United Nations Sustainable Development Goals (UN SDGs)
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Analyzing SDG connections, grouped into People, Ecological, and Spiritual categories
Part 4

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So, here we will see some observed relationships between SDGs as per United Nations. So, SDG 2 and SDG 1 and SDG 3, this is 1 set SDG 3 and SDG 8, another set SDG 6 and 12 another set, STG 6, 7 and 1, SDG 2, 3, 8, 13, is one set and here we have SDG 8 and 1 another set where we have this relationship, so 8 to 1.

Then in this one SDG 11 and 3 then SDG 12 and 6, then 13 and 15 together, then we have 14 and 1 together second and 8 together, 0 hunger and descent work. Then on another side we have SDG 15 and 1, SDG 2 SDG 8, SDG 13 and SDG 14 concerning trade-offs the most significant relationships were found between here. So, you can see in this set for the trade-offs SDG 2 and 6 zero hunger and clean water and sanitation, SDG 15 SDG 7 and 6 affordable and clean energy and clean water and sanitation, SDG 13 and 14 climate action and life below water.

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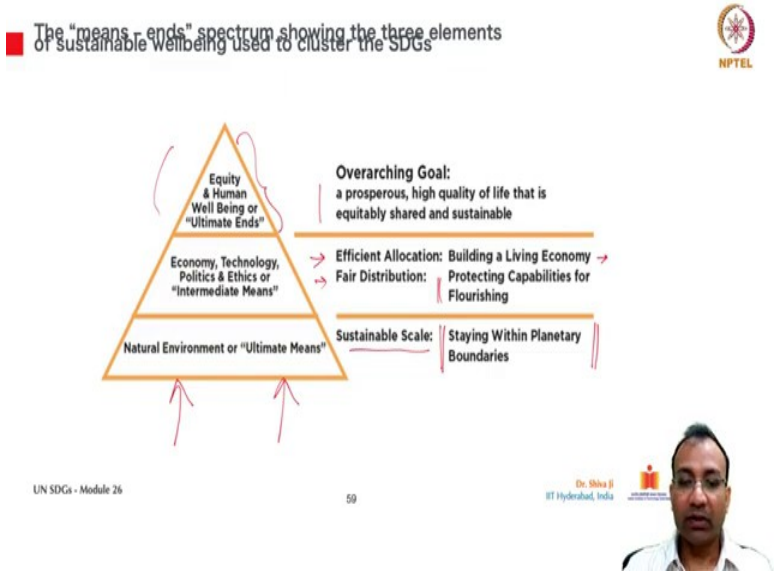

Here we will see the means ends spectrum showing the 3 elements of sustainable well-being used to cluster the SDGs. So, how it is clustered and this architecture that we will see here. So, at the bottom we have natural environments or ultimate means, and sustainable scale it talks about staying within planetary boundaries from this it goes to economy technology, politics, ethics or intermediate means.

So, here efficient allocation building a living economy, this is the overarching goal, fair distribution protecting capabilities for flourishing and at the top we have equity and human well-being or ultimate ends. Overarching goal here is a prosperous high quality of life that is equitably shared and sustainable. So, this is how it progresses in this triangle.

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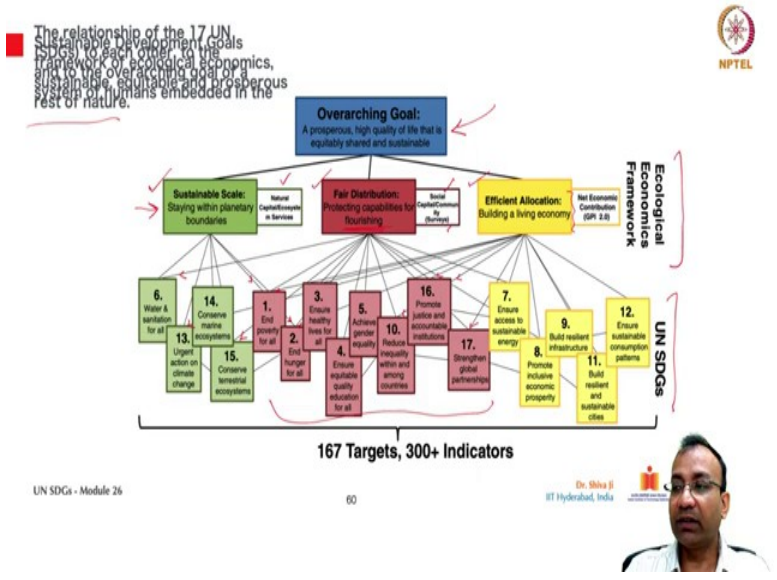

This we have studied earlier but I will explain it here again how all of these SDG goals and targets indicators are actually arranged in the under the overarching goal a prosperous high quality of life that is equitably shared and sustainable. So, in this one you can see 3 colour schemes, a green, these red scale and this yellow scale. So, these talks about the relationship of 17 UN SDGs to each other to the framework of ecological economics and to the overarching goal of a sustainable equitable and prosperous system of human embedded in the rest of nature.

