

Episode-37

The Sweet Fruits of Conservation

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Characters

- Dr Sandip:** Husband. 47 years. Pulmonologist.
Dr Rama: Wife. 46 years. Gastroenterologist.
Nandu: Son. 20 years College student.
Gudiya: Daughter. 15 years. Student. Class IX.
Guest. Dr Pradip: 47 years. Environmentalist. Professor.
Guest. Dr Arti: 47 years. Prof. of Ayurveda

Synopsis

This episode is about the importance of conservation for sustainability of natural resources specially water, soil and air. The episode also deal with the conservation initiative taken in the recent past by the individual, communities and the state. Some interesting incidents relating to conservation taken in the past has also been mention along with message as how we can take some conservation initiatives at own on level

Sounds of utensils being washed.

- Dr. Sandip:** Can I get some breakfast or will the utensil washing continue forever?
- Dr. Rama:** Sundays are always busy and unless the utensils are washed how can breakfast be served? Besides, my friend Dr Arti and her husband Dr Pradip are coming over today. (Aside) Shanta, you finish the washing up. Manisha you start making breakfast while I go take a bath.
- Dr. Sandip:** But I have already taken my bath and am ready for breakfast...can't one of you give me my breakfast....Oh Nandu! Where are you off to so early in the morning? Is your guitar practice still going on?
- Nandu:** No Papa. I was just going to Ravi's house to pick up some notes on Conservation and Life.

Sandip: Do you think Ravi will make better notes than you? And any way Dr Arti and her husband Dr Pradip are due to arrive anytime now...plus it looks like there will be no breakfast for me today...why don't you stay back a bit Nandu...and go to Ravi's house once our guests leave. And why don't you go and see if Manisha has made any breakfast.

Nandu: You have been asking for breakfast for quite some time now.

Sandip: You've been hearing me, haven't you son? So why don't you go and find out if breakfast is ready.

Nandu: Papa, you are a Pulmonologist and have been yelling for breakfast as if you have eaten nothing this morning. You did get rusks and tea. Be patient a little longer.

Sandip: I am a doctor so should I skip breakfast.

Nandu: I'll go and check...and anyway Mummy always says one should eat only when hungry not just because it is time to eat.

Sandip: Son, I agree that your Mum is a gastroenterologist but I am really hungry and that is why I have been yelling for breakfast...by the way I have noted that in the last few days I am being fed in quite a miserly manner.

Gudiya enters

Gudiya: You cannot dispute the fact that Ma knows all about tummies.

Sandip: Ah Gudiya...woke up late today I see. OK...OK... I agree your Mummy knows all about stomachs but keeping a person hungry is not a good idea. Is it? Isn't it an insult to cereals...to food in general?

Nandu: No Papa, it is not an insult...rather it is conservation. Let me start my project with you.

Nandu and Gudiya laugh

Gudiya: Well said Nandu bhaiya.

Sandip: Yeah...yeah...all your conservation efforts and savings...everything begins and ends with me (loudly) Arre Manisha...how far is breakfast?

Music to indicate change of scene. Doorbell rings

Rama: Looks like Dr Arti is here.

Sandip: So soon? I haven't even had breakfast yet.

Rama: Manisha, don't serve breakfast rightaway...we will all have it together.

Manisha: Ok.

Sandip: Ok?? What is OK? Get me my breakfast immediately.

Sound of door being opened.

Rama: Come in. Come in. Namste Dr. Pradip. Arti...how are you?

Arti: I am fine...wow what a lovely aroma...

Sandip: It is only the aroma...the actual food has not materialized on my plate!

All laugh

Pradip: Laughingly...Arre wah Dr. Sandip...how are you? Not had any breakfast yet, I see.

Laughter

Scene changes

Arti: So Gudiya, you are in Class Nine and Nandu, you have entered the first year of college. Good.

Pardip: Nandu, what subject have you chosen?

Nandu: Zoology.

Sandip: Arre Manisha...get breakfast for everyone...and Dr. Pradip with everyone thinking about conservation, my meals are in peril now.

Laughter.

Pradip: I haven't heard conservation being discussed in any household that I have visited. How did you start?

Gudiya: It all began with Nandu bhaiya's project.

Arti: Great! Nandu, your Uncle teaches Environment Science in the University.

Nandu: I know aunty and I also know that you are a doctor of Ayurveda and can tell me lots about plants, trees, and herbs etc. That is why I did not go to Ravi's house but stayed back to meet you.

