

## Episode No- 27

### Beneficial Impact of Climate Change

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#### Preview: -

Generally we have negative perception about climate change and global warming and up to certain extent it is natural to be so. But every coin has two sides. Most of the impacts of climate change are negative and harmful but remember there are certain positive and beneficial impacts too. In this episode we shall talk about all these benefits that create curiosity among all of us.

Artists & Participants:-

**Akash:** -----*Student of a school (Age 15 years).*  
**Vani:** ----- *Student of 6/7th class (Age 12 years)*  
**Mummy (Asha):** ----- *House wife (Age 42 years).*  
**Papa (Prof. Shantanu):** -----*College Professor (45 years).*  
**Mr. Sehagal:** ----- *Climate Scientist (50 years)*

#### Scene -1

**(Akash and Vani are on outing along with their parents. Birds noise/singing. Children are playing with noise and loud laughter etc. People are talking here and there with some laughter effect)**

**Asha (Mummy) :-** Please don't through waste and refuge in the park. It is not good to leave the remains here and there. Keep it in the trace begs..... understand.

**Akash: -** Mummy please let's have some freedom here! Though Papa is a Professor but you are giving lecture and that too in the park (Laughing).

**Mummy:-** O.K. My son. Look at Vani.....She is collecting all the left over. You can help her.

**Professor Shantanu (Papa) :-** Hello ! Akash....Listen your mummy. After that we shall have a cricket match....Ladies v/s gents..... (Laughing).

**Vani:-** Vow! That will be great. Do you remember.... Last time we defeated you.

**Akash:-** How can you say like that..... This time we shall win and defeat you.....

**(Entry of Mr. Sehagal)....** Hello... young friends! Why are you fighting? You are now grown up. But it is natural to have a tussle between brother and sister (laughing). Good morning Mrs. and Mr. Shantanu. Vow..... Happy to see you all here. What a good thing that you all are enjoying your weekend (Laughing).

**Prof. Shantanu:-** Good morning Mr. Sehgal! What a surprise. Welcome friend. Surprise to see you. How are you?

**Mr. Sehagal:-** Namaskaar! I am fine and what about you. Hello young friends.... You were fighting on some issue.

**Vani & Akash:-** Good morning uncle. What a surprise to see you here.

**Prof. Shantanu:-** Mr. Sehagal you were talking about tussle. That is not new..... a constant mechanism of mental exercise between them(laughing). Come.... Come...

**Akash:-** Uncle ...uncle.... Do you like cricket?

**Mr. Sehagal: -** Oh...no.... Young friend, I have my walk and now got tired. Just want to sit to enjoy your match.

**Asha:-** Hello Mr. Sehagal! Nice to see you.

**Vani:-** Uncle don't worry. Please take seat. I shall serve you some tea. Mummy brings from home in the thermos.

**Asha:-** Yes Beti... that will be good. Have a cup of tea for Mr. Sehagal

**Mr. Sehagal:-** Last week I enjoyed cricket match in Dharamshala.

**Prof. Shantanu:-** You visited Dharamshala just to enjoy cricket match.

**Mr. Sehagal:-** Yes Professor. It is good to have some adventure in our lives.

**Akash:-** Papa... Can we too have some adventures?

**Prof. Shantanu:-** Let the Monsoon pass, then we shall plan outing for some adventure.

**Akash:-** Oh! Weather is unpredictable. Have you not heard about heavy rain in Utrakhand?

**Mr. Sehagal:-** Vow.....so intelligent reply. He is raising question on the climatologists (laughing). Weather changes with time and it is different in nature in different season. It does not change just for the sake of change.

**Akash:-** Uncle, my purpose was not to raise question on your profession.

**Mr. Sehagal:-** My young friend..... The only negativity is that we see climate change in negative perspective. Nobody is caring about the positive impacts of it.

**Vani:-** Uncle....your tea..... I have never heard about positive impacts of climate change. Even nothing has been taught in our school about it.

**Akash:-** Yes uncle.... Vani is right. But interesting to know about it. Please can you tell us something about it?

**Mr. Sehagal:-** Why not.... I shall narrate it with some examples. But....but.....first let me have my tea (Laughing).

**Vani:-** Uncle ...you enjoy your tea with papa and mummy. In the meantime we can have a round of the park.

**Akash:-** Didi hurry up let we can have a race.... Both are running

*##### Sound Effects of a race / footsteps #####*

**Asha:-** How is tea? Sugar is O.K. or will like some more. I got it in spare.

**Shantanu:-** Mr. Sehagal...I participated in the International Seminar that was held in Dehradun last month. It was on Climate Change. It is my favourite topic and I too participated in the open discussion. Many experts were of the views that it is happening and nobody can deny it.