So, at the level 1, we have ecological economy and economics framework at the top sustainable scale staying within the planetary boundaries, so that we do not exceed the kind of resources which are already available on this planet, so our need should not exceed that. So, natural capital ecosystems and all services and in the second one, fair distribution of resources and stuff.

So, protecting capabilities for flourishing, so the resource exhaustion should not exceed again the reserves which are available social capital community surveys and at the yellow scale we have efficient allocation building a living economy net economy contribution GPI and you can see these goals listed down over here. So, from the green one directly connected R6 13 14 and 15 and some more are connected here you can see this relation going to 1 and 2 also.

And similarly from this fair distribution in this red scale connections direct connections in this red scheme you can see over here, first, second, third, fourth, fifth, 10th, 16, and 17 and some more are connected here with the 6, it is connected and it is connected to 15 also on this side.

And on the yellow scale the direct connections are 2, 7, 8, 9, 11th and 12th and some more connections you can see here to 17 to 16 and to 10 and then it is connected to second also, it is connected to 13 also and this is it and the first also it is connected. So, overall this connection you can see off these as SDGs over in this framework which is ultimately serving to the overarching goal.

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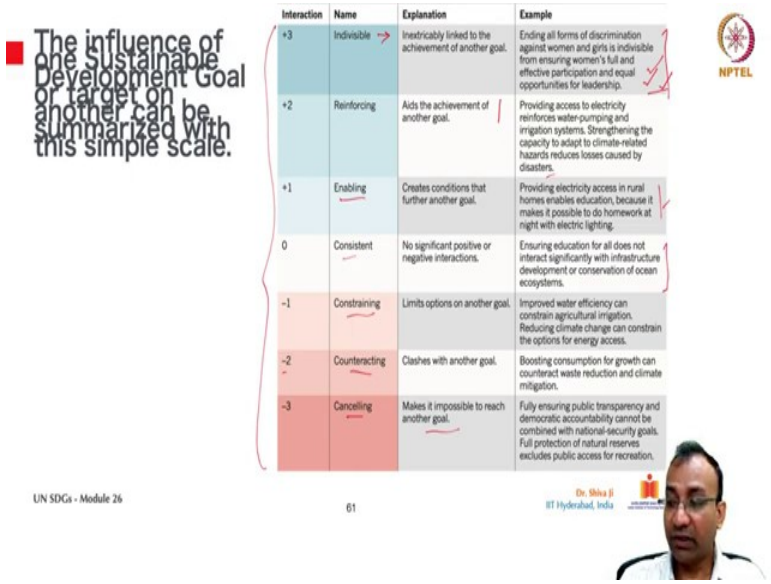

This we have seen earlier the influences of one sustainable development goal or target on another can be summarized with the simple scale, so that scale we have seen earlier minus 3 to minus 1 minus 2 minus 1 0 plus 1 plus 2 plus 3. So, explanation part let me explain it again this for you guys indivisible, inextricably linked to the achievement of another goal, so directly connected plus overarching a correlational growth is possible of a higher degree. So, if you boost one the other variable is also going to get in boost with for them very high degree.

So, ending all forms of discrimination against women and girls is indivisible from ensuring women's full and effective participation and equal opportunities for leadership. So, no denying if we improve one aspect another aspect is going to get benefited without any doubt.

The plus 2, reinforcing, it is the achievement of another goal providing access to electricity and reinforces water pumping and irrigation systems, strengthening the capacity to adapt to climate related hazards reduces losses caused by disasters, plus 1, enabling, creating conditions that for the another goal providing electricity access in rural homes enables education because it makes it possible to do homework at night with electric lighting, 0 consistent no significant positive or negative interactions ensuring education for all does not interact significantly with infrastructure development or conservation of ocean ecosystems.

So, not so directly or indirectly related minus 1 constraining limits options on another goal improved water efficiency can constrain agricultural irrigation reducing climate change can constrain the options for energy access, minus 2 counteracting clashes with another goal,

boosting consumption for growth can counteract waste reduction and climate mitigation, minus 3 cancelling makes it impossible to reach another goal.

