

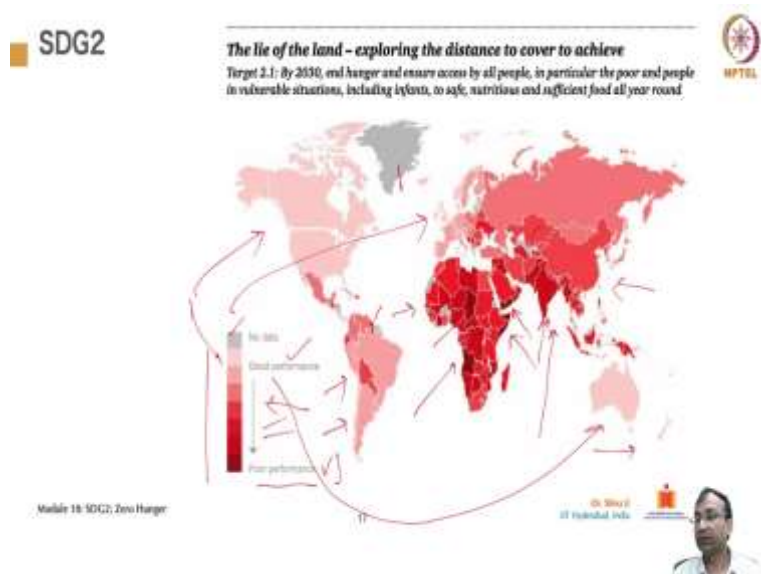
**United Nations Sustainable Development Goals (UN SDGs)**  
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**SDG 2: Zero Hunger**

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So, overall objective with SDG 2 is to end hunger in all its forms everywhere across the planet, achieve food security. So, that there is guaranteed supply of food to each and every individual and improve nutrition and promote sustainable agriculture. So, these are the key things associated with the SDG 2.

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Let us see some performances exploring the distance to cover to achieve target 2.1 by 2030 end hunger and ensure access by all people in particular the poor and people in vulnerable

situations, including infants to safe nutritious and sufficient food for all year around. So, you can see this grey represents no data here there is no data, in this country no data, but rest the most light pink good performance, and red deep red poor performance. So, you can see, some countries Somalia and others, from African continent, they are under most poor performing countries and majority of countries from African continent, they are having reds from this range.

And including South Asian countries, Pakistan, India, Bangladesh, Myanmar are under red category. And then some lighter, pinks, we see here in this range, China, and then in the southern American continent also, there are a few, little red ones. And then majority of the places where there is slight pink is the North America, Europe and Australia and New Zealand and, well, Chile over here in South America. So, that is the distribution.

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So, how this can be done? It is a small, case study, from a company Woolworths, I have kept it as a, just one example, like, in what ways, with the right intention, this can be done. So, as a case study, you take it as in an academic, I example to this study. So, here, this in this belongs to food retailer sector from South Africa and aligns to SDG 2. It created farming for the future to address the agriculture challenges that face South Africa.

Well, global challenges we know world population increasing and in turn, so in demand for food, increasing estimated 1/3 of all food produced is wasted each year, 1/3 unimaginable and climate change had severe negative impacts on the agricultural sector. This pairing means adaptation and a shift towards sustainable practices within farming is needed to take a step

towards eliminating hunger in an ever more challenging environment. Business response in 2009 Woolworths realized that the farming methods being used in the supply chain in South Africa, were not sustainable.

This triggered the company to create a method of farming that produced high quality food while preserving natural resources and providing a livelihood for agricultural community. Farming for the future is a holistic farming approach that starts with building and maintaining the soil. Safe soil movement you may be aware is also going on in India, by Satgurus organization. Benefits, healthy soil full of minerals and nutrients is essential because it is better able to retain water and so yields healthier crops. Higher water retention reduces the need for irrigation and soil erosion is reduced.

Lowering the overall cost performance. Healthy soil requires fewer chemicals, which combined with the use of fewer pesticides contributes to maintaining and encouraging biodiversity on farms and is safe for farmers health. This process makes the start of the farming supply chain more sustainable. Today 98 percent of Woolworths primary local suppliers have adopted farming for future approach.

