Conservation Geography
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Module - 11
Economic Geography and Conservation
Lecture – 32
Trade

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Namaste! We carry forward our discussion on economic geography and conservation, and in this lecture we shall have a look at trade.

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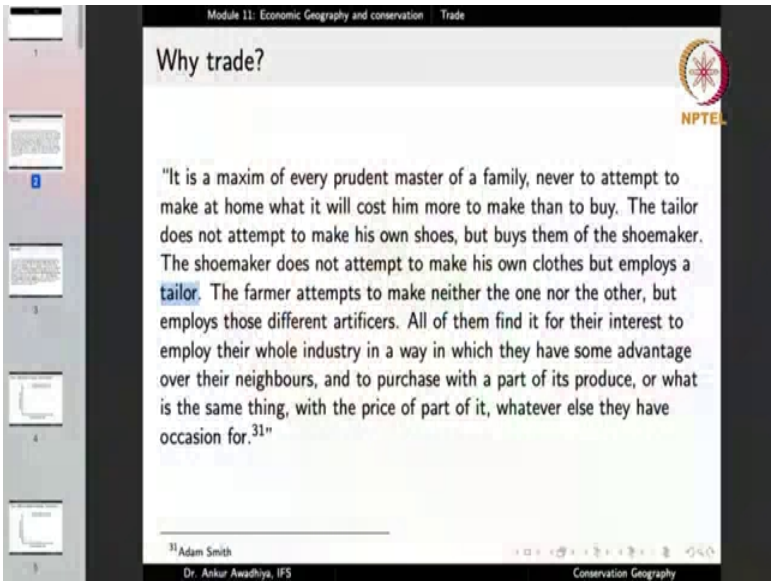

So, why does trade happen? Trade is essentially an exchange of goods for say another good or for say money. Now, why is the need for trade? Cannot we do everything by ourselves? Now, why trade happens has been explained by Adam Smith in this paragraph. He says that it is a maxim of every prudent master of a family, never to attempt to make at home what it will cost him more to make than to buy.

That is, for any prudent master of a family, he tries not to make things at home that are more expensive to bake than to buy. In other words, people try to reduce their expenses. And if they can buy something for a cheaper price than the price that it would have taken them to make the thing by themselves, then they would prefer to buy it and not make it. It is a maxim of every prudent master of a family, never to attempt to make at home what it will cost him more to make than to buy.

The tailor does not attempt to make his own shoes, but buys them off the shoemaker. So, a tailor does not try to make his own shoes. Why, because making of shoes by the tailor will be more expensive than buying those shoes from the shoemaker. Now, why should that be so? It is mostly so because a large number of things require certain equipment for them to be manufactured. They require a certain amount of training, so that they are manufactured properly.

And so a tailor who knows how to make clothes, who has the machinery to make clothes, if he or she wanted to make shoes, he or she will have to learn the art of shoemaking and purchases of

equipment to make the shoes. And the amount of expenses that that would involve would be very high as compared to just buying them from a shoe maker.

For the shoe maker, it is cheaper to produce and cheaper to sell, because the shoemaker is in the business of making shoes. He or she knows very well how to make the shoes and has the equipment to make the shoes. So, once you are in the art of doing something, once you have the techniques, you have the equipment, then you can reduce the costs. And any person who is coming from outside would have to gain this technique and would have to buy the equipment to enter into the profession.

And so the tailor does not make his own shoes, but buys them from the shoemaker because making the shoes by himself would be very expensive, whereas the shoemaker is able to provide those shoes at a much cheaper cost. Similarly, the shoemaker does not attempt to make his own clothes, but employs a tailor. The farmer attempts to make neither the one nor the other, but employs those different artificers. All of them find it for their interest to employ their whole industry in a way in which they have some advantage over their neighbors. And to purchase with a part of its produce, or what is the same thing with the price of part of it, whatever else they have occasion for.

That is, everybody in the society tries to make those things that they have an expertise in and that they have the equipment for. And if everybody does what he or she knows best, then they are able to produce the things at a much cheaper rate. And once they have the goods in a larger quantity, more than what they need for themselves, they can then trade it with other people in the society who again would be making the goods that they are more proficient in.

So, everybody makes those goods that they know how to make and have equipment for making in a quantity that is larger than their own requirements and the excess is given to others and they take whatever they require in return that is trade.

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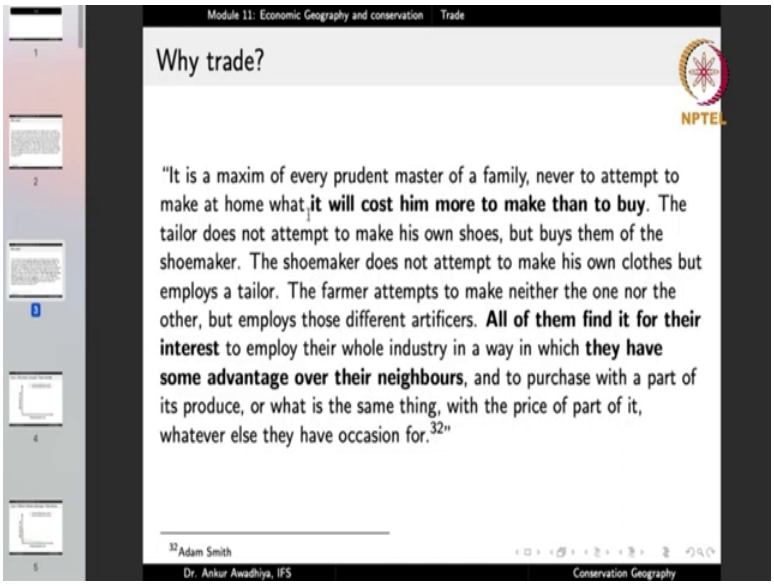

So, trade has these few underlines. Nobody tries to make things that cost them more than, more to make than to buy. It is in their own interest. Nobody is coming and telling people that they should go for a trade, but everybody finds trade in their own self interest and because of that they are engaging themselves in trade. And they do things that they have some advantage over their neighbors. That is people try to do those things where they have an advantage over others. Meaning that, they can produce those things at a cheaper cost than it would take others to make them.

So, the bottom line is that everybody tries to understand what they are good at, because if they are good at something, if they have the equipment and training to do that, then they can produce things at a much cheaper cost. And everybody tries to produce things in a quantity that is much larger than what they themselves need so that they have an excess. And this excess can be traded for any goods that they require. So, that is the basis of trading.

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And to understand trading, we can look at a few scenarios. The first case is that you have two people in the society. So, we are taking a theoretical example in which there is a society which has only two people. Let us say, both of them are farmers, one produces milk and the other produces potatoes.

Now, if the first farmer can only produce milk and cannot produce potatoes at all, and similarly, the second farmer can only produce potatoes but cannot produce milk at all, in such a scenario, they will have no other option but to trade. That is if you have a situation where every person knows how to make only one good, then if any person requires the goods that are being made by anybody else, then they would have to engage in a trade, because there is no other option. They do not know how to make the other goods.

So, for example, for most of us, if we want to have things that are being made in an industrial scale, say we want to purchase or we want to have a ballpoint pen, now it is very difficult for most of us to make a ballpoint pen by ourselves, because we do not have the technique, we do not have the equipment, we do not have the raw materials. We do not know what is the ink that should be used in the ballpoint pen. We do not know how to make the ball of the ballpoint pen. We do not know how to machine a ballpoint pen. We do not know how to make the refill of the ballpoint pen. And in that case, we do not have any option than to purchase a ballpoint pen when it is available in the market.

So, when you have a situation where people do not know how to make the other stuffs or when people are unable to produce the other stuffs primarily because they either do not have the knowledge or they do not have the time or they do not have the equipment or the art of making that thing is primary is possibly patented and this in these scenarios the people will have to buy the other products. So, this is the first scenario. One person one good makes trade inevitable.

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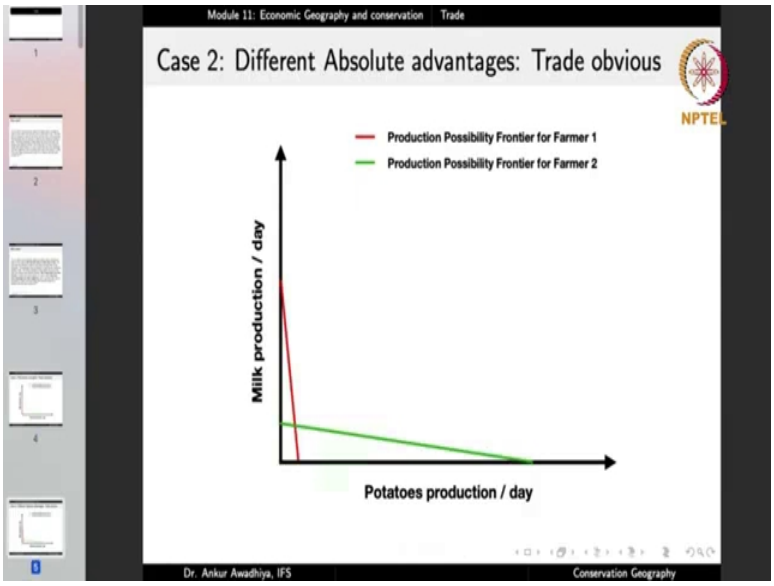

The second case is when people have different absolute advantages, which means that if the first farmer spends all his time to make milk. He can produce this much quantity of milk. So, this is the amount of milk that the farmer is able to produce. Whereas if he spent all his time in growing potatoes, he will be able to produce only this much amount of potatoes. On the other hand, if you look at farmer 2, if he spends all his time making potatoes, he can produce a large quantity of potatoes. But if he spends his time making milk, then he can make only a very small quantity of milk. In such a scenario, when people have different absolute advantages, there to trade becomes obvious.

