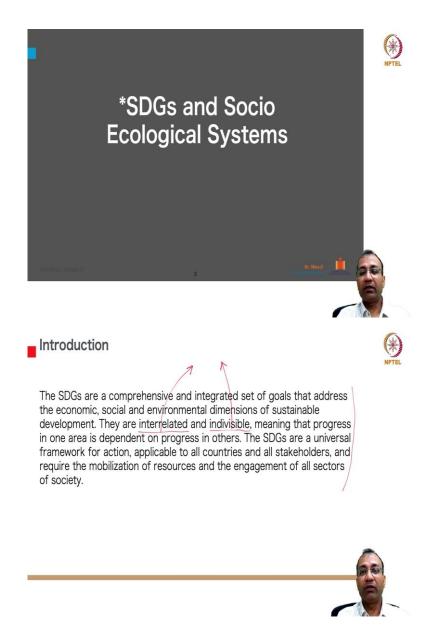
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Hello everyone and welcome you to module 27 of the course of UN SDGs. So, in this module we are going to study the SDGs and social ecological systems. So, on economy we have SDGs 8, 9, 10 and 12. On society SDGs, we have first, second, third, fourth, fifth, seventh, eleventh and sixteenth. On biosphere SDGs, we have 6, 13, 14 and 15.

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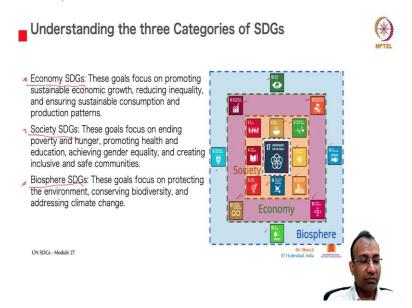


So, SDGs and social ecological systems. The SDGs are a comprehensive and integrated set of goals that address the economic, social and environmental dimensions of sustainable development. They are interrelated and indivisible as we have seen in the previous module, meaning that progress in one area is dependent on progress in others. The SDGs are a universal framework for action, applicable to all countries and all stakeholders and require the mobilization of resources and the engagement of all sectors of society.

So, as you can understand like SDGs are such a set which are part of this overall like ecosystem in this whole planet and they are very much interrelated, individual and interdependent. So, that means a lot longer that are interrelated means they have some repercussion of some sort on the others. Individual, that we cannot keep them in isolation. They are always so, intertwined and interconnected, that they need to be there all of them like together for a comprehensive like outcome and interdependencies like there are lot of factors

for which they are dependent on one another, and this is why like this inter dependency like a factor is also integrated in the set of UN SDG goals.

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So, here, these three categories, if you see are arranged in a unique fashion. In this one, you will see SDG 17 coming at the center of all of this, partnerships or the goals you can see in the center. And then besides this it is flanked by like this society, and then economy and then biosphere. So, in society, we have SDG, 1, 2, 3, 4, 7, 5, 16, and 11. And then economy we have SDG, 8, 9, 12, and 10. And then in biosphere, we have SDG, 6, 15, 14, and 13.

So, economy SDGs if you see here, these goals focus on promoting sustainable economy growth, reducing inequality and ensuring sustainable consumption and production patterns. Society SDGs here in the middle, in the center area, you can see these goals focus on ending poverty and hunger, promoting health and education, achieving gender equality and creating inclusive and safe communities.

And then, biosphere SDGs, these goals focus on protecting the environment, conserving biodiversity and addressing climate change. So, this is how this layout is arranged.

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So, now, we will move to the first set of SDG and socio ecological systems economy SDGs 8, 9 and 12. So, here in this first we will discuss about the SDG 8, decent work and economic growth. This goal aims to promote sustained, inclusive and sustainable economy growth, full and productive employment, and decent work for all. It includes targets to achieve higher levels of economic productivity through diversification, technological upgrading and innovation, with the focus on creating jobs and increasing income opportunities for all.

SDG 9, industry innovation and infrastructure. This goal aims to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. It includes targets to increase the access to infrastructure and technology to support industries that create jobs

and to increase the number of businesses that are owned and controlled by women and other marginalized groups.

