Conservation Economics
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Module 1
What is Economics?
Lecture 3
Working of the Economy

Namaste! We move forward with our discussion on the principles of Economics. In this lecture, we will look at Interactions and the Workings of the Economy. Before we move forward, let us recap what we have seen so far.

The first principle of economics is that people in society face tradeoffs. Now, tradeoffs arise because our needs - or our wants - are unlimited, but the resources to get those wants are limited. So, we always have to make a choice - whether I should get more of A or whether I should have more of B? Because I have limited time, I have limited resources, I have limited money and so, I cannot have all of A and all of B.

A very easy example is the choice between having more ice cream or more chocolates. The more and more amount of money I put into getting ice cream, the less and less amount of money I have to have chocolates, and so on. We face tradeoffs on a daily basis at a personal scale depending on what we want to buy or say where to put our time into. Do you want to go out and watch a movie or do you want to go out and spend time with your friends? Because if you go and watch a movie you cannot chit chat with your friends at the same time. Your time is limited. Your time is a resource which is limited. So, we have a trade off in terms of money, we have a trade off in terms of time and these are not just at the level of the individual, but they are also there at the level of the society.

Whether the society should have more of consumer goods or whether it should have more and more of capital goods - for instance. Whether the society should put more money into defence sector or whether it should put more money into education sector, or say health sector? Whether we should promote - with the same amount of money that we have - should we promote primary health care services or secondary health care services or tertiary health care services?

These are all different tradeoffs that the society needs to make. So, the first principle is that people and society face tradeoffs, and these tradeoffs lead to costs. Cost is defined as what you give up to get something. Now, what you give up can be in terms of money, it can be in terms of time, or it can be in terms of certain other products. So, for instance we can give a concrete example - we can say, that we have 100 rupees with us. These 100 rupees can buy, say 100 grams of ice cream, or say 200 chocolates. Now, the cost of ice cream - we can say that the cost of ice cream is 100 rupees. The cost of 100 grams of ice cream here is 100 rupees.

But, we can also say that the cost of 100 gram of ice cream is 200 chocolates because, we are either giving up 100 rupees or we are giving up 200 chocolates to get 100 grams of ice cream. We could even represent cost in terms of time. So, for instance if there is a labourer who works for one complete day and earns say 200 rupees, in that case the labourer might even say that the cost of 100 grams of ice cream is working for half a day. So, the cost of something is what you are giving up to get it, and what do you give up? You can give up money, you can give up time or you can give up certain other goods or resources. These are costs. The third principle of economics is that rational people think at the margin.

Now, one basic or one fundamental assumption that economics makes is that people are rational. And, by rational we mean that people make decisions consciously by taking into account all the information that they can have access to and they process this information. So, any decision that you make is not out of a jiffy, but you actually put an effort to make it a rational decision to maximise your utility or to maximise your benefit.

So, for example if you say that ok, I have had 70 grams of ice cream. Now I should have some chocolate. Because, I want to change the taste or because chocolates will give me much more satisfaction - because, I have already had a substantial amount of ice cream. We will say that you are making a decision. You are thinking about it, and so, this is a rational decision. Now, rational people and also a rational society - they think at the margin. When we say thinking at the margin, it means that we are not making a choice between 100 percent of A or 100 percent of B. But we are thinking that ok I have had so much amount of A. What should I do now? You are always thinking at the edge; you are always thinking at the margin. For example, a society might think that ok I have got three factories for making cars, should I make a fourth factory for making cars or should I make a fourth factory for making say television. This is a thinking at the margin. The society is thinking - or people in the society are thinking that ok we have had three factories, but we have more resources at our disposal. Should we spend those resources into making more of automobiles, or to make something else - given that we already have three factories. This is thinking at the margin.