Pradip: Now that we are discussing conservation let us begin with the conservation of the very basis of life...I mean conservation of air, soil and water.

Arti: Although human beings have managed to pollute all three! Anyway, I think we should begin with soil.

Sandip: No, Dr. Arti. We should begin with breakfast.

Rama: (Exasperated tone) Really! You are fixated on breakfast...it is coming. Till it arrives, let us listen to Dr Pradip tell us about conservation of the environment.

Sandip: And ...goodbye breakfast.

Laughter

Pradip: Well, let us begin with soil...the most fundamental of all natural elements. It is one of the most important of all natural resources. Unfortunately instead of taking measures to conserve it, we ignore its importance. Water and solar radiation are important but apart from these two, soil plays a massive role in maintaining the food cycle.

Nandu: Yes Uncle. Soil provide the nutritive elements and helps plants to grow.

Arti: No tree can survive without fertile soil. That is why we need to conserve soil and prevent loss due to erosion. We must also take care that its fertility does not decrease because of changes brought about by excessive use of chemical ingredients.

Pradip: It is believed that erosive losses brought about by wind action or water cannot be rectified using mechanical measures. This should be reversed using biological methods.

Sandip: Dr Pradip, you are right and this has been going on for years now. Our farmers know this too. Yet, the soil condition is pitifully undernourished these days...like me...why?

All laugh

Pradip: Dr Sandip, just as you are feeling wasted because you haven't had breakfast yet...but that is the condition of soil these days. Actually soil is a bit like a bank account. We must regularly replenish whatever we withdraw; otherwise the bank balance will go down.

Arti: We take away a lot of the nutritive elements inherently present in the soil but do not replenish them. That is why the fertility of the soil is waning. It is dwindling...going down.

Rama: And that is where the need for conservation enters the picture.

Pradip: See, these days the farmers are setting fire to the stubble that remains after reaping paddy. This spreads pollution. Apart from that the fire destroys the innumerable tiny creatures...even beneficial microbes whose actions are linked to renewed soil fertility. Once these are gone...adding any amount of manure or fertilizer is not going to be helpful.

Arti: In the olden days, people used to recognize the importance of crop residues...they used to use crop residues such as stalks, dry leaves etc., as soil cover. This conserved the water level in the soil and also provided suitable ambient conditions for the microbes to flourish.

Pradip: Nandu, most crops retain 70-75 percent Potassium in the stalks etc., and we burn these as waste instead of burying these crop residues in a pit and composting it. That way we would not need to buy expensive Potassium fertilizers.

Sandip: Yes...absolutely. And in urban houses the wastage of these nutritive elements is maximum.

Gudiya: How so, Papa?

Sandip: Gudiya, I am referring to all the food wastes emanating from our kitchens that can be broken down by nature...I mean fruit and vegetable wastes...you know everything that can be decomposed naturally. If only we segregate these biodegradable wastes from the wastes that cannot be biodegraded...there will no longer be massive mountains of refuse. And we will also not need to buy expensive chemical fertilizers.

Gudiya: Oho...so you mean segregating wastes in blue and green bins! The blue bins are for non-degradable wastes such as plastic bottles, aluminium foil and tins etc., and the green bins are for wastes of biological origin..say fruits and vegetable, chappatis, cooked food etc....and Papa, we can even compost the wastes in the green bins.

Sandip: Yes Indeed Gudiya. Quite right. The compost made using biodegradable wastes is said to contain 15-16 nutritive elements whereas chemical fertilizers or NPK fertilizers have just three.

Nandu: Wow...Papa you know a lot about soil and I thought all you knew about are lungs.

Sandip: Son, I have to keep track of a lot of things if I have to take care of you all. And Rama, ask Manisha to take care of me and also of all of humanity.

Rama: I understand what you mean by asking Manisha to take care of you...but how can she take care of all of humanity?

Sandip: By dumping all extra food and vegetable peels etc., in the green bin. That step alone is a way to serve all of mankind.

Laughter

Nandu: So, Pradip Uncle when it comes to conservation, we must not only use natural resources sparingly i.e., reduce use but we must also recycle and reuse them.

Pradip: Absolutely correct. Look we add expensive Phosphorus fertilizer to the soil yet 80-82 per cent remains in insoluble and unavailable condition. Every year it is the same story.