So, fully ensuring public transparency and democratic accountability cannot be combined with natural national security goals, full protection of natural reserves excludes public access for recreation.

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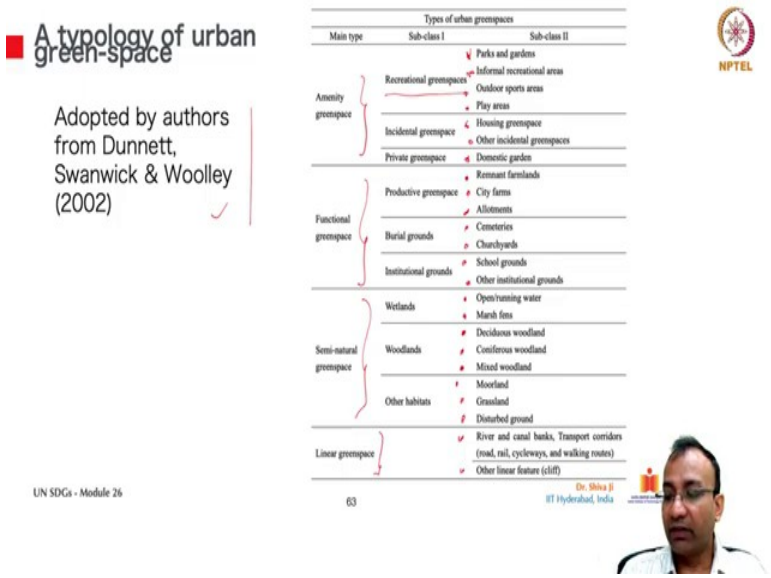

Here we will see an a different case example of green spaces, so green spaces in urban landscape how this whole line architecture work. So, this is the urban areas in urban areas there are buildings and there are external environments outdoor spaces in that space we have grey spaces and we have green spaces. So, in this green spaces we have linear spaces semi-natural amenity functional. So, these are the types of green spaces available in the urban areas urban species.

So, here we will see what does it mean amenity green space, functional green space, semi-natural and linear green space from the source. So, subject class 1 and class 2 it is divided over here. So, recreational green spaces in the amenity green spaces in this it can be in the form of parks, gardens, informal recreational areas, outdoor sports areas, play areas for kids etc.

Then incidental green spaces, housing green spaces, other incidental green spaces, private green spaces may be domestic gardens personal spaces. In functional green space we have productive green space, Remnant farmlands, city farms allotments, so those are productive green spaces where some kind of production of agricultural producer and something else is

happening, burial grounds, Cemeteries, Church the dead spaces not significant use, institutional grounds, well school grounds other institutional grounds.

And the third type semi-natural green spaces we have wetlands, open or running water places, mass fence and marshy area swamps etc. Woodlands residuous woodland, coniferous Woodlands, mixed woodlands, raw forest what you can call other habitats moon lands, grasslands, disturbed ground.

Finally in the linear green space we have rivers, canal banks, lakes etc transport corridors rail, roads, cycle ways, walking routes and lastly other linear features cliff and other such natural features. So, this is a constituents of typology of urban green spaces.

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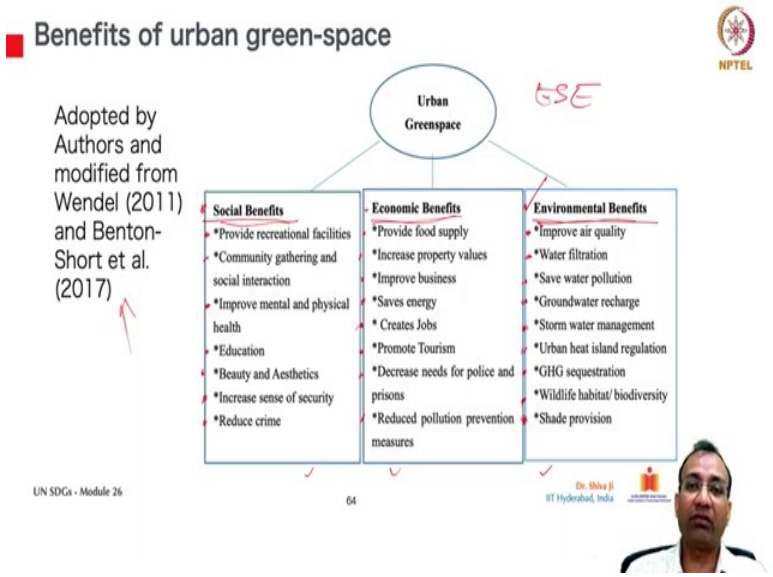

So, what are the benefits of urban green spaces? This is the source, so on the 3 aspects of ESE this evaluation we will do, so on environmental benefits let us see that first improve it improves air quality, it helps in water filtration, saves water pollution, ground water recharge, it helps in that because it retains water in the roots of all of those vegetation's and slowly it helps recharging it.