Similarly, as we saw in the example before there is an airlines and the cost - or the average cost - of selling a ticket or selling a seat on that airlines is say 5000 rupees. Now, there is an aircraft that is ready to take off and there is a passenger who has just arrived and he says I cannot pay you 5000 rupees, I can only give you 3000 rupees. How should the airline make the decision? If the airline is not thinking at the margin the airline would say, I sell my tickets at 5000 rupees. You cannot give me 5000 rupees. So, I cannot give you a seat. But that would not be thinking at the margin. Thinking at the margin the airlines would say that ok, if this one more person gets into the aircraft, there will be some excess cost - for certain amount of fuel - because we are adding certain weight of the passenger as well as his goods, plus we would have to serve this passenger, probably, say a bag of peanuts. The airline carrier, if it is thinking at the margin - it would do a cost computation. Of how much would this extra fuel and extra bag of peanuts cost the airlines. If the cost of of taking this passenger into the aircraft and flying them is say 1000 rupees and this person is giving the airlines 3000 rupees. So, thinking at the margin the airlines would say ok let me make a profit of 2000 rupees, whats wrong with that? And so, even though the price is less than the average price at which the airlines is selling the seats, the airlines would sell the seat to this passenger for 3000 rupees.

So, a lot of rational thinking occurs at the margin, which is why whenever there is a product that is going to get expired soon, we see a hefty discount that is offered in shops or last minute bookings for aircrafts or last minute bookings for resorts. We see these phenomena because, these people are thinking rationally and they are thinking at the margin - they are thinking at the edge.

The fourth principle that we saw was that people respond to incentives. Incentive is the inducement to do something or to refrain from doing something. People respond to incentives. It means that if you want people to behave in a certain manner you should provide them with incentives. These incentives can be in the form of reward or they can be in the form of punishment.

For instance when a teacher says that if you do homework, and if you do it properly I will give you a chocolate - the teacher is offering a positive reward as an incentive to make the pupils do their homework properly. On the other hand, if the teacher says that if you do not do your homework properly I will give you a punishment. Then, here again the teacher is providing an incentive to the pupils to do their homework.

So, the incentive can be in the form of a reward, it can be in the form of a chocolate or it can be in the form of a punishment.

And, our societies regularly make use of incentives. When the government says that we are subsidising higher education the government is providing incentive to people to go for higher education. Because otherwise, their cost would have been larger and with the subsidy the cost is reduced. Or when the government says that ok we are going to put a heavy taxation on cigarettes. This is because the government wants people to refrain from smoking, because of its negative health impacts. And so, the government would put a heavy amount of taxation onto cigarettes. So that people refrain from putting their money into cigarettes.

This is a very important principle of economics: people respond to incentives. Throughout this course, we will have a look at what sorts of incentives are provided by the government or by the society to make people respond in certain ways.

Then, we looked at interactions and in interactions, we saw that trade is something that can make everyone better off. This is because with trading we allow people to specialise into doing things that they have the highest comparative advantage in. Comparative advantage means that if I can make something at a cheaper cost than you, then probably I am in a better position to make that good. And in that case, the society would benefit if I made more and more of that good. Here again the important thing to note is that the cost of doing something is what you give up to do something else.

So, for instance if I can spend my time to grow wheat or to raise a dairy, and in 1 hour I can make say 1 kg of wheat or 100 grams of milk. And say, another person in 1 hour - he or she can make 1 say 200 grams of wheat or 500 grams of milk. Here we can see that I am at a much better position at growing wheat. Because, in 1 hour I can make 1 kg of wheat, and this person can only make 200 grams of wheat.

So, if I specialise in making wheat, I can spend more and more time in growing wheat and then our society will have much more amount of wheat than if both of us were doing both wheat and milk production. But here we can also see that when I do a computation for wheat, then the cost of making 1 kg of wheat for me is 100 grams of milk. The cost of 1 kg or the cost of making 1 kg wheat is 100 grams of milk. Whereas, for the second person the cost of making 1 kg of wheat is 2.5 kg of milk. So, I can make wheat much cheaper than the second person.

But then if I look at the cost of making milk - for me, it is let us say the cost of making 1 kg of milk. This will be 10 kg of wheat whereas, for the second person the cost of making 1 kg of milk - in this case is 1 divided by 2.5 is equal to 0.4 kg of wheat. Now, what we are seeing here is that, if I can make wheat at a cheaper cost it would also mean that I would be making other things at a much greater cost.