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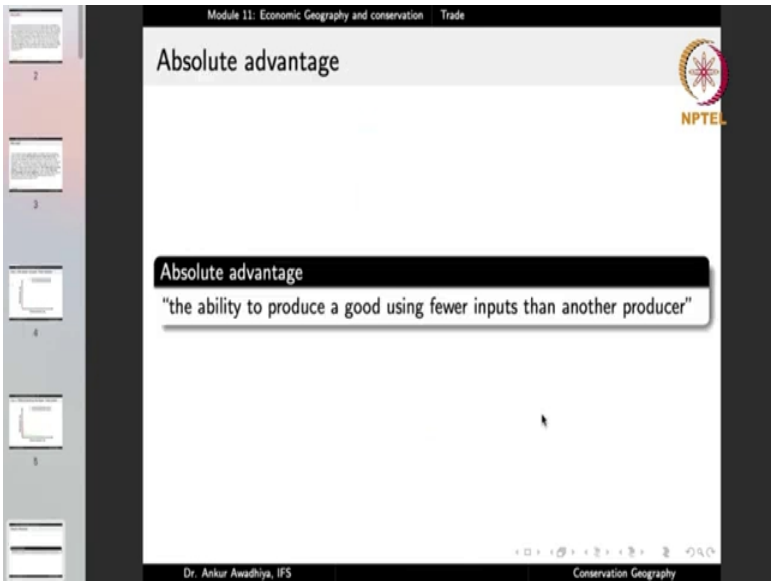

And absolute advantage means the ability to produce a good using fewer inputs than another producer. That is, if I make milk, I can produce say 30 liters of milk in one day. But I can only produce 1 kg of potatoes, whereas you can produce 30 kgs of potatoes in one day, but only 1 kg of milk. So, in such a scenario, it is better for me only to make milk, it is better for you only to make potatoes and we can trade.

Because if we spend a larger amount of time in what we have a greater expertise in, in what we have a greater absolute advantage in, in that case, both of us will be able to produce a very large quantity of goods all together. So, the production in the society will be highest if we will are only doing that what they have the highest absolute advantage in, because then everybody would be able to make things with the smallest amount of resources. And so in such a scenario as well trade becomes obvious.

And so if you have different absolute advantages, then it makes very much sense, it is common sense that the person who is good at making milk should only make milk, the person who is good at making potatoes should only make potatoes.

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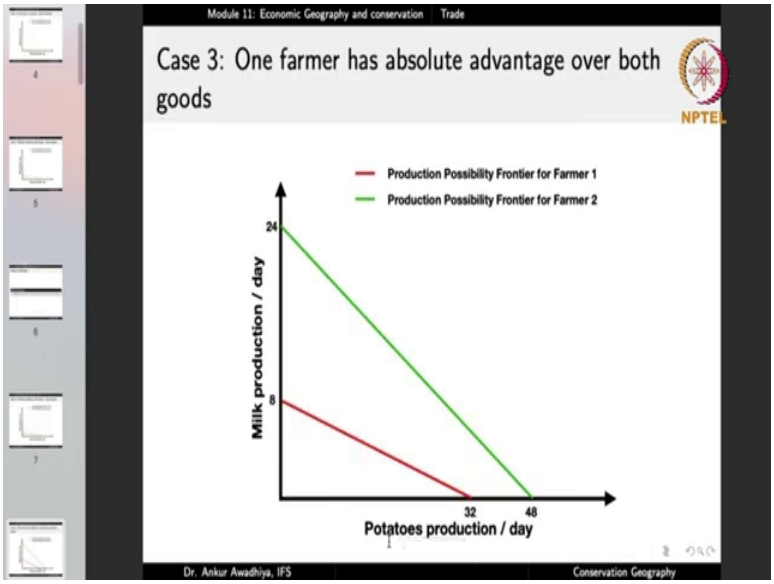

But we also have a third scenario. The one in which one farmer has an absolute advantage over both the goods. In such a case, should we go for a trade or not? And the answer is yes. Now, in this case, the first farmer shown in the red line, if he spends all his time to make milk, he can only make 8 liters of milk or let us say 8 kgs of milk, whereas farmer 2 can produce 24 kgs of milk. So, the farmer 2 has a much greater absolute advantage than farmer 1 when it comes to producing milk.

Similarly, if we look at potato production, then farmer 1 can produce only 32 kgs of potatoes if he spent all his time only in farming potatoes, whereas farmer 2 can produce 48 kgs of potatoes in a day. So, in this case, the farmer 2 has an absolute advantage over farmer 1 when it comes to making potatoes.

In other words, farmer 1 has a lower efficiency when it comes to production of milk and when it comes to the production of potatoes, whereas farmer 2 has a higher efficiency when it comes to the production of milk or to the production of potatoes. So, farmer 2 has an absolute advantage over farmer 1 in both the goods. Now, the question is in such a scenario when one person has an absolute advantage in doing everything should that person still go in for a trade or not.

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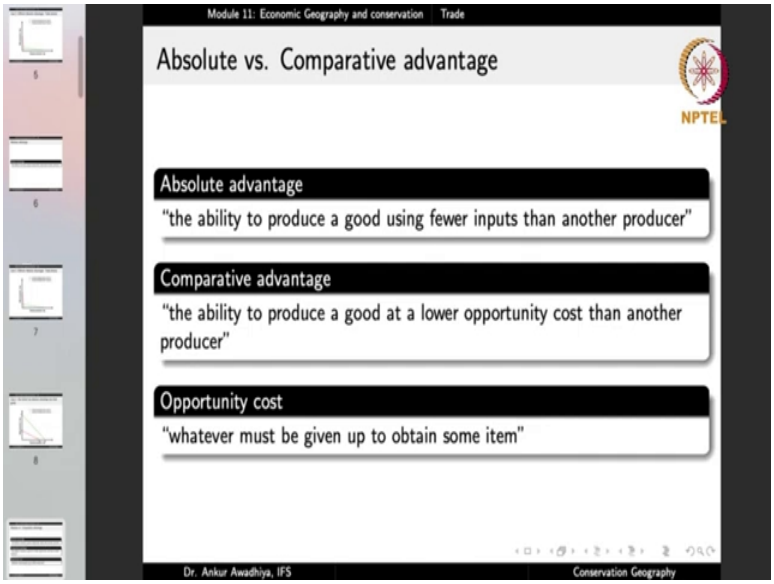

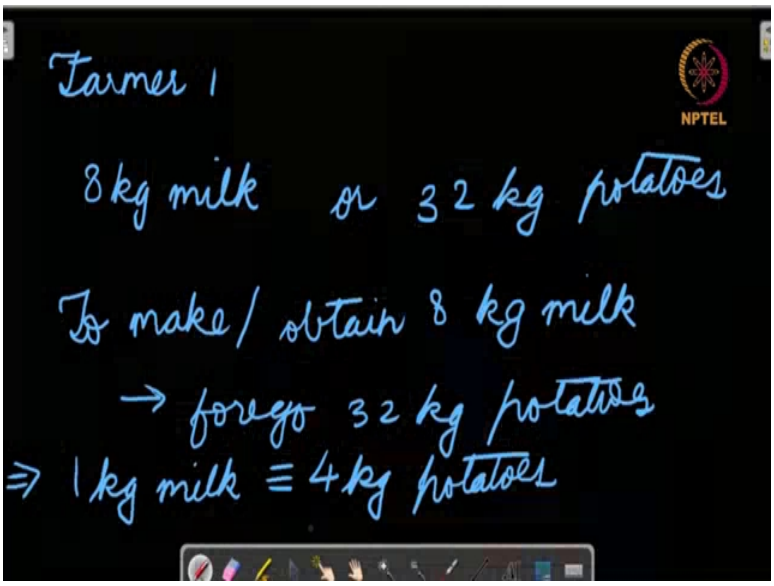

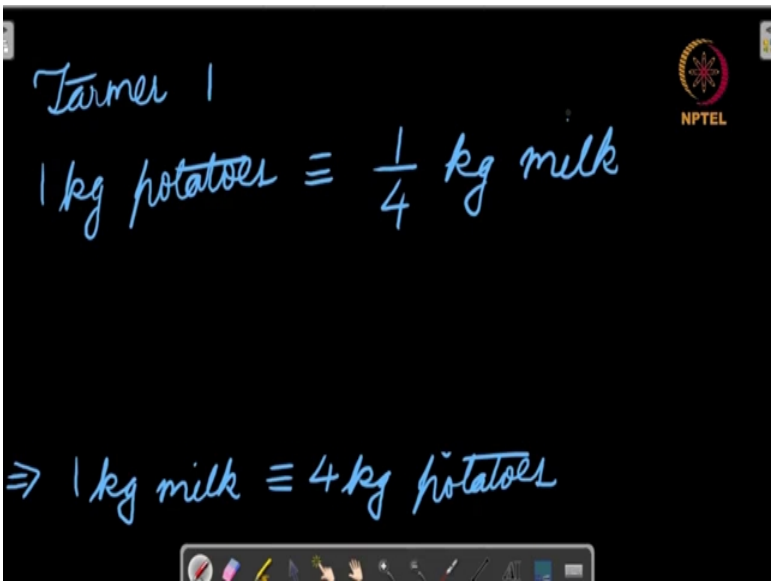

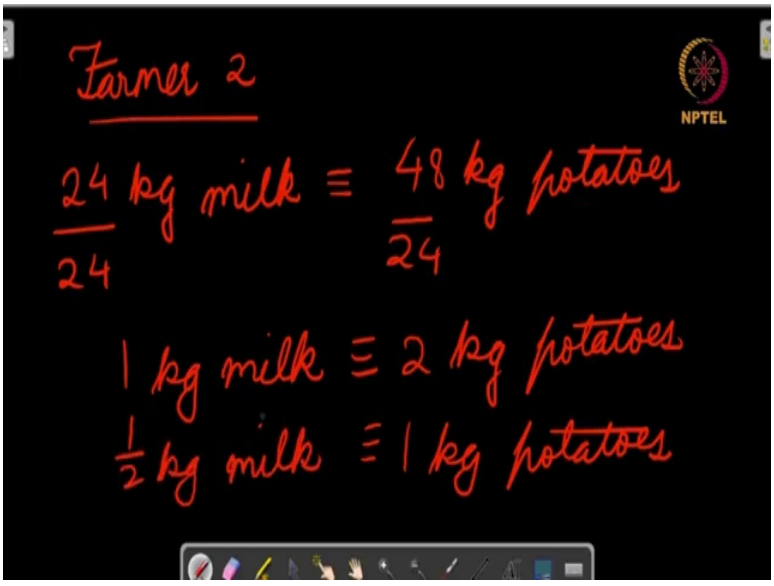

And here we have the concept of comparative advantage. So, when we talked about absolute advantage, it meant the ability to produce a good using fewer inputs than the other producer. But comparative advantage is the ability to produce a good at a lower opportunity cost than another producer, where opportunity cost is defined as whatever must be given up to obtain some item.