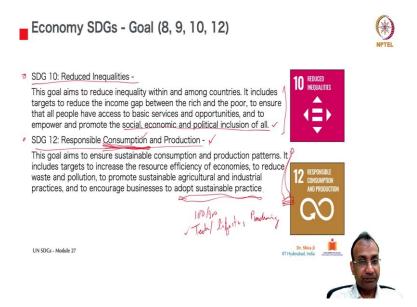
So, you can see how interestingly like these are like these two SDGs are placed under like a economy SDGs. Because they carry like this potential like here in this first one, if you see, this graph actually talks about like a progress and economy growth, that will come from a descending like working opportunities, first of all working opportunities, then come to the decent working opportunities. And if most of the people are employed, they are engaged in some economic activity, overall economic growth of that place, that country is going to obviously rise.

So, with this purpose like, this focuses mostly towards like economic goals, whether for an individual or for the society or for the whole country together, this is interrelated and interdependent on each other. Similarly, in the second one also here in the industry, innovation and infrastructure, they are so much interdependent on each other, and they so much help each other to grow, like industry actually helps creating R&D activities, it is kind of funds and gives them like a catalytic boost to research in those applicable areas, plus innovation can happen at any stage, at any time and from anyone for this about need not do coming from technical background only.

So, innovation, grass root innovation and it was such things if you see, they are there in our society in our culture also for a long time like how to make use of local resources, local energy systems, how to kind of supply it locally and help like a local people in by materially and by virtue of it, so, it is a qualities also. And overall, finally, both of these actually help and aid to the growth of infrastructure.

So, infrastructure actually provides the role opportunity for industries to work and go for innovation and go for creative innovative solutions and making those solutions and providing it right to the consumer and meeting like everyone's demands. So, this is the kind of combination, which we can say is directly falling under economy SDGs.

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Next, we have in line for SDG 10, reduced inequalities and SDG 12 that is responsible consumption and production. So, the first one, this goal aims to reduce inequality within and among countries. It includes targets to reduce the income gap between the rich and the poor, to ensure that all people have access to basic services and opportunities and to empower and promote the social, economic and political inclusive of all.

So, this is the ultimate goal, you can see over here like a social, economic and political inclusion of all so, that nobody is excluded, nobody is not part of in this overall growth and development as a process as a sustainable process. So, bringing everyone together with equal respect, equal access to opportunities, equal share of resources, and all of those like things. So, no disparity among any section of the society or any person, particularly in this society.

Second, we have SDG 12, responsible consumption and production. This we have discussed under, it is in the main module elaborately, like how, in the recent years, and Europeans the people and the societies and industries coming out of that place that region actually got sprayed in all across the world. And since then, actually, the whole planet is facing, its existential like a crisis.

And, this mindset has kind of plagues so, much this planet right now, it requires very like solid and effective and timely effort to undo those wrongs which have already happened. So, we have to save it for today, we have to save it for tomorrow. And in in that learning, talking about consumerism, consumption is an essential like a factor.

So, what it says, let us see, this goal aims to ensure sustainable consumption and production patterns. It includes targets to increase the resource efficiency of economies, to reduce waste and pollution, to promote sustainable agricultural and industrial practices, and to encourage businesses to adopt sustainable practice. So, you can see over here the overall purpose is to help businesses grow and adopt system with practices.

Well, they may be, I think, old maybe 50-year-old, 100-year-old or even more than that. So, a lot has changed in the last 100 years, 200 years. So, from technology to a consumption pattern lifestyle, aspirations like purchasing power of per capita purchasing power. And all of those things, if you see, they have changed drastically. So, in a renewed context how things should be actually taken up, we need you that thinking that rethinking in order to control the damages to the overall environment. So, this is this consideration.



Achieving these SDGs are required to promote sustainable development, and to create a better future for all by providing decent job, infrastructure, reducing inequalities, and promoting sustainable responsible consumption, and production, these SDGs are interconnected, and to achieve one, it is important to work on all of them.

So, as you can see in this, like, statement over here, the overall purpose of these SDGs is to create jobs, creating robust infrastructure, reducing inequalities in all forms from everywhere, and promoting responsible consumption and production, so that every user, every buyer must also be aware of what they are buying, and what are the repercussions and what are the negative impacts that product it can have on the ecosystem that they must know.