So, there is always a comparative advantage between two or more people. And trade makes everyone better off by permitting people to concentrate their resources - to concentrate their time, into making things that they have the highest comparative advantage in. And when we go on doing things that we have the highest comparative advantage in, with time we also specialise. We also develop means to make things even cheaply, and the benefit of making all these things with greater efficiency ultimately goes back to the society. So, trade is something that can make everyone better off.

We also saw that markets are a good way of organising economic activity. What is a market? A market is a place where buyers and sellers come together, and there is a democratised decision making. So everybody is making his or her own decisions based on his or her own benefits. In a market - when you go to a market you will ask the question ok, I want to get a tub of ice cream - where can I get it at the cheapest rate -the best quality at the cheapest rate. When you make such decisions you go to a seller who is providing things at better quality and at a cheaper rate. And when you buy the things from that seller, you are actually promoting that seller to make more and more things at better quality and at cheaper rates.

Similarly, in the case of a market there is no third force that is making these decisions about whether I should have ice cream or whether I should have chocolates. I make decisions based on my own free will and all these decisions of different buyers and sellers in the market are reflected in the prices that we see in the market. So, market makes it very easy for buyers and sellers to make decisions based on the prices. And so, markets are a very good way of organising the economic activity.

Moving further into this topic of interactions another principle is that governments can sometimes improve the market outcomes. Now, the question is, if markets are a very good way of organising economic activity, do we need a government? Why should there be a government? Why should government be making certain decisions? The economic principle here is that governments can sometime improve market outcomes - because the market by itself may not always result in the most optimal solution.

What is a government? A government is the group of people with authority to govern a country or state. The important point here is authority. Authority means legitimised power. So, these are the group of people who have the power and this power has been given to them through certain legislations. They have a legitimate authority to govern a country or state. When that happens they can make certain decisions. For example, if you want to go into a market or say you are a seller and you are making say ice creams. In a theoretical market you would want to maximise your profit and to do that you want to make things at the cheapest possible way. So, you are putting a lot of money into innovation - you are putting a lot of money into getting the best machines. But then once you have invested a lot of money into your factories, somebody comes and burns your factory. Now, if such a situation arises would you want to put your money into all these innovations? The answer is no. Why? Because you are not sure whether your investments would give you a profit or not.

You are working for the profit - you are working in a self interest, but your self interest will only get fulfilled if you have a proper law and order that ensures that you will get your rewards. Who will ensure this law and order? That is the role of government. The government improves market outcomes by ensuring that the fundamentals for the working of the market are there.

So, how does the government improve the market outcomes? The need of government is for enforcing rules and maintaining institutions that are a key to the market economy such as police, judiciary, and so on. If you have a good law and order system with good police, good judiciary, you will have much more faith, you will have much more confidence that the money that you are putting into innovation - that you are putting into making your factory will not go down the drain. So, the first need of government is to enforce rules and one such rule is that nobody has the right to destroy another's property. The government makes these rules and the government enforces these rules.

The government also maintains institutions because it is not enough that you have a rule. You also need to have an institution to enforce that rule. If you have a law, but you do not have police, if you do not have judiciary, then the law will just not work.

So the government not only makes the rules, but it also maintains the institutions that will play a role in enforcing these rules.

Similarly, the government enforces property rights. Now, what are property rights? The ability of an individual to own and exercise control over scarce resources, to own and exercise control. And this demands that thefts be minimised or obliterated. Property right is the ability of an individual to own scarce resources. Scarce resources could mean things like land or things like capital. You should have the power to own land, you should have the power to own capital, then and only then will you be able to have the power to set up a factory.

You wanted to make ice creams cheaper and you wanted to make ice creams with good quality. For that you need to have an industry, but you will only be able to have an industry, if you have the power to own land and the power to own capital.

Now, suppose in a society there is a rule that nobody will own any land or any capital, only there is one king who will own all the land and all the capital. In such a society - if you live in such a society, you will not be in a position to set up the factory. So, property rights give individuals the right to own the scarce resources and not just own but also to exercise control over those resources.