**Mr. Sehagal:-** Yes.... Many people and experts are now expressing their views openly on it. But still we are far away from the reality. It is very difficult to find out some good examples that have created positive impact. Few students are doing research on it with me. They also briefed me on it from time to time.

**Asha:-** Mr. Sehagal...Do you think there is some reality in climate change? These days it is becoming difficult to have fresh air to breath. I have read somewhere that crops production is going down. Temperature is rising day by day. Winter season is limiting to few months.

**Prof. Shantanu:-** Moreover the concept of four seasons may not be likely anymore.

**Mr. Sehagal:-** Both of you are right. But here I would like to say that something new is happening. These were not there earlier. We can see some positive impacts on our lives. For example the life cycles of some crops have increase.

**Prof. Shantanu:-** In that seminar, some scientists were talking about the positive impact of climate change. Even production has increase in some cases. In colder regions it will be possible to grow crops in future. For sea travel and sea trade, it is going to be a boon. It will help in trade and travel through sea routes.

**Mr. Sehagal:-** You may be thinking about all these....What a foolish talk? They say what is in their mind. It is not possible what they are saying.

**Asha:-** Mr. Sehagal...Do you think it is really going to happen? It will be magic if it happened so.

**Mr. Sehagal:-** Don't be surprised. There is a need to give thought on it..... Look.... The children have been back.... This discussion is equally important for them to know.

**Akash:-** Uncle ....we shall also participate in your discussion.....

**Vani:-** Vow.... Uncle.....We meet our class teacher on the track. He is very regular in his morning walk and told us that he take nine to ten rounds daily.

**Akash:-** Vani... you got tired just in one round. Very weak and fragile girl (Laughing).

**Vani :-** No...no... I am not tired and can beat you in a race (Laughing).

**Asha:-** O.K. Children, please listen carefully. This is not your fault but it is all due to air pollution.

**Mr. Sehagal:-** You know well about the negative impacts of climate change. I shall tell you some good impact that we are feeling. You might have heard about untimely death during winters. But now the duration of winter reducing and temperature is rising. Thus is less causality. Earlier some areas were getting less rain fall but now they are getting sufficient rain. This change in rain pattern is all due to climate change.

**##### All are laughing #####**

**Akash and Vani :-** Mummy.....Papa..... Look that side.....dark clouds.....

**Mr. Sehagal:-** An instant example of climate change (Laughing).

**Asha:-** We have to pack our items. Rain is expected very soon.

**Prof. Shnatanu:-** Yes no.... no ...more delay.

**##### Sound Effects of thunder storm #####**

**Scene change.... Dust storm...rain..... Noise all round in the park.... Cars noise/horns etc.**

**Asha:-** Please collect all the items..... And better we should move to our car.

**Shantanu:-** I am going to take the car from the parking.....be hurry..... Mr. Sehagal please comes with us.

**Mr. Sehagal:-** Good advice(Laughing)... Our discussion too is incomplete.

**Akash:-** All of can go ahead.... I am bringing all the items. Vani will help me.

### Scene – II

**All are sitting in the drawing room. TV is running and some Background Music etc.**

**Shantanu:-** Mr. Sehagal, please feel comfortable.

**Mr. Sehagal:-** I am fine....

**Akash:-** Papa ....papa...we...want to know about the positive impacts of climate change.

**Mr. Sehagal:-** That is why I am here. Your papa was telling about the international seminar on climate change.

**Prof. Shantanu:-** Mr. Sehagal, it was difficult to believe on them but they put their views with some research data. Through a model on climate change, it has been guessed that there will be an increase in crops production due to climate change.

**Akash:-** What are you saying. We had heard that climate change harm the crops.

**Shantanu:-** Some experts presented facts that in general insects infection aggrieved with rise in temperature and some crops diseases caused more harm due to climate change. But under some circumstances their effects can be neutralised.

**Akash:-** But our teacher had told us that change in climate is very harmful to food crops.

**Asha:-** There are some facts to be known and to be understand. Global warming is a natural phenomenon. It causes and brings change in the climate. There is a simple funda to understand and know that climate change bring some positive impact.

**Mr. Sehagal:-** You are right madam. Due to global warming temperature will rise and it causes excess of water evaporation and vaporisation. This humid air moves towards hot and dry land and caused heavy rain. Amazon forests are very good examples.