What does that mean? In the case of farmer 1, he can produce only 8 kgs of milk or 32 kgs of potatoes. So, we can write that farmer 1 can either produce 8 kg of milk or 32 kg of potatoes, either 8 kg of milk or 32 kgs of potatoes. Now, this is because the time is limited, the resources are limited. If farmer 1 is putting all of his time into milk production, it means that he has sold off all his equipment to grow potatoes. He has bought more cows. He is tending to those cows.

He is feeding those cows, taking care of them. And he is collecting the milk that these cows are making. In that case on an average everyday he gets 8 kgs of milk.

Whereas, if he spends all his time in growing potatoes, so in that case what will happen, he will sell off all the cows that he has and with that money he will purchase the equipment, he will purchase the seeds to grow potatoes and in place of tending to his cows he will be tending to his crops. He will be ensuring that they have good fertilizers. They have good pesticides. They are taken care of. And in that case, on an average everyday he will be producing 32 kgs of potatoes. Now, these are the two extremes.

But farmer 1 can also do something else. He can say that, okay, out of 8 hours that I have every day, I will spend 2 hours to look at my cattle and I will spend the rest of 6 hours tending to my fields. Or he can say that no, I will spend 4 hours with my cattle and I will spend 4 hours with my fields. So, he has these options. But if we look at the two extremes, we can say that, okay, he can either make 8 kgs of milk or he can make 32 kgs of potatoes.

Now, if farmer 1 is producing 8 kgs of milk, he is not producing 32 kgs of potatoes, because he is not spending any time to make potatoes. And so to make or to obtain 8 kg of milk he will have to forego 32 kg of potatoes or in other words to get 1 kg of milk he will have to forego 4 kgs of potatoes. Now, that is the opportunity cost. We said that opportunity cost is what must be given up or forgone to obtain some other item. So, farmer 1 if he wants to have 1 kg of milk, he has to leave 4 kgs of potatoes.

And similarly, we can also write that for farmer 1 1 kg of potatoes is equivalent to 1 by 4 kg of milk, because if he spent all his time producing potatoes, he would not have any time to produce milk and so he will have to give up the amount of milk that could be produced. So, that is the opportunity cost for farmer 1.

Now, for farmer 2, he can spend his time to make 24 kgs of milk. So, he can either make 24 kg of milk or he can spend all his time tending to his crops and he can make 48 kgs of potatoes. This means that if we divide both sides by 24 we get 1 kg of milk for him is equivalent to 2 kg of potatoes. So, the opportunity cost of making 1 kg of milk or the opportunity cost to obtain 1 kg of milk for him is 2 kgs of potatoes or the opportunity cost to obtain 1 kg of potatoes is 1 by 2 kg of milk. So, that is the opportunity cost what must be given up to obtain some other item.

And when we talk about competitive advantage, we talk about the ability to produce a good at a lower opportunity cost than another producer. We are not talking about the actual cost. We are talking about the opportunity costs.

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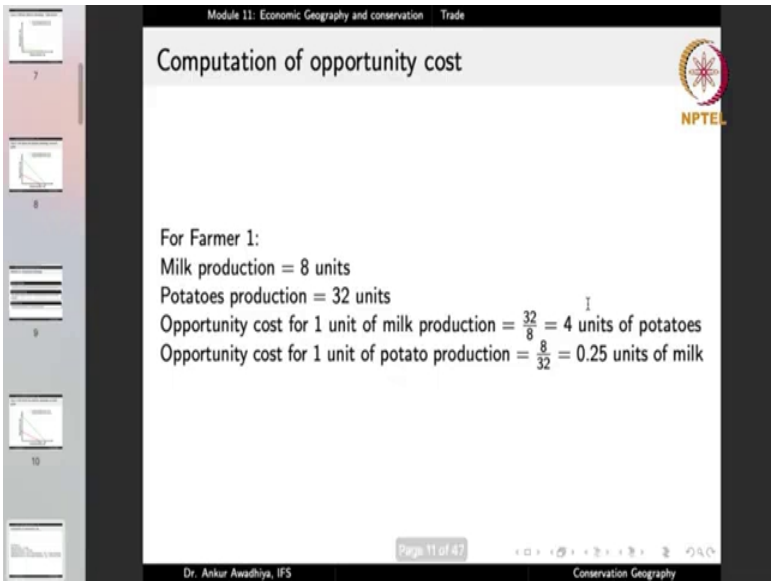

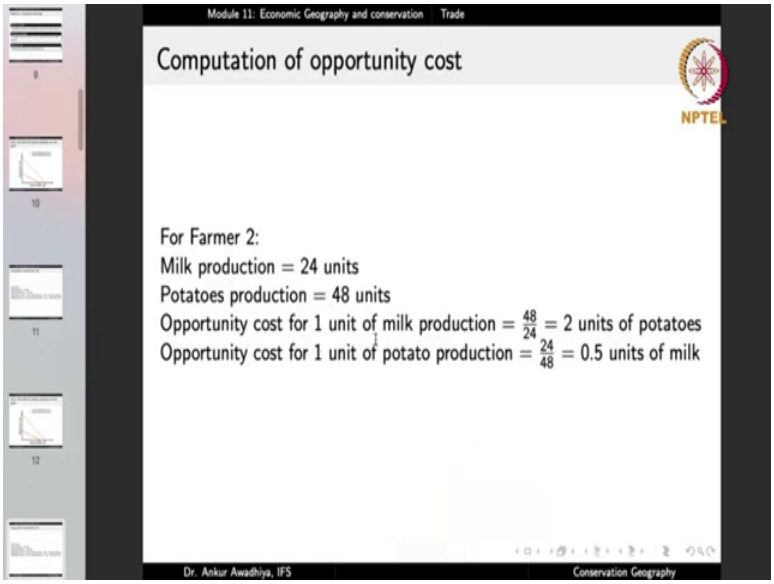

And so, in this case, what we can write is that for farmer 1, as we have seen, the opportunity cost for 1 unit of milk production is 4 units of potatoes and for farmer 2 the opportunity cost for 1 unit of milk production is 2 units of potatoes.

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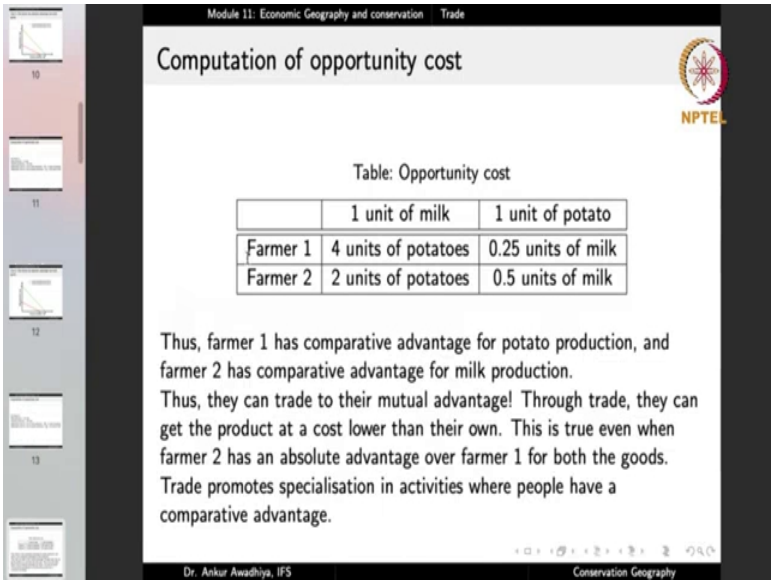

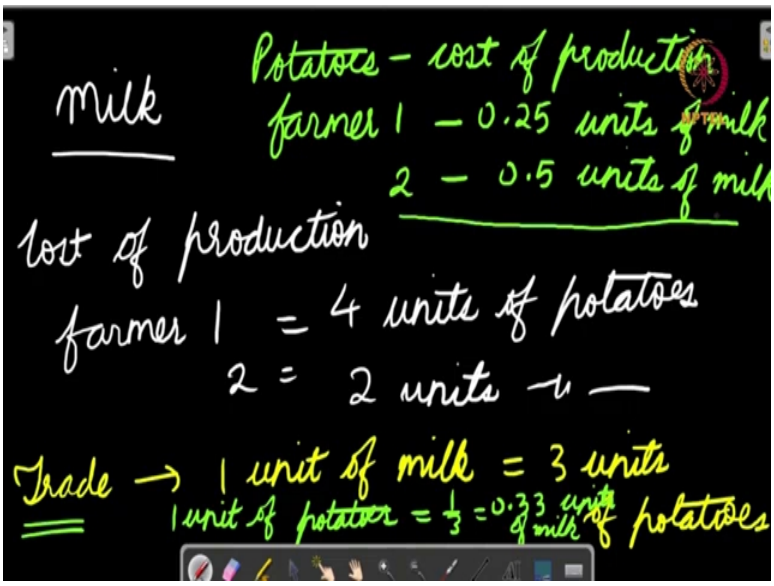

We can write it in the form of a table. So, for farmer 1 the cost of making 1 unit of milk is 4 units of potatoes and for farmer 2 the cost of making 1 unit of milk is 2 kgs of potatoes. And if we talk about the cost of making 1 unit of potato for farmer 1, it is 1 by 4 or 0.25 units of milk and for farmer 2 it is 0.5 units of milk.

And so we find that farmer 1 has a comparative advantage in potato production, because he can make potatoes at a lower opportunity cost. His opportunity cost is only 0.25 or one-fourth unit of milk, whereas the opportunity cost for farmer 2 is half a unit of milk. And farmer 2 has a

comparative advantage when it comes to milk production, because for farmer 2 his opportunity cost is 2 units of potatoes, whereas for farmer 1 it is 4 units of potatoes.

So, they still have an option to trade to their mutual advantage. Through trade they can get the product at a lower cost than their own cost of production. And this is true even when farmer 2 has an absolute advantage over farmer 1 for both the goods. That is if suppose they chose a price in between, so let us say that they are now trying to trade for milk. So, when we talk about milk the cost of production for farmer 1 is 4 units of potatoes and for farmer 2 it is 2 units of potatoes. In that case, farmer 1 will think that okay I have to forego 4 units of potatoes, whereas farmer 2 has to forego only 2 units of potatoes.