Suppose you live in a society in which there is a rule that land can only be used for agriculture, it can never be used for setting up an industry. So, even though you have the land - even though you have the capital, you will not be able to set up the industry.

So, for the working of the society or for the working of the market - so that you are able to produce things cheaply and in good quality, you not only require an access to the resources - you do not only require an ownership of the resources, but, you should also have the right to exercise control or to do something with your resources. And, government provides enforcement of these property rights - the right to own and the right to exercise control over the resources. That is the need of the government. If you do not have rules, if you do not have property rights, the market cannot function.

At the same time the government is also required to increase efficiency of the market by addressing market failures. What is market failure? A market failure is a situation in which a market left on its own fails to allocate resources efficiently. Now, what does that mean? The utility of market is that it permits allocation of resources, by choosing those sellers that are making things at a good quality and at lower cost. When you buy something - when you buy your tub of ice cream from a seller, who is selling it with a good quality and at a cheaper cost you are providing more and more resources to that seller or to that producer, so that he or she can make more and more of these things at cheaper cost and with a good quality.

Now, if you have a market and it is not able to allocate these resources, which means that there is a market in which you do not know who is the seller who is providing things cheaply and at a good quality, then this market will not be able to function. And so, a situation such as this would be known as a market failure. Market failure is a situation in which a market left on its own fails to allocate resources efficiently. Why would we have such a situation?

There are things such as externalities that can result in market failures. What is an externality? An externality is the impact of one person's actions on the well being of a bystander. The bystander is not doing anything - the actor is doing something, but his action is having an impact on the bystander. This is known as an externality.

A very good example is pollution due to the use of automobiles. Now, if somebody is driving a big sized SUV, then this person is not just driving the SUV and fulfilling his or her own requirements, but is also polluting the environment - because this SUV is giving out a lot amount of smoke. Now, this smoke will not just impact the automobile driver - it will impact the society in total because when the air is polluted everybody is impacted. And so, this pollution is in externality, because the action of an actor or the action of a doer in choosing to drive a vehicle with which is giving out lots of smoke, is putting an impact on a bystander who has got nothing to do with this decision.

And things such as externalities may result in market failures. Why? Because the driver of this vehicle - the driver of this polluting vehicle is imposing a negative cost on other people - and he does not have to pay for those costs. So, for instance if I get ill because of air pollution, then I will have to pay my own medical bills - that person who is driving that polluting vehicle will not come and give me money to pay my medical bills.

If there was a mechanism to internalise this externality, then the results would have been very different. For instance if the society said that ok, if you want to drive a vehicle that is resulting in pollution, you will also have to pay for taking care of the health of all those people who are impacted by your decision to drive this polluting vehicle. If such a situation was there then this person who who is driving this vehicle would have thought of his decision in a very different way - because remember that this person is also a rational person. He wants to maximise his or her own utility - which means that he or she wants to minimise his cost and maximise his benefit. And there is nothing like giving the cost to somebody else.

If this person had to pay money to all these different people, who were impacted because of the pollution he would have thought ok, let me just get rid of this vehicle and get something that does not pollute so much. So, an externality can result in a market failure because, the person who is making the decision is not paying the full cost. An externality can also be a positive externality - a positive externality is say things such as vaccination.

So, if you choose to vaccinate your children, then you are not just protecting your children, but you are also protecting the society. Because, the pathogens will not be able to infect your children, multiply in their bodies and then spread to other children. So, vaccination is a positive - it has a very big positive externality.

Now, if you only had to protect your child and if the society does not provide you with an incentive for the benefit that the society is receiving, then your level of commitment to vaccination might not be that great. But then if the society says that ok if somebody is vaccinating his or her child, then because the society is getting a benefit, so let us as a society subsidise vaccination. So, if you have to pay a lower cost - if you get an incentive - then because people respond to incentives you would have looked at vaccination in a very different manner.