Arti: No wonder the expenses incurred by the farmers keep increasing...although the easiest way would be to use liquid microbial bio fertilizer.

Gudiya: Liquid microbial bio fertilizer...what is that?

Pradip (*laughing tone*) : Gudiya...it is nothing but fertilizers containing microorganisms which are capable of making available nutrients to the plants thanks to their biological activity in conjunction with soil and air. Such formulations are available as powders or as liquids.

Arti: Yes and some microbes can render the Phosphorus soluble so that plants can use it. To allow these microbes to flourish in the soil we need to use bio-wastes such as cow dung and compost etc. If we do just this much, the soil will keep producing crops and that too without any deleterious components.

Gudiya: Oh... so those who burn the stubble or crop residue in their fields are actually not only harming the soil but also all of humanity.

Sandip: Yes indeed Gudiya, and that is why we need to spread the message that the future of mankind depends not on instruments and machinery but on Mother Nature. We must strive to take care of our natural resources at all levels.

Rama: I appreciate your comment that the future of mankind depends not on instruments and machinery but on Mother Nature. Well said!

Sandip: But my future hinges on breakfast...which I have still not got!

Laughter

Pradip: There is one fact we must pay attention to...see Dr. Sandip has rightly pointed out that our future depends on nature. So why is a large part of the Earth's fertile soil rapidly becoming desertified? How is pollution affecting the global animal as well as plant life? Together with these we have to understand the rules of growth and biodiversity loss.

Arti: Another big issue involves water pollution and water scarcity. Water scarcity is a situation that happens when demand for freshwater outstrips supply. Water scarcity is often associated with agricultural practices. Agriculture consumes 90 per cent of water resources, leaving only 10 per cent for domestic use. Domestic usage is a fraction of the water used in irrigation.

Pradip: Well pay attention then to this fact...in metro cities households tend to consume 250 litres per head but in five star hotels this usage touches 500 l per person.

Sandip: And people say there is water shortage. Why does a person need 250 or even 500 litres of water?

Arti: Yes...and the saddest thing is that much of this water is wasted...either it is flushed away or used in washing cars etc.

Rama: I can tell you an easy way to save water each time you flush. Put a plastic bottle in your toilet tank to decrease the amount of water that flushes out each time. Less water will be needed to fill the tank and therefore less water will be flushed each time.

Gudiya: Ah! That is why there is a one litre bottle in the cistern. Very smart, Mummy.

Laughter

Pradip: India has always been proactive about water conservation. Even 5000 years ago, the Indus Valley civilization had a clear system of urban drainage. They were the pioneers of underground drainage.

Sandip: Rightly observed Pradip, One of the oldest water harvesting systems has been found near Pune in the Western Ghats. A large number of tanks had been cut in the rocks and water collected in these cavities. These provided drinking water to tradesmen who used to travel along this route. Each fort in the area had its own water harvesting and storage system in the form of rock-cut cisterns, ponds, tanks and wells.

Rama: Yes, in olden days, houses in western Rajasthan were built so that each had a rooftop water harvesting system. Rainwater from these rooftops was channelized into underground tanks. Underground baked earthen pipes and tunnels were put into use to conserve water and to channelize it to other places. These are other examples of traditional water conservation practices. These practices are still in use in Madhya Pradesh, Karnatak and parts of Maharashtra.

Arti: In rural areas, floodwater quickly flows to the rivers. Seasonal rain-fed rivers dry up soon after the rains stop. It is necessary to stop the loss of this water and to conserve or store it. A popular method of conserving water in the urban areas involves rain water harvesting. It involves collecting rainwater falling on the roofs of buildings and storing it in underground tanks for later use. This not only recharges groundwater levels but also helps augment water supply and ensures water security in the face of scarcity.

Pradip: Water conservation leads to enhanced availability of water, it helps counter decline in water table level. It is environment-friendly. By diluting fluorides and nitrates and even brackishness the quality of ground water is enhanced. In urban areas, water conservation is an instrument to combat water erosion and inundation.

Sandip: Remember Rahim's doha on water? *Rahiman pani rakhiya...bin pani sab sunn...Pani gaye na ubray, moti, manus, chun...*How correct! Rahim says, water is most important. Without water, there are no pearls ...he means wealth...life or earth.

All clap

Sandip: Now let me come to my subject. We all know the harmful effects of air pollution. Recent newspaper reports have highlighted how Delhi became a gas chamber and the scariest fact is that it is not just the capital of India but many other towns and cities that are similarly affected.