Storm water management, so it helps in reducing soil erosion etc and manages water efficiently, urban heat island regulation it reduces temperature, ambient temperature GHG sequestration it helps in in that also, wildlife habitat biodiversity and shared provision green regional shaded areas reducing the heat footprint.

On the social benefits we have a provide recreation facilities for functional uses of the society people, community gatherings and social interactions improve mental and physical well-

being in the recent years you may be aware of access to open areas, green areas, open spaces is has become a mandatory thing in the building bylaws or in the neighbourhood social planning's, where people should have access to the outdoors. So, it helps in mental well-being also, it helps in education beauty and aesthetics, increases sense of security, it reduces crime.

On the economic a benefit factors, it helps in providing food supply, increases property value, if there are more green and interesting beautiful spaces it improves businesses, saves energy, creates jobs, promotes tourism, decreases needs for police and prisons, reduce pollution prevention measures. So, multiple benefits of all sorts you can see, so with this you can establish a correlation how these ESE features are related to this urban green spaces and how it can be planned.

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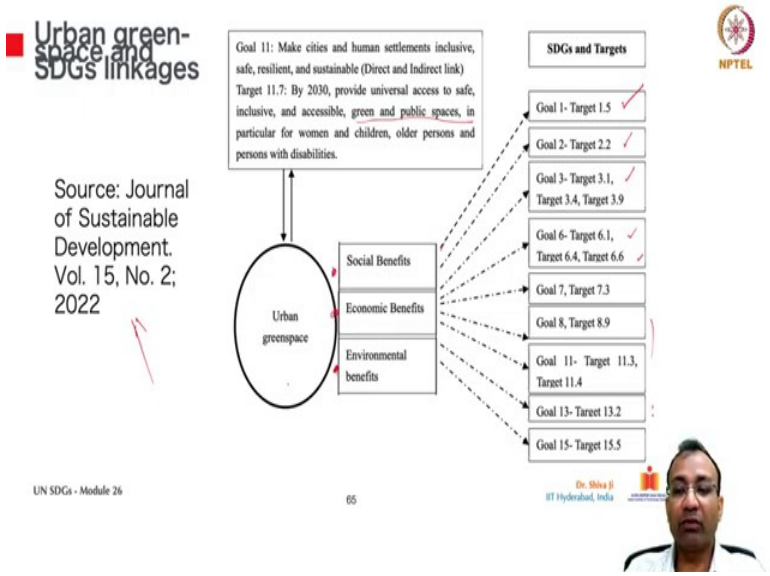

And finally we have this urban green space and SDGs linkages, so in this one we have this urban unit green space here and the 3 aspects benefits are listed down over here and from here which are the goals and targets it is directly touching that is mentioned over here. So, under goal 1 it is 1.5 target and under goal 2, 2.2, then here 3.1, 3.4, 3.9, 6.1, 6.4, 6.4 and so on.

So, you can see goal 11 make cities and human settlements inclusive safe resilient and sustainable direct and indirect link, target 11.7 by 2030 provide universal access to safe inclusive and accessible green and public spaces in particular for women and children older persons and persons with disabilities. So, you can see gradually it is going to be mandatory in

the years to come, because the benefits of this are now well known and well proven, well established. So, this is the reason we are discussing it over here.

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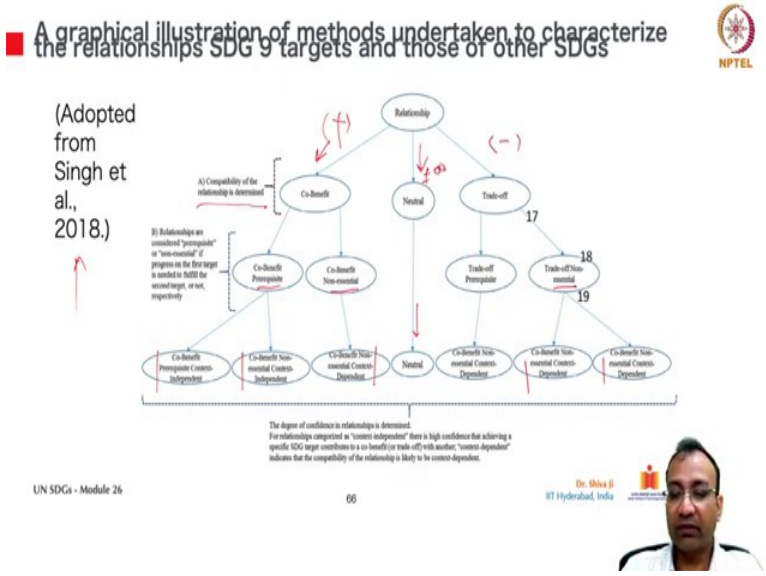