**Akash:-** Greenery in desert ...Vow ...very interesting.

**Vani:-** The impossible is possible due to global warming (Laughing).

**Asha:-** I think, more light should be spread about it.

- Mr. Sehagal:-** Yes...you are right. For example, increase in carbon di - oxide level in the atmosphere is good for plants. Increase in carbon foot print can also be of some use as it will increase crops yield.
- Vani:-** Vow...How is it possible?
- Mr. Sehagal:-** This is because increase in carbon di oxide concentration will trigger the growth of plants. Thus global warming will be helpful to change the ecosystem of the Planet Earth.
- Prof. Shantanu:-** Do you know? Change in Ice age was also due to global warming. The ice got melted and paved conducive conditions for plants and animals.
- Mr Sehagal:-.** Well Professor. Available data suggest that earlier the Earth temperature was comparatively higher than what is it at present. The higher and warmer weather gave birth to new species.
- Asha:-** This means that the present situation of global warming can brings many positive changes. And this will catalyse the mechanism of evolution.
- Akash:-** Mummy what do means? This means the present colder conditions on the Earth are comparatively less favourable for Evolution.
- Mr. Sehagal:-** The temperature on our planet Earth is comparatively very less than what was it earlier. According to Geological time frame it was about 22 degree Celsius at that time but now it is about 15.5 degree Celsius.
- Prof. Shantanu:-** Even we can't deny the rise in water level of seas. As this is a slow process and it is possible for us to get adjust with the problem.
- Mr. Sehagal:-** Examples are given from historical facts. You may be aware that rising sea level had submerged many coastal regions in the world.
- Asha:-** What are you saying Mr. Sehagal? Is it so? But I think there can be differences between experts on global warming. Most of the people are of the views that it is ultimately going to harm our planet. There is need to work on it to reduce its impacts on our civilisation.
- Akash:-** These days global warming is a hot topic. One can see it on TV shows and can read it in newspapers. Last Monday a lecture was held in our school. It was told that our Earth is warming day by day. My science teacher is very much concerned about the problem of global warming.
- Vani:-** Akash you are very much right. Sir was telling that scientists are working how to face the problem of global warming and how can we save our Earth from its side effects?
- Prof. Shantanu:-** Yes my daughter. Conferences and seminars are held on it from time to time to share experiences. New guidelines are issued by the world bodies. Deadlines are set to achieve the assigned target of carbon emission. Lists of action have been prepared to face the problem of

global warming. Efforts are on to trace and find out the real culprits of the problem so that they can be punished.

**Mr. Sehagal:-** Yes Professor Shantanu.

**Akash:-** Uncle...uncle....can I have my view on it. When I heard that winters are going to be shorter, it makes me happy (Laughing).

**Mr. Sehagal:-** Why is it so?

**Vani:-** Uncle...Akash don't like cold and to take his bath in winter..(Laughing).

**Mr. Sehagal:-** And what about you Vani?

**Vani:-** I like to take my bath with hot water. What a good feeling to warm yourself with electric heating system and quilt.

**Mr. Sehagal:-** This is O.K. But too long summers are also not good. Temperature is rising and in Delhi it touched 48 degree Celsius this summer.

**Akash:-** Vani Didi didn't need to use the heater. There is enough Sun heat to warm it in the water pipes (Laughing)..... And our cloths get dry very soon.

**Vani:-** In summer we use Air-conditioning system. A lot of power consumption means electric bill on higher side. People become lazy to go outside. Akash generally avoid outing in summer. He is very lazy and tries to avoid going to school with lame excuses. (Laughing).

**Akash:-** And what about you?

**Prof. Shantanu:-** Children you have diverted the topic. Better we should speak reasonable.

**Mr. Sehagal:-** If we take last ten years, I mean since 2009 the average temperature of our Earth has risen. It is clear and there is no doubt on it, among the experts of the world. But how much it has risen and what will be the consequences is a great question to be answered.

**Prof. Shantanu:-** (Laughing) I think you have answered it.

**Mr. Sehagal:-** I shall try to answer it. Data show that during last 150 years the average temperature has risen 0.8 degree Celsius. If global warming is continuing till the year 2080, even then we are safe. It is estimated that the Earth temperature will rise by 2.2 degree Celsius. It may not be so serious, what we are thinking.

**Akash:-** Who can say.....we may be alive or not.

**Vani:-** What will be my age by that year?

**Prof. Shantanu:-** Children don't take it lightly. Listen carefully what uncle is saying?

**Vani:-** Uncle.... It is something new for me. What we have been taught is different?

**Asha:-** Mr. Sehagal can you please explain with some examples so that children can have clear idea of the problem.

**Mr. Sehagal:-** Yes...I am coming on it. Children you will be surprise to know that global warming is going to be boon for sea voyages.

**Akash & Vani :-** Why and how it is so?

**Asha:-** What a contrast? For land global warming is curse and for seas it will be a boon. How is it going to happen so?

**Mr. Sehagal:-** Here I am talking about trade through sea routes. For traders it is going to be a boon. You will be surprise to know that more ships are passing through Northern sea routes these years.

**Akash:-** Uncle! How is it going to be helpful?

**Mr. Sehagal:-** See my young friends.... Earlier the sea route through the Arctic Ocean was generally opened for three months for trade. But global warming make it possible to keep the route open for longer period and hence more sea trade.