So, if farmer 2 can give me 1 unit of milk, so let us say they are now trying to trade and suppose they trade at a rate of 1 unit of milk is equal to 3 units of potatoes. Now, in this case, farmer 1 would think that, let me make more units of potatoes and I will give 3 units of potatoes to farmer 2 and I will get 1 unit of milk. Now, that is beneficial for me, because if I tried to make milk myself, I would have to forego 4 units of potatoes.

Now, we have seen in the beginning that trade arises because nobody wants to make something that costs more to make than to buy. And in this particular case, if it is cheaper for farmer 1 to buy milk, because for him buying milk will only require 3 units of potatoes, whereas making milk would have required 4 units of potatoes. So, if making is more expensive than buying then people go for buying. And so in this case, farmer 1 is happy if there is a trade at the rate of 1 unit of milk equals 3 units of potatoes. But then is this thing also good for farmer 2.

Now, in the case of farmer 2 if we look at potatoes, and we are looking at the cost of production, for the farmer 1, 1 unit of potato costs 0.25 units of milk, so it is 0.25 units of milk, and for farmer 2 it is 0.5 units of milk and the trading cost is 1 unit of milk equals 3 units of potatoes or we can say that 1 unit of potatoes is equal to 1 by 3 or 0.33 units of milk. Now, in this case, farmer 2 will think that okay if I have to produce potatoes then my cost is 0.5 units of milk, whereas the market price is 0.33 units of milk.

So, here again the cost of making is greater than the cost of buying. And when you have a situation when the cost of making is more and the cost of buying is less people prefer to buy things. And in this case, farmer 2 will prefer to buy the potatoes. And farmer 2 in this case would

say that, I should not produce potatoes, I should only produce milk and I will give this milk in the market and I will get potatoes in return at a cheaper cost.

Now, this is happening because farmer 1 has a comparative advantage in potato production and farmer 2 has a comparative advantage for milk production. Even though farmer 2 has an absolute advantage in both the milk production as well as potato production, but still he has a lower comparative advantage when it comes to potato production. And this is why trade happens even in those cases where there is one person who is good at making everything.

Now, because this person is good at making everything, he will have a good absolute advantage in making everything, but for certain products he will not be having a comparative advantage. And it makes sense for him or her to buy those things for which he has or she has a lower comparative advantage. And the product is available in the market for a lower cost.

Now, another benefit of trade is that it promotes a specialization in activities where people have a comparative advantage. And once people specialize in doing what they are good at doing that brings down the cost even more. So, that is another advantage of trade.

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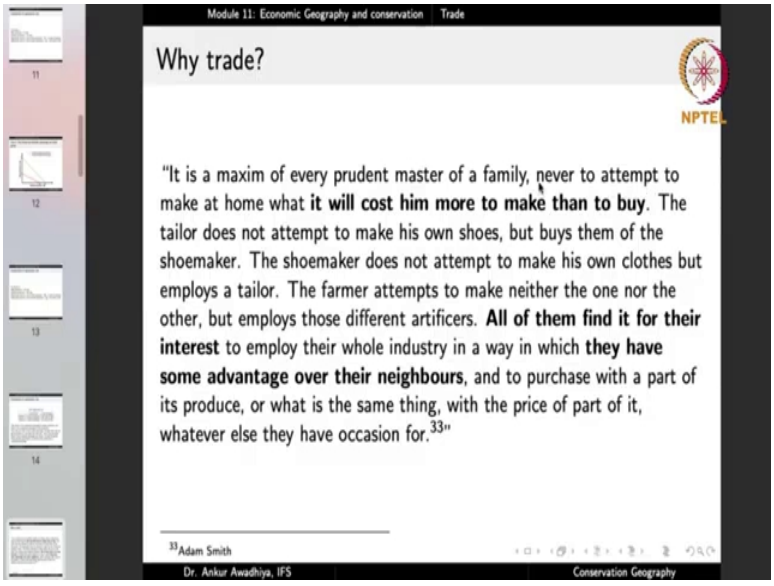

So, trade happens because people never attempt to make at home what it will cost them more to make than to buy. So, it is always preferable to buy cheaper items from the market. Why is it preferable, because everybody finds it in their own interest. So, it is a decision that people make

by themselves. And they always do those things where they have an advantage over their neighbors.

It can be absolute advantage or in most cases they are looking at the comparative advantage and they do those things where they have the highest comparative advantage in and produce goods and services in a quantity that is more than what they themselves need and trade the surplus for getting the other items where they do not have a comparative advantage in. And for those things where they do not have a comparative advantage, it would cost them more to make than to buy. So, this is the basics of trade.

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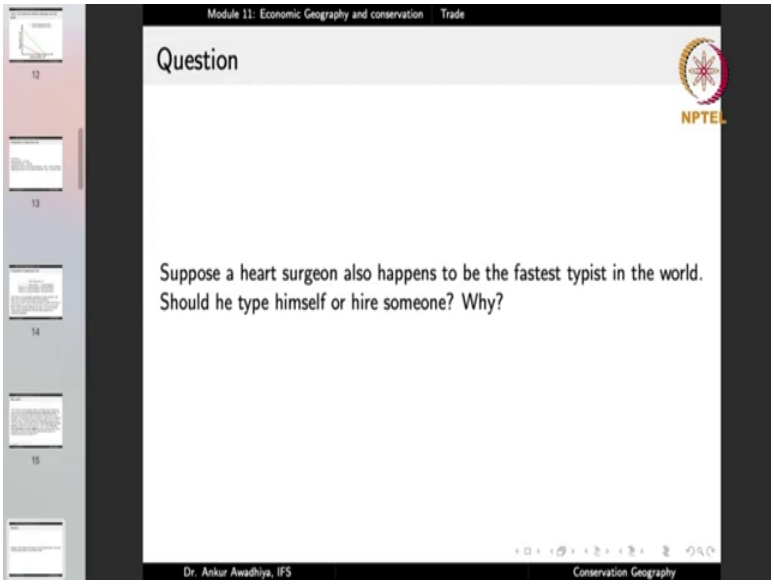

A common question here is suppose a heart surgeon also happens to be the fastest typist in the world should he type himself or hire someone and why? Now, in this case, the heart surgeon has the highest comparative advantage in doing hearts surgeries. But because he has a highest comparative advantage in doing heart surgeries, he does not have a comparative advantage in doing typing. And so the job of typing can be outsourced to other people.

Even though he has the highest absolute advantage when it comes to typing, because he is the fastest typist, but then too, he should hired the services of other people and devote most of his attention into doing heart surgeries.

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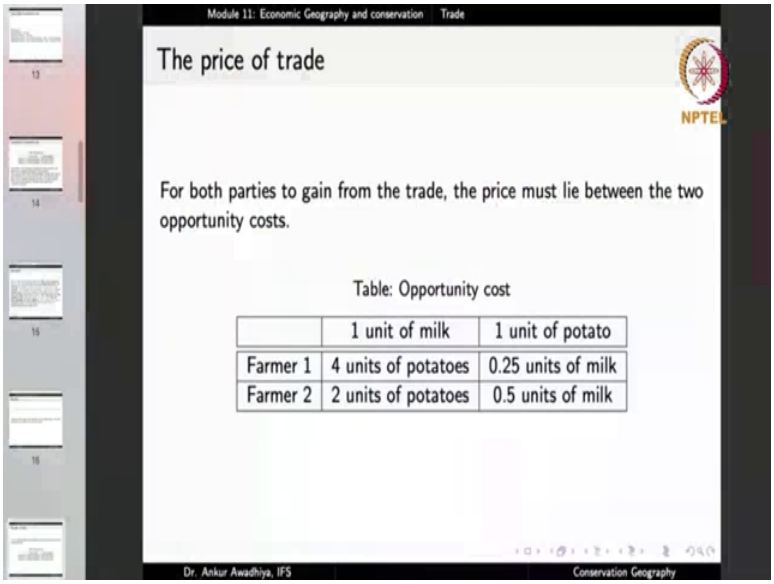

Now, the price of trade is determined by the comparative advantages or the opportunity costs of both the players or in the case of large markets multiple players. Now, if you only talk about two players for both the parties to gain from the trade, the price must lie in between the two opportunity costs. And we have seen before that if the price of milk is taken to be between 2 and 4, that is, say 3 units of potatoes, then both the parties will have something to gain out of this trade.

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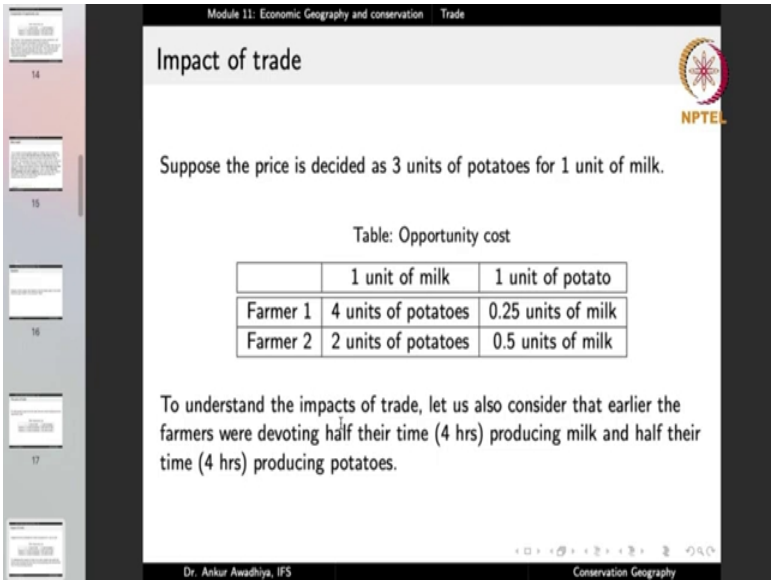

Now, we have seen this before that if the price is decided as 3 units of potatoes for 1 unit of milk and to understand the advantages to both the parties, let us consider that earlier the farmers were devoting half their time that is 4 hours to make milk and 4 hours to make potatoes.