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So, you see, how even companies and corporates also can, like, tweak your regular processing method and contribute. So, maybe you can see over here in this illustration, this SDG 2 where it is directly related, that is what is illustrated in this one. Of course, the first one is SDG first and then this gender equality. agriculture infrastructure and all of those

renewable energies the health and well-being or climate change, life on water, life on land, both are covered over here is directly related.

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**SDG 2**

2.1 Ensure access to safe, nutritious, and sufficient food for all	2.2 End all forms of malnutrition	2.3 Double smallholder food production and income
2.4 Deliver sustainable, resilient food systems	<b>2 ZERO HUNGER</b> 🍲	2.5 Maintain agrobiodiversity
2.a Increase investment in rural infrastructure and services	2.b Correct and prevent world agricultural trade distortions	2.c Ensure proper functioning of food commodity markets

Handwritten notes on the right: "Good fish part", "Water with salt", "water", and a drawing of a fly.

MPTEL logo in the top right corner.

**SDG 2**

**Case Study**

**Pharmaceutical company 'for the Planet' to address the agricultural challenges that face South Africa**

**State Challenge:** The world needs a growing and secure population for food, all of whom need nutritious diets. However, the world is not producing enough food to meet the demand. The world is also not producing enough nutritious food to meet the demand. The world is also not producing enough nutritious food to meet the demand.

**Business Response:** In 2017, the pharmaceutical company 'for the Planet' launched a program to support smallholder farmers in South Africa. The program provides farmers with access to high-quality seeds, fertilizers, and pesticides. The program also provides farmers with access to training and technical assistance. The program has helped farmers increase their yields and improve their livelihoods.

Handwritten notes on the left: "→", "→", "→", "→".

MPTEL logo in the top right corner.

So, what are those points given under this 2.1 says? Ensure access to safe nutritious and sufficient food for all and by now, we are aware why this is important. 2.2 end all forms of malnutrition, because malnutrition can happen in multiple ways we know for the human body, there are carbohydrates which are needed then there are fats which are needed proteins, vitamins, other minerals and bodily, salts. All of these if you see, they have their own roles, it is not that one is better or another one is inferior, it is a kind of a proper combination of all of this combined with many others also, water and other things.

Play a vital role for the metabolic balance of the body and maintaining proper, energy balance, proper nutritional supplement to different organs for example, we know vitamin A is essential for eyes, and similarly, some such things play crucial role for functioning of our different body parts or maybe as a whole together. So, it is very essential to have one of these all of these supplements in their proper ratio to every human being. So, that is the bottom line if you consult medical practitioner or maybe a nutritionist you can find out more details onto this.

Double smallholder food production and income 2.4 talks about deliver, sustainable, resilient food systems maintain agrobiodiversity. So, if you see these are the points where we are talking about the system, we are talking about from the individual you see, these 2 are focused towards individuals and households you and me. Now, it is going towards the system, how do we go about a proper production and income system, how do we go about resilient food system and maintaining agrobiodiversity also? Because it was said previously over here how nutritional value of soil also is essential, proper moisture is essential and proper level of nutrients in the soil are also essential for growing food.

So, that agrobiodiversity because, insects and all of those things, they are also essential in some form. So, not every pest is kind of pest, but, like, they also help in some other ways, for example, honeybees, if you see. So, honeybees are so crucial, there are several studies which suggest, like, they are so crucial for the survival of human beings and any other species on the planet. Because if they go extinct for some reason, this entire planet's agricultural system is going to collapse.

So, such a teeny tiny insect, such a teeny tiny member of our ecology, is a very important member of the ecology and so much is dependent on it. So, that is the kind of agrobiodiversity we are talking about involving all of these stakeholders. Increase investment in rural infrastructure and services, because usually rural infrastructure and facilities are generally typically neglected or not so much on the priority list.

But majority of the agriculture if you see happens in those pockets in those lands, it comes from the rural areas, unorganized sectors, from the unorganized sectors, agricultural sectors from the rural area. So, this strengthening is needed there also because a majority of percentage of food supplies comes from that region, we cannot put it to the, to the, risk and vulnerabilities. Correct and prevent world agricultural trade distortions, this is a little political

and administrative kind of thing over here. Like, some countries, enjoy a very commanding position over the others.