So, externalities may result in market failures because the cost or benefit of doing something is not coming back completely to the doer. And the government can address this market failure by giving out a mechanism to address these externalities, by say subsidies or taxation. And in that way the government will aid in increasing the efficiency of the market.

Because in that case the market - again remember that the market is a mechanism for the most efficient allocation of resources, for the benefit of everybody. Now, if the action of doing vaccination is benefiting the society, then there has to be a mechanism to incentivise vaccination. If pollution is impacting the whole of the society negatively, there has to be a mechanism to reduce the allocation of resources in pollution. And the government may set up a mechanism to internalise the externality so that the allocation of resources becomes much more efficient.

For instance in the case of pollution due to vehicles the government may increase tax on petrol or diesel, or may even tax the selling of these vehicles. If there is a tax on petrol or diesel or the vehicles, this taxation will increase the price of using these vehicles. Increasing of this price will result in an incentive, it will induce people to do something. And what will be that something? It may incentivise people to use car pooling. Because the cost of transportation has increased so people would say ok four of us are going to the same location, why do not we use just one car. Or it may incentivise people to take public transportation because the cost of using your own vehicle has increased. So, there would be a certain section of the society who would ditch their vehicles and move towards public transportation, or which may incentivise people to live closer to the workplaces - so that they do not have to buy such a large amount of petrol or diesel - or to shift to fuel efficient vehicles. Especially if these fuel efficient vehicles also get a subsidy.

So, the government may increase taxation on the polluting vehicle and the government may provide a subsidy to those vehicles that are non-polluting or to shift to hybrid vehicles or electric vehicles for the same reason. Left to themselves without the government people may keep on driving the polluting vehicles, since the quantum of the harm gets diluted due to the externality - because you do not have to pay for the health of all those people who are getting negatively impacted because of the pollution.

But if the government internalises this externality by increasing taxation, then some portion of this externality will get internalised. And this will act as an inducement for people to go for carpooling, public transportation, living closer to the workplaces, or shifting to more fuel efficient vehicles or hybrid vehicles or electric vehicles.

So, this is a role of the government. By using these mechanisms of taxation and subsidies, the government addresses market failures and increases the efficiency of the market.

Another mechanism of market failure is market power. Now, what is market power? Market power is the ability of a single economic actor, or a small group of actors to have a substantial influence on market prices. And often this substantial influence is a disproportionate influence - the ability of a single economic actor or a small group of actors, to have a substantial influence on the marketplace - on the market prices. Good examples are monopolies - the owner of a single well in a village where there is a drought. Let us consider that there is a village that is suffering from a drought condition and there is only a single well in that village. Now, the owner of that well - because he sees that there is a huge demand - so, this owner might charge anything for taking out water from this well. If the owner charges at a disproportionate rate, then it will not be a benefit of the society. This will result in a market failure, because it is leading to an inefficient allocation of resources.

And such a situation will go on propagating itself, if the government probably does not interfere. Now, how can the government interfere? The government can do a number of things. The government can say ok, even if you have a single well in a village there is a cap that you can charge. So, for instance the government might say that ok, for one litre of drinking water you cannot charge more than 15 rupees. If this situation arises then even those people who did not have a very large amount of money with them - they would have access to water. Or the government might do another thing. The government might try to break this monopoly, by say digging up a well from government funds. Or the government might give out a subsidy - the government might start a program that would say that ok, if somebody wants to dig up a well we will provide so much amount of capital. Or so much amount of money to each person to incentivise more and more people to start digging wells. Or the government might out rightly say that ok, because the situation is so bad - because this person is charging so high, let us nationalise this well. So, that this well is now no longer a property of this particular individual, it now belongs to the government - it belongs to the society.

So there are a number of things that the government can do in these situations, where you have a single economic actor or a small group of actors that are having a substantial influence on the market prices. They are having such a huge influence on market prices that it is not to the benefit of the society and it is not an efficient way of allocating resources. The government may break these market powers - the government may break these monopolies and increase the efficiency of the market.