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Now, we will move to the SDGs and social ecological systems at the level of society SDGs first, second, third, fourth, fifth, seventh, eleventh and sixteenth. Let us see. So, SDG 1, no poverty. This goal aims to end poverty in all its forms everywhere, it includes targets to reduce the number of people living in extreme poverty, to increase access to basic services and to provide social protections for the most vulnerable.

So, SDG 1 you can see over here, which talks about no poverty and one of the most miserable condition one can have in their entire lifetime is of having no access to like a wealth and having no actually money or listing and unable to feed or meat or any of the demand so, that that becomes a poverty situation. So, if the person in the household is in such a state, it is

very likely that they may be suffering from many other conditions and situations that are arousing arising out of poverty.

Next, we have of SDG 2, Zero Hunger. This goal aims to end hunger achieve food security and improve nutrition and promote sustainable agriculture. It includes targets to increase agricultural productivity, reduce food loss and waste and to ensure that all people have access to sufficient safe and nutritious food.

So, out of poverty, you can see a direct relationship over here, we have discussed it previously in the earlier 26 module that no poverty and Zero Hunger are quite a lot interdependent and they have this unique relationship to share, which works in both ways bidirectional, because so, I a huge number of people across the world are still under the poverty line, which means 1.25 dollars a day. So, they are unable to earn this amount.

And by default, they fall below poverty line. So, I know giving access to sufficient safe and nutritious food is an essential thing to have our future citizens such as kids and like elderly I mean, healthy adult people also, to be safe and sound and be in the proper state of their mind and physical abilities, only then they can be the real assets for the society for the country, and then we will be able to contribute. Otherwise, they will become a liability.

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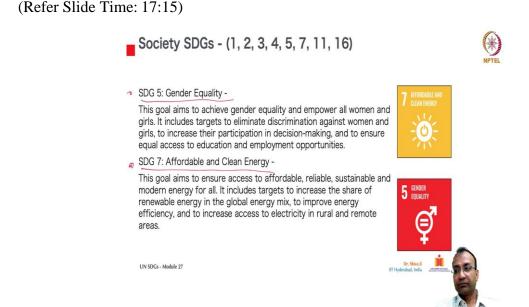
Next, we have SDG 3, good health and well-being. This goal aims to ensure healthy lives and promote wellbeing for all at all ages. It includes targets to reduce maternal and child mortality to combat infectious and non-communicable diseases and to ensure universal access to sexual

and reproductive health services. So, you can see not just physical or mental being mental awareness, mental well-being is also kind of considered over here.

And it is talks about reducing maternal and child mortality, like early child mortality, the childbirth or maybe in the next few months after the birth in the first month, in the first 6 months, in the first in a year to control it to the maximum level and ensure everyone a proper health and well-being all of the lifespan.

Then we have SDG 4, quality education. This goal aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. It includes targets to include increased enrollment and completion rates in primary secondary and tertiary education, to improve the quality of education and to increase the number of trained teachers.

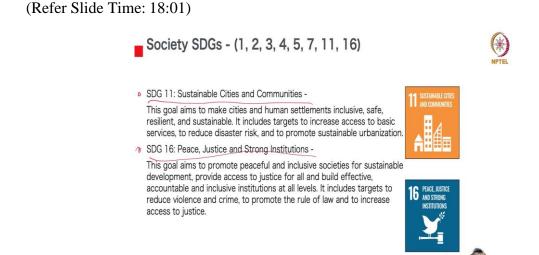
So, teaching, education is one of the activities, which carries the largest potential to help anyone in their life, whether it is about subject knowledge of maybe some domain like technical knowledge, or maybe Arts, Humanities, or any such a field of knowledge if wants to pursue, they can they all carry immense opportunities and possibilities in future, but ensuring it to every member of the society is still a big challenge. We have seen diagram like this SDG 31, module earlier, one big number, often school going kids, they are unable to go and elderly they are also unable to be complete literate.



Next, we have SDG 5, gender equality. This goal aims to achieve gender equality and empower all women and girls. It includes targets to eliminate discrimination against women

and girls, to increase their participation and decision making, and to ensure equal access to education and employment opportunities.