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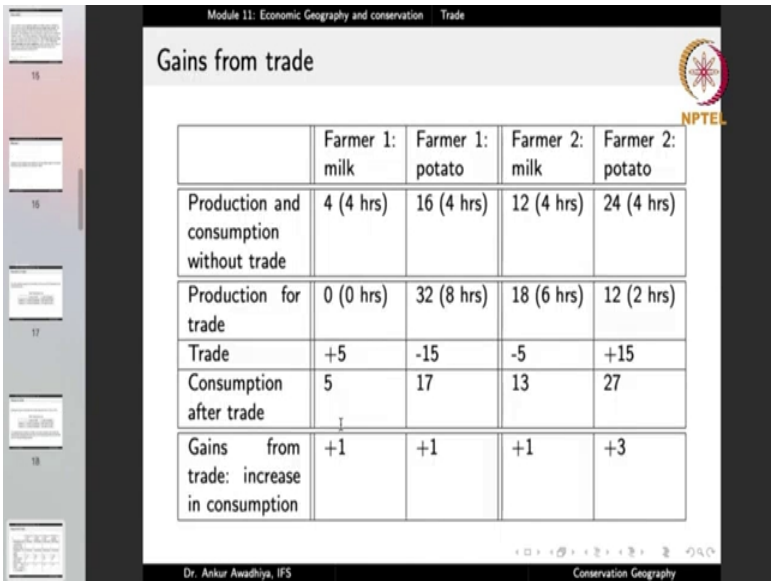

	Farmer 1: milk	Farmer 1: potato	Farmer 2: milk	Farmer 2: potato
Production and consumption without trade	4 (4 hrs)	16 (4 hrs)	12 (4 hrs)	24 (4 hrs)
Production for trade	0 (0 hrs)	32 (8 hrs)	18 (6 hrs)	12 (2 hrs)
Trade	+5	-15	-5	+15
Consumption after trade	5	17	13	27
Gains from trade: increase in consumption	+1	+1	+1	+3

In such a situation, what would be the production and consumption without the trade? Before the trade farmer 1 was spending 4 hours to produce milk and 4 hours to produce potatoes. That is he was giving half his time attending to his cattle and half of his time attending to his crops. In that case, he was able to produce 4 units of milk and 16 units of potatoes. Similarly, farmer 2 was also spending 4 hours for milk production and 4 hours for potato production and was able to produce 12 units of milk and 24 units of potatoes.

Now, in the situation of trade, farmer 1 does not produce any milk and spends all of 8 hours to produce potatoes, because he has a higher comparative advantage when it comes to potato production. And in 8 hours he is able to produce 32 units of potatoes. And in the case of farmer 2, he has a comparative advantage for milk production and so he increases his milk production. In pace of 4 hours he now devotes 6 hours and produces 18 units of milk and for the rest of 2 hours he produces 12 units of potatoes.

Now, in this case, farmer 1 gives 15 units of potatoes to farmer 2. So, we do a minus 15 because 15 units have been given to farmer 2 and in return he takes 5 units of milk because the price of milk is 1 unit of milk is equal to 3 units of potatoes and so the farmer 2 has now 5 units less of

milk, which he has given to farmer 1. Now, in this case, the total amount that is labeled with farmer 1 will be 0 plus 5 is 5 units of milk and 32 minus 15 is 17 units of potatoes and for farmer 2 it will be 18 minus 5 is 13 units of milk and 12 plus 15 is 27 units of potatoes.

Now, you can see that before the trade the farmer 1 had 4 units of milk, now he has 5 units of milk. So, there is an edition in milk. Earlier he had 16 units of potatoes, now he has 17 units of potatoes, addition in the case of potatoes. And similarly in the case of farmer 2, earlier he was having 12 units of milk, now he has 13 units of milk, so addition and milk. Earlier he had 24 units of potatoes, now he has 27 units of potatoes, addition in the case of potatoes. So, with trade both the farmers are able to increase the amounts of both milk and potatoes that they are having.

So, trade is beneficial for everybody who is engaged in the process of trade and this is why trade exists in the society. Trade exists because it increases the welfare of the people who are there in the society. So, this is the importance of trade or the gains from trade.

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Now, such a trade can happen via the barter system or through the market. Now, in the case of a barter system, the different producers of goods they come together and they exchange the goods amongst themselves. So, in this case if farmer 1 and farmer 2 come together and they exchange the milk and potatoes we will say that they are following the barter system. In the case of a market, a large number of producers and a large number of buyers, they come together and they

typically undergo these transactions through means of money. And in the case of money, this is a medium of exchange through which they can decide on the price point.

So, this is just another way of saying that the price in the market is 1 unit of milk is equal to 3 units of potatoes. But in place of saying it in terms of milk versus potatoes or milk versus rice or milk versus goat and so on, they will say that okay the price of milk is say 50 rupees for a kg of milk or the price of potatoes is 20 rupees for a kg of potatoes and so on. So, in place of making a direct comparison between two goods at a time, we make use of a medium of exchange that is known as money.

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Now, this trade can occur at a local scale or it can also occur at the international scale. And if you look at international trade, it is the exchange of capital, goods and services across international borders or territories. So, what kinds of things are exchanged, we have market for capital, goods and services. And when it occurs across international borders or territories, we say that it is international trade.

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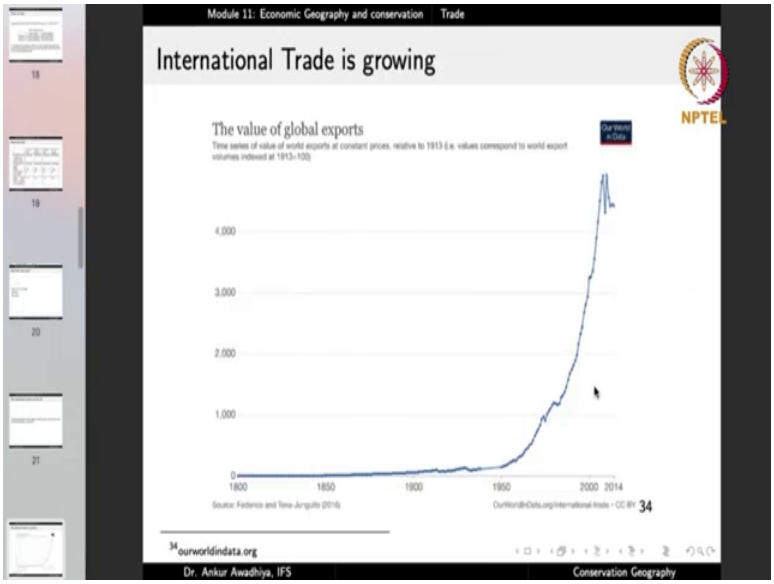

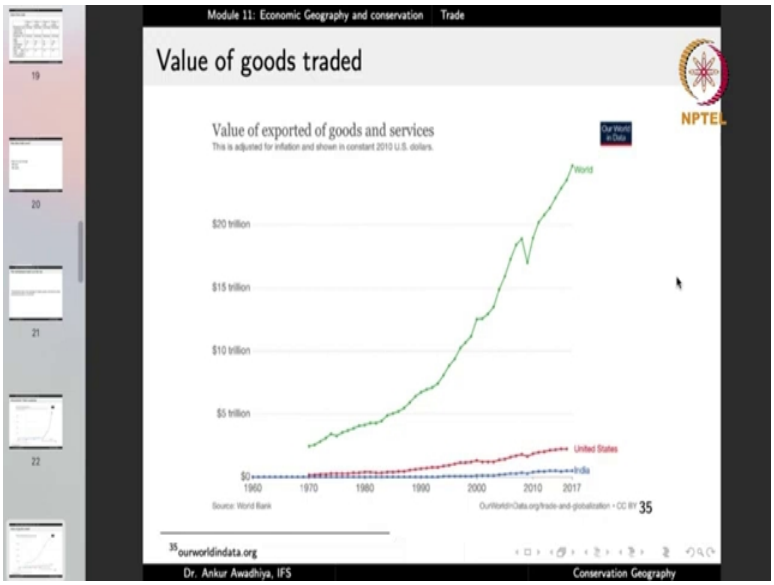

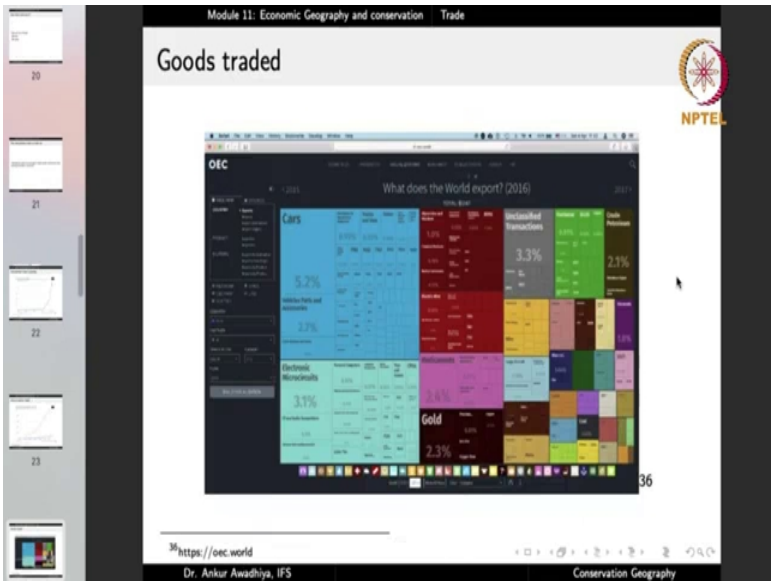

And the international trade is growing. There is roughly an exponential increase in the international trade. If you look at the value of the global exports, they are increasing. If you look at the value of exported goods and services, they are increasing. And quite a lot many goods and services are being traded in the world today. So, we have things like cars or vehicle parts or we have things like electronic microcircuits or medicaments or crude petroleum. So, these are all the larger shares in the world trade.