Another thing that the government can do is to increase equality. We saw before that the society makes a tradeoff between efficiency and equality or equity. So, you can put your resources in such a manner that you maximise the production of goods, or you can also do things to ensure that everybody has a decent share of the pie. If you only wanted to increase efficiency the society might say ok, let us give all the resources to a few people who are doing things well. And, in that case they will have all the money, they will have all the power to do everything - anything and everything and rest of the people would live a life of poverty. Or the society might decide that ok, efficiency is important, but equality is also important; equity is also important. So, the society might say that even though there are certain people who are not doing things with the highest efficiency, but they also have the right to live. They should also have access to sufficient amount of food, sufficient amount of nutrition, sufficient amount of clothes, sufficient shelter.

When the society decides this - the implementation of such a policy comes to the government - because the government has the power to influence these decisions and to implement these decisions of increasing equality. The market by itself may not ensure sufficient food, decent housing and adequate health care to all.

If you just left it to the market the market might say that ok, we want maximum profit and so, we are only going to provide health care to those people who can pay for them. Or we want to maximise the profits out of vaccines. Now, vaccine is something that has a positive externality, because not only the person who is vaccinated is protected from the disease, but the society in total also gets protection because of herd immunity.

Now, if there is such a situation then the government might step in and say that ok, we cannot let things go on like this and we need to emphasise the quality. And so, we are also going to provide vaccines to those people who cannot afford them because the society benefits if those people also get access to the vaccines. So the market by itself may not ensure sufficient food, decent housing and adequate health care to all.

But the government may chip in - the government may provide for all these different resources. Now, equality is the property of distributing economic prosperity uniformly among the members of the society. And this is also a role of the government. There are two major ways in which government impacts these market outcomes. And these two ways are price controls and taxation. Price control means that the government may set up a price floor. A price floor says that this is the minimum amount that you have to pay to get this good or service, and a good example is the minimum support price that the government sets for food grains. When we have a price floor the government is saying that we cannot let the society exploit the farmers. And so, there is a minimum amount that needs to be paid to the farmers, so that they are able to carry on their cultivation, they are able to pay for say water, pay for fertilisers, pay for insecticides and so on.

The farmer should also be able to make all these payments and still retain a decent amount of money to meet the needs of his or her own family. And so the government may set up a price flow - this is the minimum amount that you need to pay to the farmer to get these food grains. In certain other cases the government may set up a price ceiling - this is the maximum amount that you can charge to a person. When you talk about things such as the rent control act, the government says that ok you cannot charge exorbitantly for providing accommodation to people, there is this maximum amount that you can charge - this is a price ceiling.

So, the government may use these price controls to put up a price floor or a price ceiling or the government may even come up with minimum wages. This is the minimum amount of money that you need to pay to a person to make use of his or her labour or services. This is the way in which the government can impact the market outcome.

Another way is taxation. Taxation can be direct taxation, indirect taxation or even Pigouvian taxation. We can even talk about negative taxation which is the subsidies. Now, direct taxation is a taxation that is directly taken from the person and in a number of cases this is, or say a very good example is, the income tax.

Income tax is taken directly from the person who is earning this income. Indirect taxation on the other hand is taken indirectly from those people who are making use of certain products. So, when we talk about sales taxes these are indirect taxes. We also have Pigouvian taxes. A Pigouvian tax is a tax that is not put up to earn revenue for the government, but is there to change the behaviour of people. A very good example is the tax on cigarettes or taxes on polluting vehicles. This is a tax which is not primarily meant to increase the revenue of the government, but is meant to change the behaviour of the people. So, this is also another way in which the government may impact the market outcome. So the government may act through price control, price floor, price ceilings minimum wages or through taxes and subsidies which can be direct, indirect or even Pigouvian.

Now, because the government is impacting the market outcome through these interventions - and we have seen before that markets are generally a good way of organising the economic activity - so, these interventions have to be used with abundant amount of caution. And, we will see how the government or the society may make use of these interventions for conservation purposes.