**Vani:-** But how is it going to happen?

**Mr. Sehagal:-** On thirty degree Celsius rise in temperature, the snow melts to make the route open for longer period.

**Vani:-** Uncle....Arctic is the same place, where Polar Bear found. So cute.... to see them...

**Mr. Sehagal:-** Due to snow melting, the polar bear and other Arctic animals get more food to survive and flourish. This is very positive for them. As the sea route through Arctic is shorter than the traditional routes, it is very beneficial for traders to have good profit.

**Akash:-** But.... Uncle the ships can have their route through some other routes also. What is needed to follow the Arctic route? Why profit at the cost of our Planet Earth and its environment?

**Prof. Shantanu:-** My son...Do you know the Northern Sea route is about 6000 kms shorter than the Southern Sea route. Lots of saving in time, manpower and fuel. Ships can have more rounds to transport goods from one place to other. This is a win win situation for the traders.

**Asha:-** That is your point. But melting of ocean glaciers and snow is not good for our environment.



- Mr. Sehagal:-** You are right Bhabi Ji. Profit and loss can't go hand in hand. Maximum carbon footprints are due to transportation and goods vehicles. If Arctic route become more viable, means more carbon release and more glaciers melting. One of my research scholars has told me that by the year 2030, it will be possible for ships to travel by breaking ice up to four feet in thickness. If the present trend of global warming continue than by 2060 it will be possible for all types of ships to cross the Arctic route.
- Akash:-** Uncle it will be a new wonder of the world(Laughing).
- Prof. Shantanu:-** My dear son, this will not be wonder but a tragedy for our civilisation. Very difficult to assess, what is good and what will be bad? We can't deny the harmful effects of global warming and climate change.
- Asha:-** Good and bad are two side of the same coin.
- Mr. Sehagal:-** There is one more aspect of global warming. One researcher has pointed out that wheat production in the Texas region of America will fall in future. But there has been drastic rise in crops production in the states of Nebraska, South Dakota and North Dakota of America since 1990. Here temperature is rising and production is also rising. This means they are proportionate to each other.
- Akash:-** Interesting to know all these.
- Mr. Sehagal:-** Listen and understand, what I am saying? There are many other factors which influence the crops production. But we can't neglect the climate change and global warming.
- Prof. Shantanu:-** The geography of the region is also responsible to influence the climate and its impacts. If the soil is rich in plants nutrients, it can support the plants and crops even in less rainfall and during drought conditions. In such soil the air can't pierce and evaporate water from the soil. In other words the rate of water vaporisation decreases. The crops use maximum water for their own survival and thus good crops yield.
- Mr. Sehagal:-** You are right in your statement. For agriculture and crops cultivation it is good to keep in mind the soil condition of the region. If we talk about sandy soil, it needs good amount of water and the water get vaporised very soon or it get percolated down to the water table. For grain production this type of soil is not considered good. But sandy soil is good for seeds germination and many plants sustain very well in it.
- Asha:-** I think groundnut is a good example to support your views about sandy soil. It grows well in dry, sandy and humid regions. There is one very popular saying or I can even put it in a formula form.

**More the greenery = More will be rainfall.  
More rain = Means good production.  
Good production = Lead to good economic condition.  
Good economic means = Prosperity  
and finally  
Prosperity pays the road for = Development.**

- Akash:-** Mummy you are great. Very interesting formula.
- Vani :** Yes my mummy is super.
- Prof. Shantanu :-** ( Laughing) Join our college to teach students. They will be impressed with your formula and will offer you the post in teaching.
- Mr. Sehagal:-** I would like to add some examples to make it easy to understand. The situation has been changed in the regions lying towards Northern side. Vegetation and crops production have been improved in the regions of Siberia and Arctic. The Tundra of Arctic is good example of it. This is one positive impact of global warming.  
The temperature has been rising in the Greenland..... But on the other hand the wild lives population is declining and on an average it diminished about 8%.
- Prof. Shantanu:-** You can have many examples of its positive impact but it can't negate the side effects that global warming is causing.
- Asha:-** What you are saying is true..... But we came to know about a new field that has been never highlighted in the world forum. Even children also take great interest in our discussion.
- Akash & Vani :-** Yes mummy. We enjoyed the discussion and learn many new things from the discussion.
- Prof. Shantanu:-** Asha, you are missing something. Our guest is with us since last half an hour and no tea or snack. Please .....
- Asha:-** Everything is ready. .... Please enjoy snacks of your choice. I hope Mr. Sehagal will like these delicious preparations.

**##### Sound Effect of cup and plates #####**

**Akash and Vani :-** Vow ! What a fragrance..... My pat snacks..... Thank you mummy.

**##### Closing part of Music of the Title Song #####**