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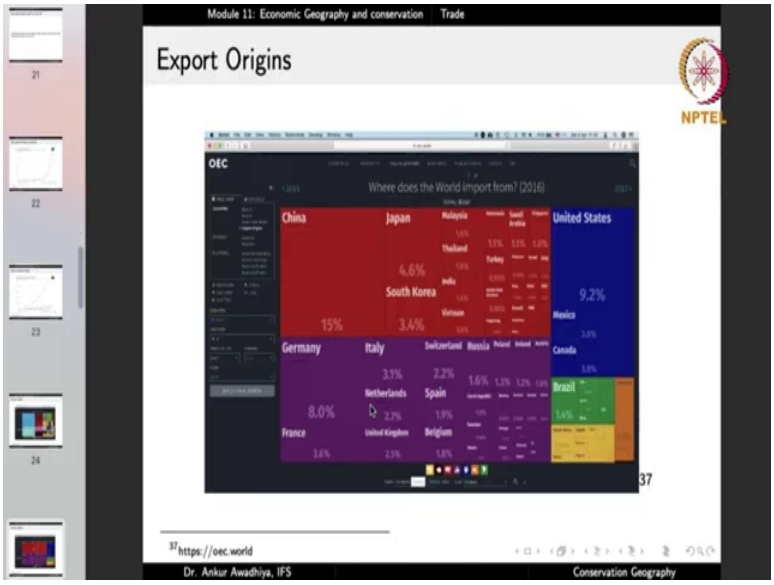

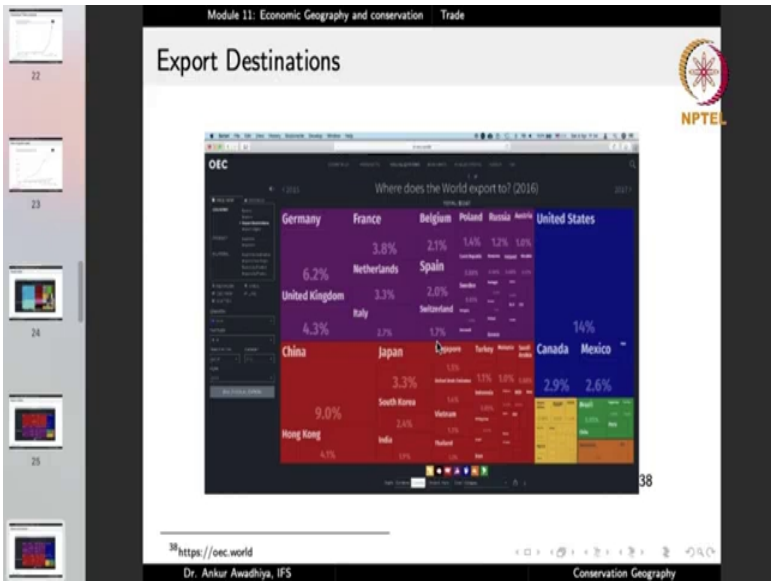

The export origin countries are primarily China, which accounts for roughly 15 percent of the global trade, Germany which is 8 percent, United States which is 9.2 percent, Japan 4.6 percent, South Korea 3.4 percent and so on. So, these are the major export origins. That is they are selling the goods abroad. And these goods go to these areas. United States imports roughly 14 percent of the world trade. China imports 9 percent. Germany has a share of 6.2 percent. UK has a share of 4.3 percent. Canada has a share of 2.9 percent and so on.

And you can find that a large number of countries are both the largest exporters and the largest importers, because here again these countries have now realized that it does not make sense to make those things that can be procured at a lower cost from the international market, and in that case, they go for imports. And to pay for these imports, they produce goods that they have a comparative advantage in and they produce them in surplus and they sell them off at the international market. So, there is both a large amount of import and export that happens in these large countries.

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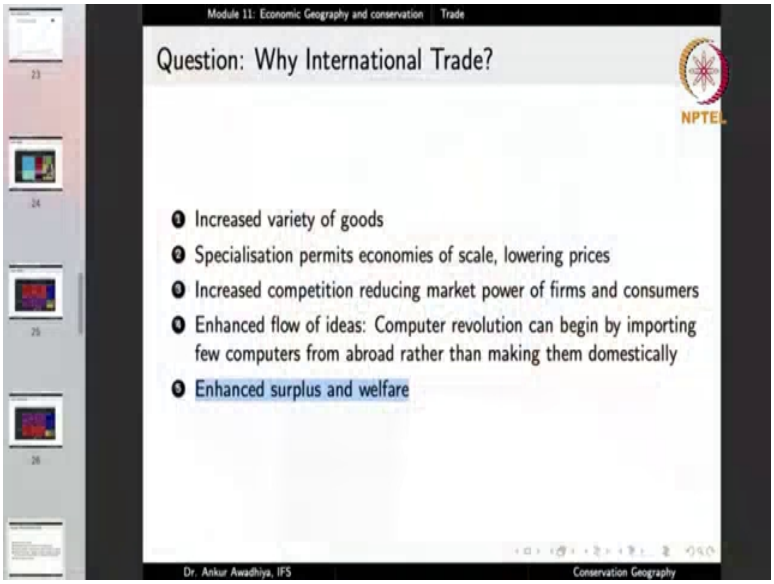

And international trade provides them with several advantages. There is an increased variety of goods. So, you not only have access to goods that are being produced in your own country, but you also have access to goods that are being produced in other countries. And this is true not just say in the case of goods such as cars or television, these days it is also playing a large role in the case of goods like food products.

So, now in India, for instance, we have access to fruits from the Middle East, we have access to fruits from Singapore, we have access to fruits from the U.S., we have access to fruits from Australia and so on. With this the variety of goods that a person can consume in any of these countries that has increased many fold.

Then specialization permits economies of scale lowering the prices. Meaning that when you go on producing the things that you have a comparative advantage in with the greater amount of investment, the prices are reduced even further primarily because of the efficiencies of scale. And this lowering of prices is useful for everybody on this planet.

Then there is an increased competition that reduces the market power of firms and consumers. So, no single firm or consumer can dictate the market. Because if a certain firm says that, I am going to sell my goods at a higher price, people would say that, you keep your price we will buy it from some other firm.

Even if a competitor does not exist in your own country, you can always take help of a competitor from some other country. Similarly, if there is a consumer that says that, no, I am not going to pay more than this amount, in that case, you can sell your goods to consumers in other countries that are probably more willing and able to spend more money. And so it reduces the market power of various firms and consumers.

Together with goods there is an enhanced flow of ideas. Computer revolution may begin by importing few computers from abroad rather than making them domestically. And in a large number of cases, we are also observing leapfrogging. That is countries are not going through the regular routes of transition into developed countries, but they are skipping a few steps and they are moving very fast.

For example, in many countries where we do not have any landline phones, we will have directly jumped to mobile phones, wherein, whereas in most countries people shift, moved from say telegraph to landline telephones and then to mobile phones. But nowadays in many countries, they are making a direct shift to mobile phones that too into 3G or 4G or 5G. So, this is leapfrogging.

You can get hold of equipment, you can get hold of ideas from abroad and you can directly implement them into your own country cutting down the time and costs of innovation. Then there is an enhanced surplus and welfare of everybody. So, international trade happens because international trade is of several advantages to several people.

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And if you look at the surplus or the amount of benefits, we can define a few terms. The first is world price. World price is the price of a good that prevails in the world market for that good. So, world price says that, what is the price that is prevailing in the world market that is the world price. And international trade happens if domestic price is less than world price, then people go with exports. That is in the world people are ready to pay a higher price. In the country the price is low. So, we sell to the world market. Whereas, if something has a lower world price than the domestic price, we import that good.

Now, this is the same thing as we saw in the case of a household. We do not make those things for which it is cheaper to buy them from the market. And similarly, we go with an import. We buy things in which case the world price is less than the domestic price. So, it costs more to manufacture, but it costs less to buy and so we go with a buying. And to pay for this price we go for exports wherever the domestic price is less than the world price or in other terms for all those goods and services where we have a comparative advantage. So, that is the world price.

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And we can define the gains for importing and exporting countries.

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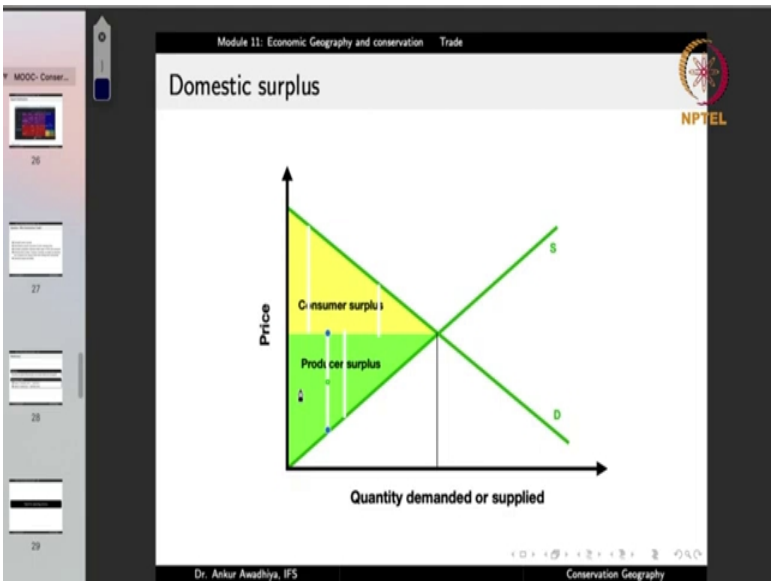

And in this case, we can look at the surplus. Now, surplus means that if we draw a curve between the price and the quantity demanded or supplied in the market, we can draw these two lines which are the demand curve and the supply curve. And an intuitive way to understand this is that suppose we are looking at the demand curve, say the demand for a pen. If a pen is available for say 5 rupees, what would be the demand versus if the same pen were available for 10 rupees versus if the same pen was available for 50 rupees.

Now, typically what we observe is that if the price goes down, then the demand increases or the quantity demanded increases. Because more and more people now think that, okay, this thing is available for a cheap price and I am going to gain a benefit which is more than the price of this particular pen and so let us buy this pen. And so we can say that as the price reduces, the quantity that is demanded increases.

And this is what the demand curve shows. This line is the demand curve. As the price reduces, so at this point the price is high, at this point the price is low. And at this point the quantity demanded will be this much, at this price the quantity demanded will be this much. So, as price reduces the quantity demanded increases.

Now, that is the demand curve. We also have the supply curve. And supply curve asks the question that, if the price increases, will a producer supply more goods or less goods. Now, every producer will have a certain cost of manufacturing the item. And if the price increases, then there an incentive to sell more and more goods, because there is an opportunity to have more and more profits. And so as the price increases, the quantity supplied also increases, which is the supply curve.