But for as long as, this SDG is concerned, it is expected, for the sake of humanity, one must not actually, go behind politicizing food supplies or food securities to the last member of our humanity. So, such thing. So, such malpractices trade distortions also should be avoided, that is what it intends, because somewhere these politics also plays even if there is supply of food at certain place, but because of so and so restrictions, it is not allowed to reach to those plates and at some other faraway place.

So, that is a kind of a political bottleneck which is preventing the food security. Ensure proper functioning of food commodity in markets. So, because there is a proper channel how the food actually starts growing in the field by farmers and then reaches to the stocks and warehouses from there to the marketing place, trading, traders et cetera. Then it reaches to the you and me as a consumer. So, this, whole chain, this whole hierarchy these elements of this chain, this sequence must also function, properly in order to not hinder in the overall progression.

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TARGET	KEY INDICATORS	SCORE	IMPACT ON SDG1
2.1	End hunger and achieve food security and improved nutrition and promote sustainable agriculture	+3	Directly related to SDG1 target 1.1 (End poverty in all its forms everywhere)
2.2	End malnutrition and promote all forms of adequate nutrition	+2	Directly related to SDG1 target 1.2 (Reduce the number of people living in poverty)
2.3	Double agricultural productivity and incomes of small-scale food producers	+2	Directly related to SDG1 target 1.2 (Reduce the number of people living in poverty)
2.4	Ensure food and nutrition security and access to affordable, nutritious food, strengthening local food systems and open market-based food supply chains	-1	Indirectly related to SDG1 target 1.2 (Reduce the number of people living in poverty)
2.5	Enhance agricultural and fishery resilience and adaptive capacity to climate change and other disasters	-2	Indirectly related to SDG1 target 1.2 (Reduce the number of people living in poverty)
2.6	Reduce global food waste and losses in the supply chain, including post-harvest losses	0	Indirectly related to SDG1 target 1.2 (Reduce the number of people living in poverty)
2.6	Reduce global food waste and losses in the supply chain, including post-harvest losses	+1	Indirectly related to SDG1 target 1.2 (Reduce the number of people living in poverty)

This is one slide, where discussion about relation between SDG 2 to 1 is discussed. So, how these targets, they complement to each other 2.1 and 2.2, directly related to 1.1 and 1.2. Similarly, 2.2 overall, the whole of the SDG1, 2.3 to 1.4, 2.3 to 1.5, 2.4 to 1.5, 2.b to 1.b. Now, see the key directions, what are happening over here, food and nutrition security are indivisible from eradication and reduction of poverty. So, a score, if you see this has got plus

3, increasing small scale food producer productivity and income reinforce the fight against poverty.

This has got plus 2, equal access to land and other productive resources is directly aligned with securing equal rights economic resources, plus 2. So, you see, these are directly related, food security, and poverty alleviation. This comes kind of lot of like, there is kind of intertwined kind of phenomenon where, both of these actually supplement or complement each other. That is why there is not a very strong relationship between interaction between these.

Increasing agriculture productivity without sustainability 2.4 will increase vulnerability to climate related, related extreme events and other shots, minus 1, minus 2. Primarily, in developing countries and for poor segments of society. Thus 2.3, 2.1 need to be achieved in trend.

Enhancing adaptive capacity in agriculture may enhance the resilience of the poor, as long as they are fully included in our adaptation strategies 0 to plus 1. The removal of trade restrictions could constrain the creation of pro poor policy framework by limiting the range of policy actions at least in the short term. So, how these policies and frameworks also carry potential to impact, and how they are performing is rated over here.