Next, we have SDG 7, affordable and clean energy. This goal aims to ensure access to affordable, reliable and sustainable and modern energy for all. It includes targets to increase the share of renewable energy in the global energy mix, to improve energy efficiency and to increase access to electricity in rural and remote areas.

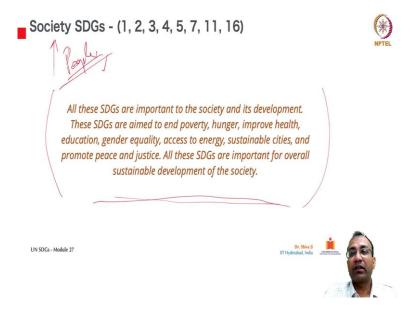


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Then we have SDG 11, Sustainable Cities and Communities. This goal aims to make cities and human settlements inclusive, safe, resilient and sustainable. It includes targets to increase access to basic services to reduce disaster risk, and to promote social organization.

Then we have SDG 16 peace, justice and strong institutions. This goal aims to promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective accountable and inclusive institutions at all levels. It includes targets to reduce violence and crime to promote the rule of law and to increase access to justice.

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Finally, all these SDGs are important to the society and its development. These SDGs are aimed to end poverty, hunger, improve health, education, gender equality, access to energy, sustainable cities and promote peace and justice. All these SDGs are important for overall sustainable development of the society.

So, as we can see, society SDGs actually are so relevant SDGs which directly connect to the people, otherwise all of these, if people are not connected, if it is not for the people then what is it for, whom is it for and what is the overall purpose, these all things will become reductant and useless. So, connecting our efforts generalizing it to the proper recipient and audience is an essential thing to understand this.

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Moving on to the next item SDGs and social ecological systems biosphere. So, biosphere SDG, 6, 13, 14 and 15, we will see. So, the first one SDG 6, clean water and sanitation. This goal aims to ensure availability and sustainable management of water and sanitation for all. It includes targets to increase the proportion of the population using safely managed drinking water and sanitation services to improve water quality and to protect and restore water related ecosystems.

So, as you can understand, the water is the one of the major actually sustainabler of life on this planet. Well, apart from sun and this earth itself and air, soil and other things like atmosphere oxygen, and all of those factors, if you will see, they are equally important, in that water also plays an critically important part, we are aware more than two-third of our body is made up of water almost 70-71 percent, which is huge percentage. And mostly, animals and the plant kingdom, if you see, they are all supported by water in some form or another, and it is so crucial.

So, this goal aims to ensure the availability and sustainable management of water and sanitation for all, it includes targets to increase the proportion of the population using safely managed drinking water and sanitation services, to improve water quality and to protect and restore water related ecosystems.

Next, we have about SDG 13, climate action. This goal aims to take urgent and significant action to combat climate change, and its impact, it includes targets to strengthen the ability of countries to deal with the impacts of climate change, to increase the use of renewable energy and to reduce greenhouse gas emissions.

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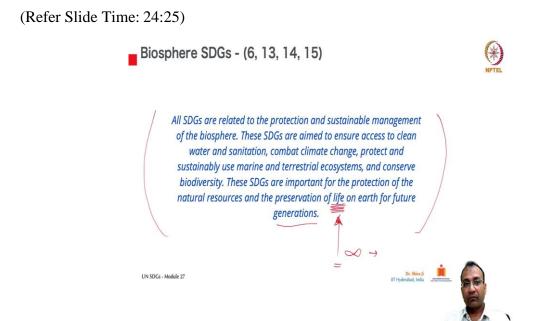
Further, we have SDG 14, life below water. This goal aims to conserve and sustainably use the oceans, seas and marine resources for system redevelopment, it includes targets to protect marine biodiversity, to reduce the pollution of oceans and seas and to increase the economy benefit to small island developing states and least developed countries from the sustainable use of marine resources.

So, water related actually sustenance is very important and the life which harbor some below this water level, what we usually see right from the shore, we see this water, surface and what kind of ecosystem is there under this water, we are mostly not aware of, or maybe not all of us are aware of that puts this SDG for consideration, because our waste, our energy absorption of resources and water as a resource, everything is getting its impact on the life below water. So, how this can be managed is the overall goal of this course.