So, at this point the price is less and the quantity supplied is less. At this point the price is more and the quantity supplied is also more. So, the demand and the supply curves give an idea about the market. And the equilibrium price in the market is given by this point where both these curves intersect with each other. So, at this point we will have an equilibrium price given by this point and we will have an equilibrium quantity demanded or supplied given by this point.

Now, for all of these consumers they have to pay this price, whereas they were willing to pay this price. And you are willing to pay a certain price, because you consider that the amount of benefit or surplus that you get from an item is greater than that price. Meaning that, if you consider say a pen, now if I think that by using this pen I am going to get a benefit say pleasure or say satisfaction that is worth say 15 rupees, in that case I will be ready to pay any amount that is less than or equal to 15 rupees.

Because in that case suppose I am able to get this pen for 10 rupees and I am able to get a satisfaction worth 15 rupees then my, I have a little amount of sadness because I am being deprived of 10 rupees to pay for this pen, but I am getting satisfaction that has worth 15 rupees

so I am at a profit of 5 rupees, whereas if my satisfaction is 15 rupees I will not be ready to pay 20 rupees for this pen. So, any buyer is willing to pay any amount that is less than or equal to the satisfaction or the surplus or the benefit that the buyer gains out of purchasing that item.

Now, consider a buyer at this point, now this, at this point, the buyer was ready to pay this price, so this is the amount of surplus that the buyer was thinking that or the value that the buyer was putting at this item, whereas he has to pay only this much amount. So, the difference which is given by this line from here to here this much amount is the benefit or the surplus that the consumer has had by purchasing the item.

For this consumer, the surplus is less, because he was putting a worth only this much. And he could have the item for this much amount and so this is the surplus. Now, adding all the consumers in the market, we can say that the total consumer surplus is given by this yellow triangle. Similarly, for any producer, a producer will only sell something if the price is greater than the cost of manufacturing that item.

Now, suppose I am a producer of pens and it takes me 5 rupees to make this pen. Will I sell this pen for 4 rupees? Answer is no, why should I bear a loss. But will I sell this pen for say 6 rupees. Answer is yes, because I will be gaining a profit of 1 rupee. Will I be ready to sell this pen for say 5.50 rupees? Answer is again yes, because I am at a profit. But will I sell it for 4.99 rupees. Answer is no. So, the point at which I will ready to sell this pen will be given by the cost of manufacturing this pen.

If this pen is being, is to be sold for 5 rupees then I will be in a fix. I will think that, okay, if I sell this pen or not there is no change in my surplus. I am not gaining any benefit at selling it for 5 rupees. But I may still sell it, because I am not at a loss. But I may even say that, okay, I am not going to sell it. But for any price that is less than 5 rupee, even 4.99 rupee I will simply say, no, I am not going to sell this pen. For any price that is greater than 5 rupees, I will be ready to sell this pen.

Now, in the case of the market, if we look at a producer at this point, this was the cost of manufacturing the pen for this producer, whereas the price in the market is given by this point. So, this is the surplus that he gains. This is the profit that he gains in other words. Similarly, a producer at this point is able to gain this much amount of profit. And similarly, if we add the

surplus of all the producers, we get to this green triangle. So, this is the producer surplus. And the sum of the consumer and the producer surplus is the total surplus that is brought about by the market.

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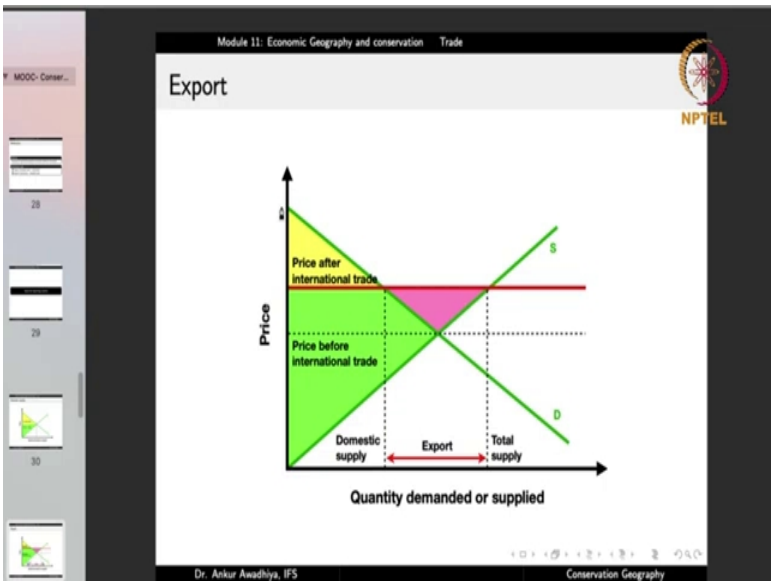

Now, in the case of international trade, a country exports only when the world price is greater than the domestic price. And in this case the world price is shown by this red line. The producer surplus will be given by this triangle. So, all the points at which the price is greater than the cost of manufacturing. So, this is the producer surplus. Whereas, the consumer surplus is given by this triangle for all those point for which the price is less than the value that the consumer is putting at the item.

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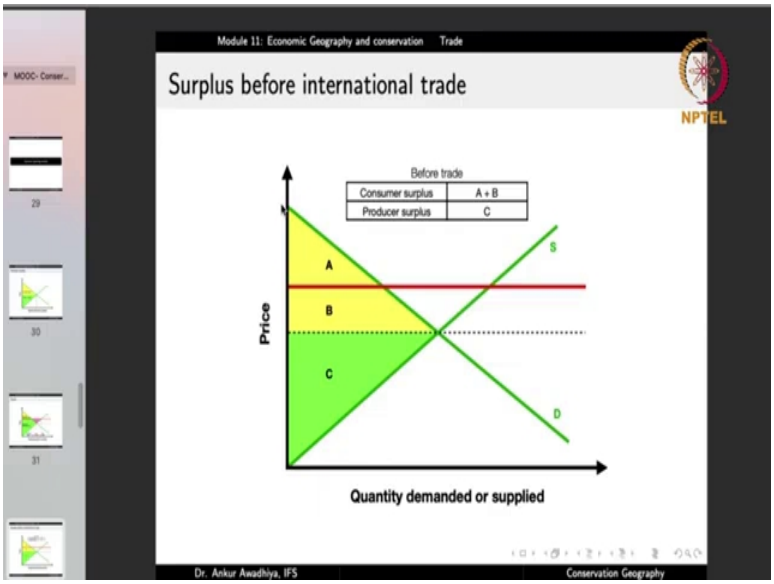

Now, if you look at the surplus before the international trade, it was given by the yellow and the green triangles. So, it is A, B, and C. Consumer surplus is A plus B, producer surplus is C.

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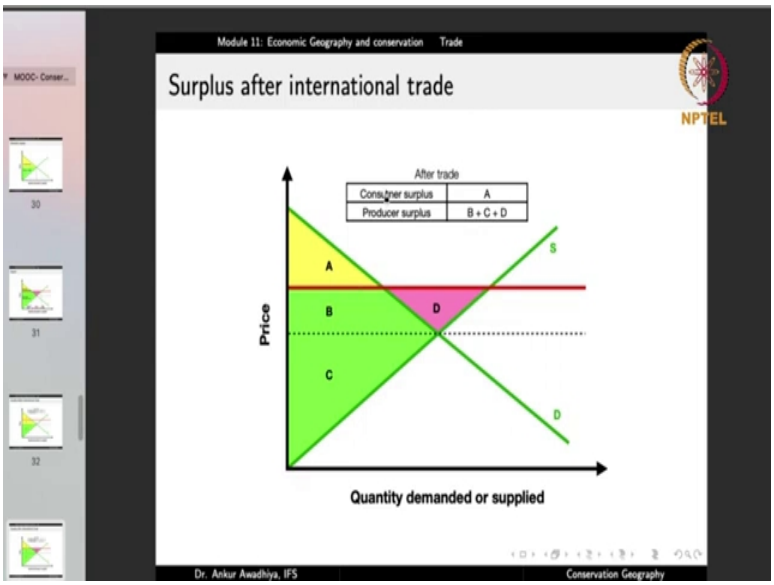

After the international trade, you have this area that is added to the producer surplus. And this portion that was earlier a part of the consumer surplus is now a part of the producer surplus. So, now we have a situation where the consumer surplus has reduced. In place of this big yellow triangle, it is now this yellow, this small yellow triangle. So, the consumer surplus is not small, this small triangle which is A, producer surplus is B plus C plus D.

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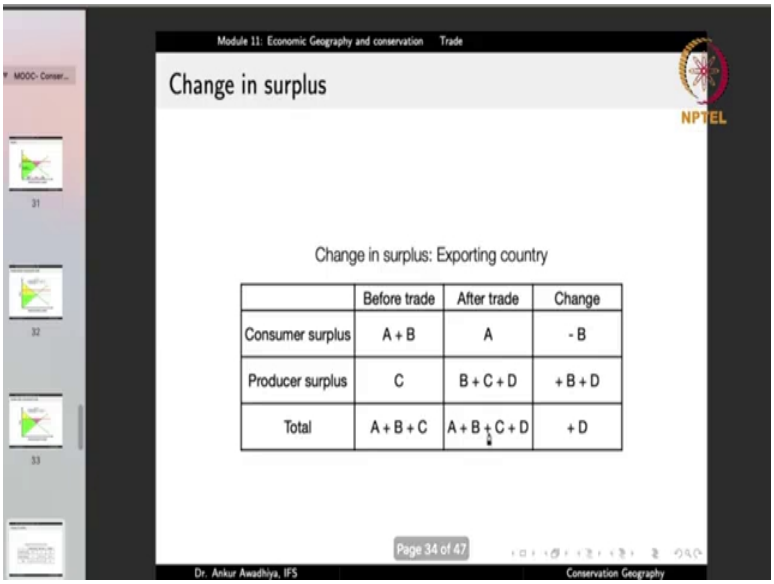

And if you look at the total surplus, earlier it was A plus B plus C that is A plus B plus C, but afterwards it becomes A plus B plus C plus D this much. And so there is an increase in the total surplus. There is a loss for the consumers, because when you have a world price that is greater than the domestic price, most of the people would want to sell at the world price. And so the domestic consumers will find that the price has increased even in the domestic market.