Gudiya: But Papa, people are installing air purifiers in houses these days and cars are being manufactured with built-in air purifiers.

Sandip: And that is part of the problem...I did say, didn't I that the future of mankind does not depend on machines. The cars that have air-purifiers are the cars that are causing the pollution in the first place. The increase in demand for electricity is fuelling the growth of air pollution...it is poisoning the air because we generate electricity by burning coal.

Arti: Good point Sandipji. We must, as Nandu has pointed out reduce, reuse and recycle. The Earth's natural resources are limited. But human greed has no limits. That is why we need to conserve natural resources.

Rama: Really there is no understanding human beings...we were so lucky to get such a beautiful planet filled with the colours of biodiversity...we are now looking for extra terrestrial planets after having almost destroyed our own.

Sandip: Well said Rama ...we have, till now, not been able to detect life on any other planet. And even if there is a faint chance that life may be present elsewhere it will take us thousands of years to reach...and perhaps when we do reach..that is, .if we do reach... we may find that we are unable to even breathe freely on the new planet. No...the answer lies in conserving the resources we still have.

Pradip: Just imagine Dr. Sandip...a 300 ppm concentration of Carbondioxide in the atmosphere used to be thought to represent the danger threshold...but we have breached that to reach 400 ppm and this value is climbing! No wonder the Erath is fiery with anger and global warming is leading to climate change. This is turn is ushering in new illnesses. Pest attacks on crops are on the rise. Unseasonal rains, unprecedented droughts and desertification are the common fallouts being experienced today.

Arti: The solution is easy enough though...in summer we should wear loose fitting cotton clothes to feel comfortable. But no! People will insist on wearing tight fitting clothes, switch on the AC and curse the heat. The same situation can be

seen in winter when heaters will be switched on, electricity will be wasted but thick woollens will not be worn.

Nandu: Yes Arti aunty, when I was researching water conservation techniques for my project I found that there are many methods that have already been laid down especially for water deficient areas and also those areas where there is scanty rainfall. People seem to have forgotten many of these effective methods. Although recently there was a report that by adopting irrigation and water conservation system dating back to the Mauryan times, some parts of Bihar have managed to counter the water crisis of the area.

Gudiya: Nandu bhaiya our teacher told us that in Rajasthan people used to build large dams called khadin, johar and taankas to store water. These methods have been effectively utilized in Uttar Pradesh where these are called Jal talais in Uttar Pradesh. It is called Haveli system in Madhya Pradesh, and Ahar in Bihar.

Pradip: Wow, Gudiya you know a lot about these practices.

Gudiya: My teacher has also said that each one of us should adopt a way to save water even if it means conserving just a drop. We should use only that much water that we actually need. We should spread the message of water conservation among people. We should encourage friends and neighbours to find new and innovative ways to conserve water. We should ensure that our homes are leak-free... often our tanks in the toilets leak...we should ensure this does not happen.

Nandu: Gudiya...you have summed up my entire project.

All laugh.

Gudiya: Avoid flushing the toilet unnecessarily. Do not leave the tap running while you are brushing your teeth or soaping your face. And Papa and Bhaiya, when washing the car, use water from a bucket don't use a hosepipe. Do not discard water that has been used for washing vegetables, rice or lentils. We can use it to water plants or to clean the floors. Collect water in buckets or drums. Always keep these containers covered...and you can reuse this water later to water the plants, mop the floors or wash the car.

Rama: Catch your breath Gudiya.

Pradip: I have to admit that the most practical suggestions on water conservation have come from Gudiya. If only everyone would adopt these suggestions, our Earth would remain verdant.

Arti: Quite right Dr. Pradip, conservation practices run deep in the psyche of Indians...it is just that we have lost the plot a little. But if we all get our act

together and make a commitment to conservation efforts it will not be long to change our deviated habits and address the situation.

Sandip: While I agree with you Dr Arti, I must point out that some habits should not be changed...in fact, some habits are good for health.

Rama: Like what? Which habits are you talking about.

Sandip: The habit of eating breakfast. If we have finished discussing the conservation of natural resources I think it is time we paid some attention to my conservation. Let us all quickly have some breakfast.

Rama: Manisha, set the table quickly and serve the paneer pakoras, halwa and tea for all.

Sandip: Hmmm tasty food. Looks like the fruits of conservation are sweet.

All laugh.

The End