Further, we have SDG 15, life on land. So, you can understand. This goal aims to protect, restore and promote the sustainable use of terrestrial ecosystems, you can note down here, forests, wetlands, mountains and other habitats. It includes targets to protect and restore biodiversity, to combat desertification, land degradation, and loss of habitats, and to increase the area of protected and conserved terrestrial habitats.

So, life on land also needs protection because most of species, which have gone extinct they belong to the land also along with marine, like an environment where we are not, I know equally aware of also, we may not be knowing the how the life is flourishing underwater in greater detail compared to the land. So, here we can still see a lot of species which are going

extinct because of the human activity. So, how these and many other considerations can be actually improved is the matter of concern over here.



So, overarching, all SDGs are related to the protection and sustainable management of the biosphere. These SDGs are aimed to ensure access to clean water and sanitation, combat climate change, protect and sustainably use marine and terrestrial ecosystems and conserve biodiversity. These SDGs are important for the protection of the natural resources and the preservation of life on earth for future generations.

So, how this life and all of those factors which are crucial for sustaining life on this planet can be maintained in the same proportion for the times to come for the whole future for our future generations is the major actually objective of like establishing SDGs and putting up so much of emphasis on its applications effective applications.

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Conclusion



In conclusion, the SDGs are a comprehensive set of global goals that aim to achieve sustainable development in all areas of society. The SDGs discussed in this presentation, including economy SDGs, society SDGs and biosphere SDGs, are all interconnected and mutually reinforcing. Achieving these goals will require significant investments, implementation planning, and capacity building, as well as collaboration and coordination among governments, the private sector, civil society, and international organizations. The SDGs are an ambitious but necessary agenda for addressing the pressing challenges of our time, and achieving them will require the commitment and efforts of all stakeholders.

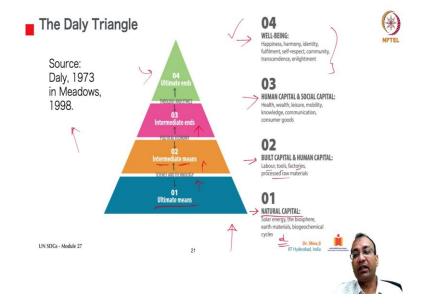
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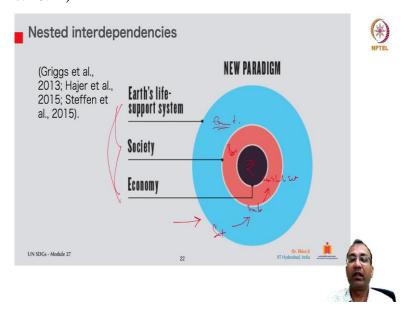


So, here we will see some more narratives. So, you see this triangle source from here which talks about low level one if you see at the bottom, natural capital, solar energy the biosphere, earth materials, biochemical cycles et cetera they compose this natural capital. And these actually provide the ultimate means and from here actually we go about science and technology and we make our own human capital or build capital you can see it over here, labor, tools, factories, infrastructure things, processed raw materials, et cetera et cetera, those are all actually products of human intervention.

So, intermediate means you can see over here from here we go to actually the level of political economy and in this political economy, the intermediate ends come such as Human Capital and Social Capital like health, wealth, leisure, mobility, knowledge, communication, consumer goods. And then finally reaching to the ultimate goals via theology and ethics and all of those spiritual quotients about final wellbeing.

So, not just physical ones, a mental well-being, happiness, harmony, identity, fulfillment, self-respect, community, transcendence, enlightenment as individual and as a collective, like a national level also, because it puts you at a very high platform very high even like a place like how one can actually, I want to benefit from these and reach to that states.

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Finally, towards the end of this module, we have these interdependencies you can see as shown by this graphic nested interdependencies. In the center, we have economy here flanked by society. And then lastly, we have earth's life support system this environment and all the surrounding everything.

So, this is this understanding that economy comes first but it is very small in his footprint and it is kind of a inclusiveness, so, this set if you see is the bigger set. And then subset and then subsect. So, this is this arrangement of like nestling, one inside like another. So, this also shows like this interrelationship how these qualities, how these domains, three different these domains and aspects actually come with respect to each other. So, with this, we have come to the end of this module. Thank you all for joining. See you in the next class.