Whereas for the producers, they will have a very good day, because the price has increased and so now their profits have increased, their surplus has increased. So, there is a decrease in the consumer surplus, but there is an increase in the producer surplus and a net increase in the total surplus for the exporting country.

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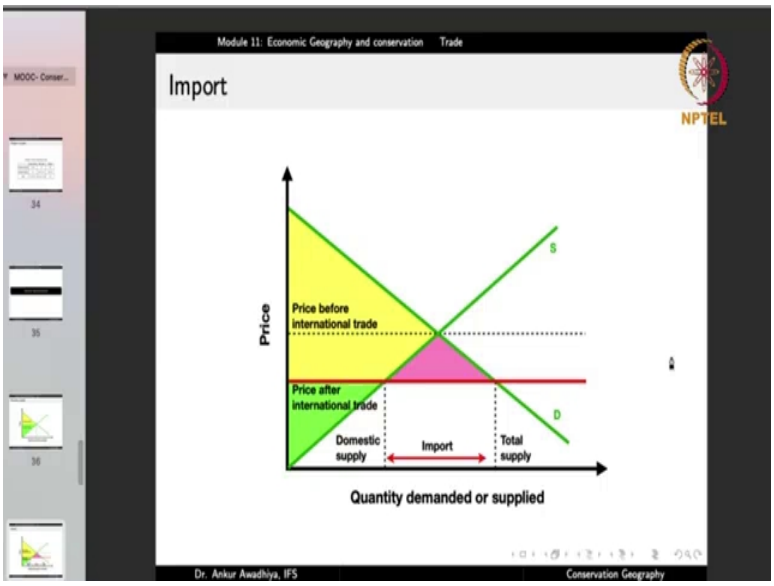

In the case of an importing country, here again we say that there is an import when the world price is less than the domestic price. So, you can buy things cheaply than the cost of making them. And with the decrease in price the consumers have a good day, their surplus increases, whereas the producers have a bad day, because their surplus reduces. But overall if you look at the surplus before the international trade, it was A plus B plus C, afterwards it becomes A plus B plus C plus D and the total surplus has increased.

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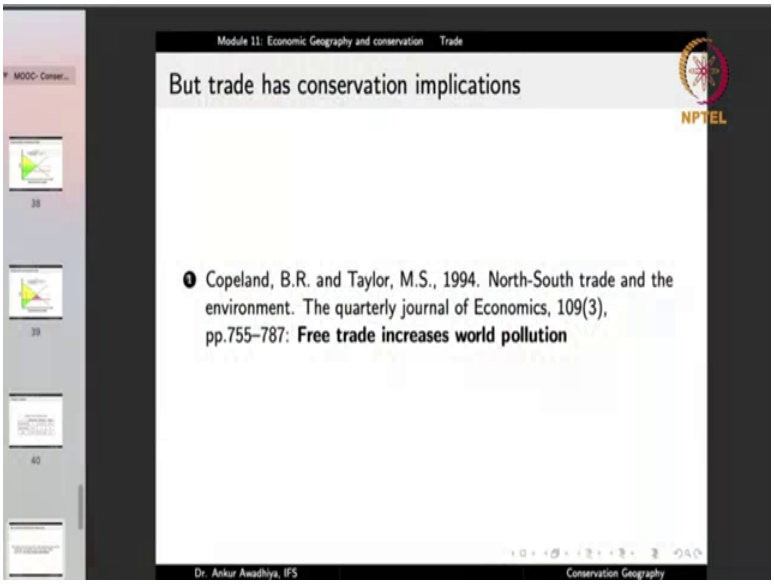

So, when we talk about international trade it is good for the exporting country and it is good for the importing country. Now, this is why trade exists in this world, because it is good for several different people. But then trade also has its conservation implications. Free trade increases world pollution. Because when we have a situation where people want to produce goods cheaply, then in certain cases they try to cut costs.

Now, it is easy to regulate pollution in your own country, but it is very difficult to regulate pollution in other countries. And so you might be buying things from abroad because they are cheaper, but that cheapness could be coming because of the destruction of habitat, destruction of biodiversity.

Similarly, when goods move from one place to another there is pollution, because we have already seen before that there are shipping lines you have large amount of sulfur dioxide in the atmosphere. Any moment requires energy and that energy has to come from somewhere. In most cases it comes fossil fuels. So, it is playing a big role in the greenhouse gas emissions. So, free trade increases pollution.

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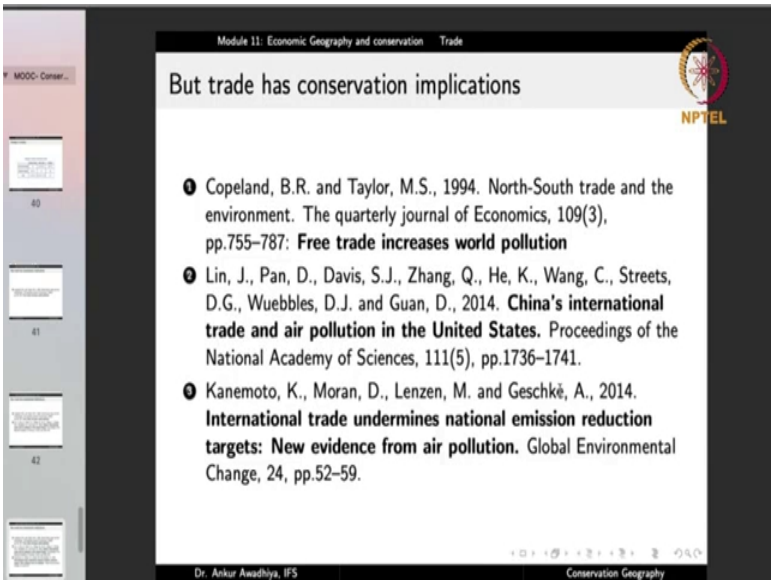

We have things like China's international trade leading to air pollution in the United States. So, it crosses the boundaries. International trade undermines national emission reduction targets, because again things are out of your control.

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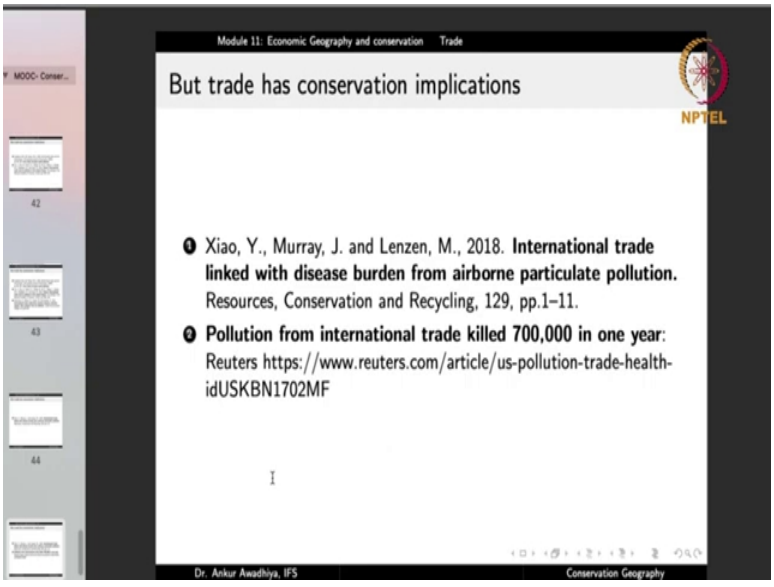

International trade linked with disease burden with airborne particulate pollution. So, people are becoming diseased. People are even dying because of international trade because of the pollution that is happening.

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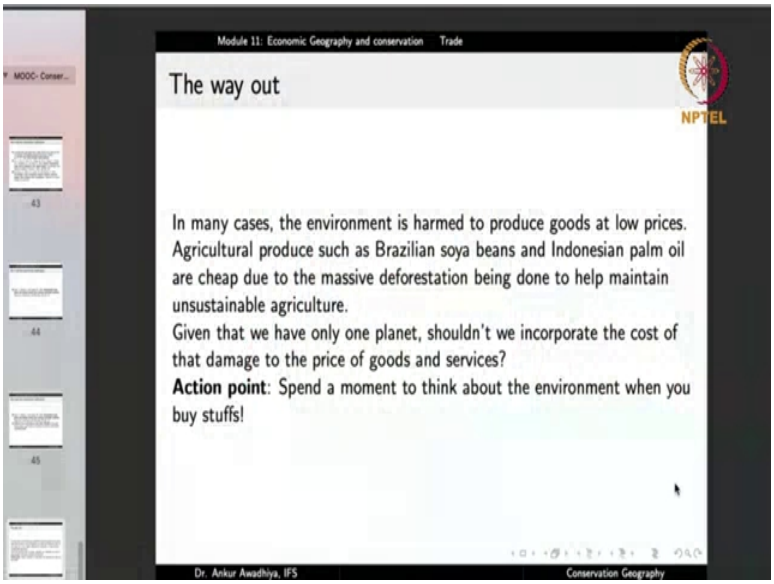

Now, the way out in this case is that, we cannot just say that, okay, trade is bad, international trade is bad and we should ban it. That is not going to happen, because it plays a very important role in economy, in increasing the surplus and benefits of different people. So, we cannot wish it away. But we can be a bit more mindful of international trade.

In many cases, the environment is being harm to produce goods at lower prices. Agricultural produce such Brazilian soya beans and Indonesian palm oil are cheap due to massive deforestation that is being done to help maintain unsustainable agriculture. We have seen this before. We looked at the deforestation in Rondonia. Now, that deforestation is happening to make way for soya bean and to make way for ranches. Now, when you buy something you should at least think about the conservation implications.

So, given that we only have one planet should we not incorporate the cost of that damage to the price of goods and services? If we did that then probably those things will become a bit more expensive and disincentivise people from buying them. So, that is one way out. That you incorporate the environmental cost, the environmental damages into the cost of prices of different products. But until that is done you can at least spend a moment to think about the environment when you buy stuffs.

So, trade has its own benefits, it has its own conservation implications and we have to be mindful of them whenever we are engaging in trade. Otherwise, we will lose our planet. So, that is all for today. Thank you for your attention. Jai Hind!