A graphical illustration of methods undertaken to characterize the relationships SDG 9 targets and those of other SDGs. So, in this one you can see this relationships of 3 types co-beneficial Synergies, neutral plus minus 0, 0, 0 all of this thing and this is in the minus trade-offs. So, on the plus side in the core benefit side you can see compatibility of relationship is determined and from here co-benefit prerequisite, co-benefit non-essential.

So, here the researcher has kind of given this as a co-benefit prerequisite context independent co-benefit non-existential context independent. And then from co-benefit non-existential co-benefit non-existential context dependent that is a bifurcation and in neutral it is neutral only and then in trade-off there are 2 trade-off prerequiset and trade-offs essentials, non-essentials.

So, co-benefit non-essential context dependent co-benefit non-essential context dependent co-benefit non-essential context dependent. So, this actually establishes the degree of confidence in relationship through this architecture and it helps in establishing those relationships effectively.

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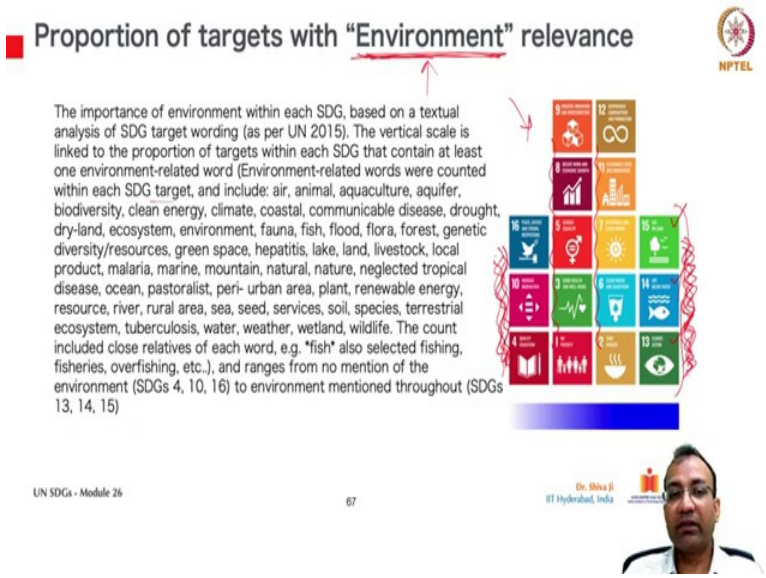

Lastly we are seeing at this table, so in this arrangement you see on the right side in this graphic, these goals are stacked in a unique fashion. So, first we see 16, 10th and fourth and then 9, 8, fifth, third and first, then twelfth, eleventh, seventh, sixth, second and then 15, 14, 13.

So, the proportion of targets with environmental relevance which are mostly connected to environment relevance, so this is their on this side, so all of these three are the highest environment related SDGs and then a little lesser than that we have this set of five, then lesser than that we have another five and the lowest we have these three.

So, let me read this for you the importance of environment within each SDG based on a textual analysis of SDG target wording as per event 2015. The vertical scale is linked to the

proportion of targets within each SDG that contain at least 1 environment related word, environment related words were counted within each SDG target.

And include air, animal, aquaculture, aquifer, biodiversity, clean energy, climate, Coastal, communicable disease, drought, dry land, ecosystem, environment, fauna, fish, flood, flora, forest, genetic diversity, resources, green space, hepatitis, lake, land, livestock, local product, malaria, marine, mountain, natural, nature, neglected tropical disease, ocean, pastoralist, peri-urban area, plant renewable energy, resource, river, rural area, sea, seed, services, soil, species, terrestrial ecosystem, tuberculosis, water, weather wetland wildlife.

The count included close relatives of each word example fish also selected fishing, Fisheries overfishing etc and ranges from no mention of the environment SDG 4, 10, 16, in these there is no mention of environment related factors to environment mentioned throughout SDG 13,14 and 15.

So, as you have understood these the last the three sets they are in a completely dependent on environmental related concerns and with the leftmost these 3 sets at least or very little connection with the environmental related relevances, so this is this another interrelationship and architecture established for your understanding. So, with this we have come to the end of this module. Thank you all for joining see you in the next one.