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TARGETS	KEY INDICATORS	SCORE	IMPACTS
11.1 - 11.6	Accession to modern transport services for all cities and urban areas	+1	Urban living space is not only better, but also safer, more resilient, and more inclusive
11.2 - 11.4	Urban and infrastructure development that is inclusive, sustainable, and resilient	+2	Urban living space is not only better, but also safer, more resilient, and more inclusive
11.5 - 11.7	Strengthening urban resilience and disaster risk reduction and emergency preparedness and response	+1	Urban living space is not only better, but also safer, more resilient, and more inclusive
11.8 - 11.9	Protecting and restoring ecosystems and services in urban areas	+2	Urban living space is not only better, but also safer, more resilient, and more inclusive
12 - 14.1	Ensuring sustainable consumption and production patterns	-1	Urban living space is not only better, but also safer, more resilient, and more inclusive
14.2 - 14.4	Conserving and sustainably using the oceans, seas and coastal resources	-2	Urban living space is not only better, but also safer, more resilient, and more inclusive
15 - 15.1	Protecting and restoring terrestrial and aquatic ecosystems	-1	Urban living space is not only better, but also safer, more resilient, and more inclusive
15.2 - 15.4	Sustainable management and use of forests, freshwater ecosystems, and mountains, wetlands and coastal marine ecosystems	-2	Urban living space is not only better, but also safer, more resilient, and more inclusive

Again, direct from 2 to 3, there is again, further direct relationship, because food supplements or at least the physical well-being, and to the emotional and mental well-being also. If you are not fed, definitely, you are going to fall sick physically as well as, you will be in the mental,

agony, mental, pressure. So, all sorts of well beings, go from this food supplies also. Relations, you can see 2.1 to 2.2, connected to 3.1, 3.2, and so on. Key directions, let us see, ensuring food and nutrition security directly creates conditions that lead to the reduction of maternal mortality and preventable deaths of the newborns.

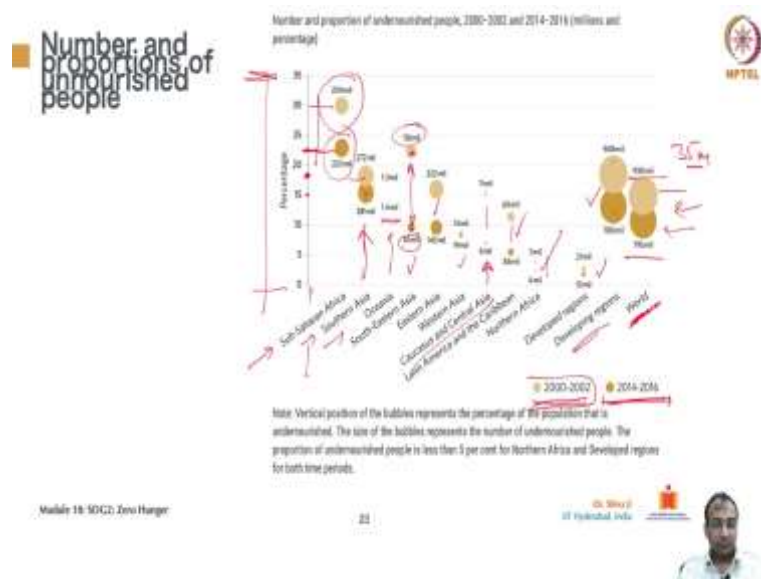
That is what we were discussing if there is a proper food supply and nutritional value the mortality rate of newly born infants and expecting or lactated mothers is definitely going to improve. Food and nutrition security and stable agricultural employment help reduce communicable diseases owing to better nutrition and health status. And because better rural income, help prevent the pursuit of unsafe practices leading to communicable diseases will be directly related.

Increasing agricultural productivity via conventional agriculture can increase soil and water pollution constraining the reduction of deaths and illnesses caused by hazardous chemicals. That is why this has got minus, because those hazardous chemicals, they may help you grow more food, but they have other impacts also, such chemicals can adversely affect human health, particularly the newborns but can also affect perinatal death and cancer outcomes in overall production. So, you may be aware of some of these compounds, chemical they are carcinogens and long-term exposure to such chemicals, maybe, like, cancerous. It may lead to cancer situation or carcinogenic conditions.

Doubling agriculture productivity by mainly focusing on low nutrient and energy rich foods, calories will constrain the fight against non-communicable diseases the interaction is also counterbalanced by targets on nutrition minus 1. Extensification of agriculture may increase deforestation often accompanied by irrigation minus 2.



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So, you can see this then we have some slides to discuss what is going on across different places around the world, number and proportions of undernourished people. So, that is the slide where we have percentage of it undernourished people from 0 to up to 35, and then we have a different region of the world, we have Sub Saharan Africa being the first one here then Southern Asia, Oceania, southeastern Asia, Eastern Asia, Western Asia, Caucasians and Latin America, Northern Africa, developed regions, developing regions, overall world.