Next, let us have a look at the workings of the economy. The first principle in the working of the economy is that a country's standard of living depends on its ability to produce goods and services - that is the productivity that the country has. And productivity is defined as the quantity of goods and services that are produced from each unit of labor input. So, basically what this says is that if you have a country, if you have a society and the society is very highly efficient, it is able to produce a large amount of goods and services. Who will make use of these goods and services? The answer is the society itself. So, if you make more and more of goods and services, you increase your standard of living. Because then, everybody has access to more food, everybody has access to more comfort, everybody has access to more health care and so on. So, if you want to raise the standard of living of a country or a society the primary way of doing it is through increasing the productivity of that country or the society. We can understand it in this way that more production leads to more goods and services that are available to the society. More goods and services available to every person of the society means, a higher standard of living.

So, a country's standard of living depends on its ability to produce goods and services, which means productivity. Which means that if you want to raise the standards of living you have to raise productivity. And how can you do that? You can do that by these three ways.

You can provide education to people. By providing education you can shift certain people who are working in the primary sector or the labor intensive sector, into say an information sector. Now, in the information sector because there is a greater demand for those goods so, the persons will be earning more. And earning more would raise the standard of living. Or through education you can give people access to means that raise their efficiencies. So, in place of say doing all the work manually a person might shift to using machines. But then if a person does not know what a machine is or what sorts of machines can be used, or how can they be used the person might not be that incentivised to use those machines. Education provides people with the means to use these new technologies.

So, to raise productivity you should give or the society should give education to people. But just education is not enough. There should always also be a provisioning for the tools of production of these goods and services. So, for instance as a farmer - through education I have come to know that ok, I should be using tractors. But, then if my society just does not have any tractors how will I use these tractors? So, not only is education important, but you should also have access to these tools and equipments.

So, the society needs to put in certain amount of money for the production of these goods, which are known as the capital goods. You need to have production of tractors, you need to have production of computers, you need to have production of machines, you need to have production of lathes and so on. So, to increase productivity you provide education, you provide tools and equipments for the production of goods and services.

And also you need to put in money into the production of technology, which means that there has to be innovation going on in the society. So, for instance if all the farmers have access to education, and they have access to tractors. But, then it is also possible that you could tweak your tractors in such a manner that the efficiency goes on increasing even further. How will you come up with such tweaks? Through innovation, through technology. So, technology is also something that needs to be provided to increase the productivity of people. And this productivity will in turn raise the standards of living of the society.

Another principle of economics is that prices rise when the government prints too much money. The rise in prices is known as inflation. Inflation is an increase in the overall level of prices in the economy. Now, prices can be understood in two terms, one is in terms of money and the second is in terms of other goods and services. So, let us consider that there is a society which has only 2 goods.

The good 1 is wheat and the good 2 is milk. So, in this society we have only 2 goods, for the sake of understanding. And the wheat is being sold for say 30 rupees for 1 kg. And the milk is being sold for 60 rupees for 1 kg. Now, the thing is these are the levels of prices that are prevailing in the economy at present.

So, the level of prices: for 1 kg of wheat you have to pay 30 rupees, for 1 kg of milk you have to pay 60 rupees. Now, suppose the government prints too much of money. In place of having 100 rupees in the pocket of everybody the government has printed so, much of money that now everybody has 200 rupees. Let us think that just by magic everybody has 200 - has twice the amount of money that they had previously. Now, what will happen? In this situation the price of everything will increase. In place of having - we can also understand it in by saying that the price of 1 rupee is equal to 1 by 30 kg of wheat. And the price of 1 rupee in terms of milk is 1 by 60 kg of milk.

Now, if the money has just doubled magically because the government has printed so much amount of money, the price of one rupee will go down. So, in place of having 1 by 30 kg of wheat, now person might demand much more amount of money or much less amount of wheat. When the government prints too much of money the value of money decreases, because here again in the society the value of anything is determined by the demand and supply of that thing. If the supply of money has gone up, the value of money will go down. Now, if the value of money will go down, it would mean that for every rupee you will get less amount or less quantity

of goods than you were getting previously. Because earlier the value was large, so in exchange for money you were getting a larger quantity of goods; now the value has gone down.
So now you will get a smaller quantity of goods and so, more money is needed to purchase the same amounts of goods or services which increases the price of goods and services which leads to inflation.

So, the primary cause of inflation is that the value of money has gone down, because the government has printed too much of money. How will this show up? This will show up in this manner that earlier for wheat, you were paying 30 rupees for 1 kg. Now, you will have to pay 60 rupees for 1 kg. And for milk earlier you were paying 60 rupees. Now you will have to pay 120 rupees for 1 kg. The level of prices have gone up because you now have access to double the amount of money. But this is known as a notional increase in the prices. This is notional because this is only there in name. Because, if you look at the society earlier you would find that milk is worth twice the amount of wheat. So, for one kg of milk earlier - let us put it in writing. In the earlier situation for 1 kg of milk, you were getting 60 rupees, which is equivalent to 2 kg of wheat. This is in the earlier situation. But, then after inflation what happens?

After inflation we have a situation that 1 kg of milk is now worth 120 rupees. But, the price of wheat has also gone up. So, for 120 rupees you will get 2 kg of wheat. Earlier the price of 1 kg of milk was 2 kg of wheat, after inflation the price of 1 kg of milk is 2 kg of wheat. So, there is no actual change in the prices. The change in prices is only in terms of the rupee value or the money value, which is because the amount of money that is there in the society has gone up to such an extent that the value of money has gone down.

But, the value of all other things in terms of other goods and services, they will remain the same. So, the principle of economics here says that prices rise, when the government prints too much of money. This is something that we need to keep in mind whenever we are talking about inflation.

And then the last principle is that the society faces a short run tradeoff between inflation and unemployment. The question is should we have inflation in the society or not? The answer is slight amount of inflation is good for the society. Why is that? If you have more money in the economy - why is there more money in the economy? Because, the government is printing more money. If there is more money in the economy people will spend more. When people will spend more so, in the short run there will be a more demand for goods and services. Because, earlier you were having only 100 rupees so, you were spending 100 rupees. Now, that you have 200 rupees right away you will think ok, I have more amount of money let me buy more stuff.

Because, here again rationally you are trying to maximise your utility. And, because you have more access to resources you want to have more goods and services. So, in the short run more money in the economy will lead to more spending, which is more demand for goods and services. More demand for goods and services in turn would lead to inflation, because there is a rising cost.

So, there is now more demand for milk and so, the cost of milk rises. But, then more demand for goods and services would also mean that now the milk man would want to have more and more of the produce. So, the milkman would now try to have more cows, would try to hire more people, he would try to hire more amount of goods in terms of capital goods. And so, the more demand for goods and services would also lead to more hiring of workers to meet the demand. Now, if you have more hiring it means less unemployment. So, more money in the economy led to more spending. More spending led to inflation, but it also led to less unemployment. So, more inflation means that more people have jobs. Now, a society always wants to have people who have jobs, and inflation is the price that the society needs to pay to have those jobs.

So, this principle of economics states that the society faces a short run tradeoff. Now, this is in the short run because in the long run, because of the actual prices - here we are only talking about the notional prices as we saw in the previous slide. But, the actual prices remain the same. So, in the long term things go back to the normal, but in the short run there is this tradeoff between inflation and unemployment. And this also leads to business cycles which is the fluctuations in the economic activity, such as employment and production. So, in the short run, when the government prints more money, there is inflation which leads to more employment. And, this employment also leads to more production. But, then because of inflation after a while people are negatively impacted. And so, the government then shrinks the money back, it shrinks the economy and with that the level of inflation comes down, but together with that the employment and production also come down. So, this is a short run tradeoff that the societal always faces.

If we were to plot a curve between the rate of inflation and the unemployment, we would get the Phillips curve. The Phillips curve shows that if you have higher inflation, you have lesser amount of unemployment. If you have lower inflation, you have more amount of unemployment. So, this is a choice that needs to be made at all times.

So, these are the 10 principles of economics that we saw here.We will revert back to these principles again and again in this course and we will also try to understand: what is the impact of these principles on conservation of natural resources?

So, that is all for today. Thank you for your attention. Jai Hind!