And these are the two results you can see this is the data from 2000 to 2002 and this is the recent data 2014 to 16. So, you can see how majorly this percentage has come down. So, that I think is visible in most of the places, this lighter from the previous years and these darker from the later years, recent years. So, that percentage has definitely come down at the world also if I see in a nutshell from 930 million to 795 million. So, there is improvement of at least 35 million over here what we can see.

And similarly developing regions also there is some improvement and now if you go region wise Sub Saharan 204 to 220, this has increased, but the percentage is in a decrease but the overall volume has increased. So, we see 204 million to 20 million over here, but percentage wise it was 30. Now, it is close to around 22, 23 something that 23 perhaps. So, percentage wise just decreased but overall volume wise if you see this has increased.

So, there is a catch. Similarly in southern Asia percentage wise further it has decreased from here I see around 18 percent. So, close to 15 percent it has come down but overall number wise volume wise 272 million to 281 million. So, that means the population has rising even

further and percentage wise there is improvement but overall volume wise it is expanding so that is a tricky situation. Oceania very small 1.3 to 1.4 but this has also increased. Here this has decreased significantly percentage wise also and volume wise also.

So, volume 118 to 61 million percentage wise I think close to 22 to close to like, less than 10 it looks like. So, that is a significant improvement. Here also this there is an improvement going 222 to 145. Here is there is no improvement it has degraded 14 to 19 percentage only slightly improved here 11 to 6 million. This is Caucasians and Central Asia all of those town countries Uzbekistan et cetera. 11 million to 6 million, so percentage wise also has improved and volume wise also it is almost halved. That is nice.

Latin Caribbean 60 to 34. That is an improvement, 7 to 4 there is improvements. Here, also developed region also improvement, developing regions also overall improvement, world has also overall improvement. But there are some catches.

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The slide displays the following content:

- SDG2** logo and subtitle: **Zero Hunger**
- Text Box 1:** "Let's target, collect, track, analyze and monitor the number and proportion of undernourished people." It mentions that in 2018, 690 million people were undernourished, a decrease from 702 million in 2015. It also notes that the number of undernourished people in 2018 was 11.4% of the world population, down from 11.6% in 2015.
- Text Box 2:** "SDG2 is a global challenge: Eradicate hunger and food insecurity." It states that the world is on track to meet the target of 2.3% of the world population being undernourished by 2030, but that progress is uneven across regions. It also notes that the number of undernourished people in 2018 was 11.4% of the world population, down from 11.6% in 2015.
- Text Box 3:** "Multi-stakeholder partnerships to strengthen food systems." It mentions that the world is on track to meet the target of 2.3% of the world population being undernourished by 2030, but that progress is uneven across regions. It also notes that the number of undernourished people in 2018 was 11.4% of the world population, down from 11.6% in 2015.
- Graph:** A line graph showing the number of undernourished people in the world from 2005 to 2020. The Y-axis represents the number of undernourished people in millions, ranging from 0 to 700. The X-axis represents the year. The graph shows a general downward trend until 2018, followed by a sharp increase in 2019 and 2020. Handwritten red arrows and the word "COVID-19" are drawn on the graph to highlight this sharp increase.
- Small Photo:** A small photo of a person in the bottom right corner.

Some more details on this will be if you look at this graph, it talks about number of proportion, number and proportion of undernourished people in the world 2005 to 20, millions and percentage. So, if you see gradually till this year 2018 and 19 there is a slight increase till 18 perhaps if I see, this has been declining.

But now from here it has gone slightly up and from here it has gone, I think a good amount, a good percentage has gone up, it looks like, around 35, 40, 45 degrees sharp angle over here. So, that is a steep increase. So, that is not very encouraging. But we know this year is marked by will always be recorded in history for COVID 19 pandemic, which has brought in

additional havoc on the society. I would recommend you guys refer, these documents, these are freely available on UN's website.

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Another table proportion of children under age 5 who are affected by stunting 2000 and 2020. So, these are the year indication lighter and darker. So, Oceania this has increased, Sub Saharan Africa this has decreased 44 to 32.3. Central Southern Asia also this has decreased, Northern Africa, Western Asia decreased, Eastern Southern Asia decreased, Latin decreased, slight decrease here also Europe and Northern America, here there is increase Australia, New Zealand 1.9 to 2.3. Overall world of course there is an improvement but there are 2, 3 places where it has gone worse.

Next one, percentage of overweight and wasting among children under age 5. So, you can see wasting as on this side and overweight on the side. So, it is a kind of contradictory paradoxical situation, some kids are falling short of that and some are having an excessive. So, they are getting overweight and majority of that overweight situation is happening in this Australia and New Zealand. Almost no stunting I see over here, no wasting I see over here almost 0, where it is not written but it looks almost 0 but majorly on this side the world's highest 16.9.

And then we have second highest in Northern Africa and Western Asia. Then we have 8.6 here, Europe and Northern America then Oceania then we have eastern and southern Eastern Asia then Latin America, Caribbeans and then Sub-Saharan Africa and then largely central and southern Asia. The world's also you can see overweighted 5.7 and wasting 6.7.

Prevalence of anemia in women is 15 to 49 that is the Asia productivity year 2000 to 2019 percentage. So, you can see I see improvement here improvement, improvement, improvement, improvement, improvement, no not improvement, not improvement, overall world slight improvement. So, 2 places Europe and Northern America this has increased, Australia and New Zealand also this has increased prevalence of anemia in women.

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So, in this challenge, various organizations NGOs research units and cost rates and governments and even individuals, there are many like, such, agencies or, agents who are working, behind, these goal. So, if you see what do we need 100 percent access to adequate food all year around that the food security we are talking about, maybe you can Google you can search for the food security laws in India, what government of India or state governments actually have mechanism to address this, zero loss or waste food that must be the priority.

Because, a kg of food for production takes a huge amount of resources, and time and energy and everything. And if it is just wasted, that the sheer wasted of all of those investments whereas, there are people who are falling short of it who are not able to meet their demands. So, there is a most general paradoxical and an absurd things possible food wastage, but we must prevent it at any cost. Zero stunted children in less than 2 years, all food systems are sustainable I think a sustainable and approaches for food growing must adopt be adopted. 100 percent increase in smallholder productivity and income.

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SDG2



Module 18: SDG2: Zero Hunger

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SDG2

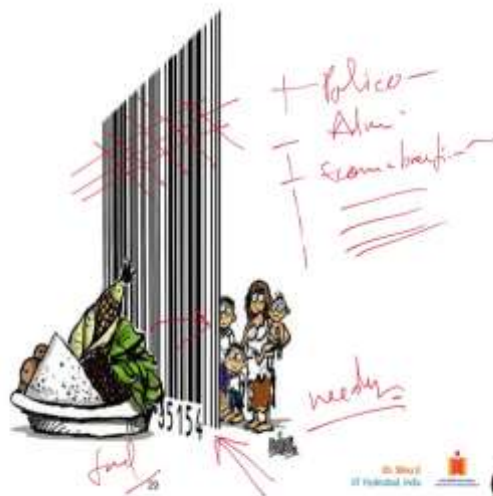


Module 18: SDG2: Zero Hunger

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SDG2



Module 18: SDG2: Zero Hunger

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To just give you some glimpse when we are talking about scarcity of food, what does it look like? Well, there are even more, disturbing images which I found it little not so, good to put in here maybe you can search separately. But actually these pictures, why it is essential for all of us to have a look, because many of us are not realizing the gravity of the situation unless and unless, unless and until you see it witness it yourself you may not feel that pain.

So, it is essential one must actually know what food scarcity is, you see these are people, women, kids, lying in the queue and fighting for these donations, these arms. Definitely a, efforts, goals and all other things given in the SDG 2. There is a way, to address this. One must, strive for this.

And with this, I have come to the end of today's lecture, I found this illustration very apt, how you can summarize it as politico, administrative or economically benefit, motivation wise, all of those things, which are, standing in the middle of food and the needy. So, we must abolish this to make it easily accessible available to the last standing person. With this I have come to the end of this lecture. Thank you all.