

The Custodian

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(Signature tune.....Fades out)

(Title music.....Fades out)

(Opening music.....Fades out)

Characters

Sunil: Father

Sunita: Mother

Medha: Sunil's daughter

Vivek: Sunil's son

Arora: Sunil's friend

Manoj: O.N.G.C. officer

Rajesh: Geography Professor

Anchor: Namaskar friends, we welcome you to this episode (name of episode) of our radio science serial. In the previous episode we had told you (recap). Friends, in our daily life we need a variety of things which include water, air, plants, petrol for our bike, and food. They also include the house we live in and items of our daily use, which we call resources. Some resources we take from nature and use indiscriminately while others are used to make things we use daily.

What we get from nature is called natural resource. But, the irony is that only 20 per cent of the world's rich enjoy 80 per cent of the world's resources and 80 per cent of the world's population who are poor have to manage with only 20 per cent of the resources. Of this, 40 per cent of the poor gets only 5 per cent and 20 of the very poor gets a share of only 2 per cent. So, population is not the main reason for the scarcity of natural resources, as many of us tend to believe.

In this episode we'll talk about our diminishing natural resources.

Scene-1

(Opening music.....Fades out)

Place: Drawing room(On a Sunday, Medha, Vivek and their father watching TV news and having tea)

Anchor: Today govt. has announced a hike in the prices of petrol and diesel. Petrol will become dearer by 2 rupees 17 paise and diesel by one rupee 96 paise. The price of cooking gas has also been raised. Now you'll have to pay 55 rupees more for a cylinder. A govt. spokesman said this increase is because of a decline in petroleum production and rise in its price in the international market.

(Anchor's voice fades out with superimposition of the conversation)

Vivek: Medhadidi, petrol was never cheap. I think now you'll have to lock up yourscooty and depend on route no 11 to go to school.

Medha: What's this route no. 11, Vivek?

Vivek: Oh, that's my two legs.....It means now I'll have to walk to school. Didi, I'll get your old cycle repaired.

Medha: (angrily):Oh, you want to get that ramshackle cycle repaired for me? I only use my scooty to go to school. But you're always seen loafing around on the road with your bike. What'll happen to that?

Vivek: Oh, you call my going to the gym loafing around?

Father: (entering the room, voice becoming louder): What's going on? Again fighting? Vivek, can't you sit in peace for 10 minutes?

Medha: Papa, Vivek started the argument. He tells me to lock up my scooty and to go to school either on foot or get my ramshackle cycle repaired.

Father: But why should Medha go to school on foot?

Vivek: Don't you know, Papa, petrol and diesel have become costlier from today?

Father: Oh, I see!

Medha: Yes, Papa. We just heard in the news that the prices of petrol, diesel and cooking gas have been increased.

Father: This is the second time that the prices of petroleum products have been increased.

Medha: Papa, we've only seen rising petroleum prices, never seen it going down.

Vivek: It will never go down.... isn't that so, Papa?

Father: Of course, because the Earth's reserve of petroleum is limited and its consumption is increasing fast. Although expensive, at least petroleum products are available today.

Vivek: Do you mean a time may come when they won't be available?

Medha: It's not a question of 'may'; it 'will' come, isn't it, Papa?

Father: Yes, Medha, you're right. If we use up our natural resources indiscriminately, we'll run out of not only petroleum products but many other things of our daily use.

Vivek: Papa, we were talking about petrol and diesel, but you just mentioned about natural resources. What are these natural resources?

Father: Any resource that we get from nature is a natural resource.

Vivek: That means, water, plants, fish, petrol, cooking gas– all these are natural resources.

Father: But remember; only when we are able to use a product for our daily needs it becomes a resource.

Vivek: What do you mean, Papa?

Father: Take the example of petroleum, which been lying underground for millions of years. But till we learnt to use it to drive cars it was of no use.

Medha: That means it was not considered a natural resource.

Father: Yes, Medha. A natural product can be considered a resource only when appropriate technology is available for its meaningful use.

Vivek: You mean everything we take from nature can be a natural resource?

Father: Yes, it can be living or non-living.

Medha: You mean biotic or abiotic?

Father: Yes, Medha.

Vivek: That means, all living beings and plants around us can be considered biotic resource.

Medha: But, Papa, the number of all living things keeps growing through reproduction.

Father: You're right. That's why they are called renewable resource.

Vivek: That means, they will never get exhausted.

Father: Only if you use it with discretion and don't overuse them.

Medha: If we don't maintain a balance we may lose some resources forever.

Father: You're absolutely right, Medha. This balance should be the motto of our life.

Vivek: Why, Papa?

Father: Vivek, remember our life depends on these natural resources. Imagine, if we lose all plants and crops, can we survive?

Medha: If we don't get petrol or coal it will be a big problem.

Vivek: Papa, are coal and petroleum natural resources?

Father: Of course, and remember, they are biotic resources.

Vivek: Biotic resources? But Papa, they don't grow or reproduce.

Father: That's why they are different from living biotic resources. But remember; they were formed from living plants and organisms after remaining buried underground for millions of years.

Medha: Papa, are they renewable like living biotic resources?

Father: No. Since they don't grow they are called non-renewable resource.

Vivek: You mean they will be exhausted some day?

Father: You are right, Vivek. They'll certainly get exhausted, but if we use them prudently they may last longer.

Medha: But, still, we'll have to find alternative resources.

Father: Maybe, the alternative resources will force a change in our lifestyle.

Vivek: But how?

Father: Suppose petrol gets exhausted one day, what will people do?

Medha: If the alternative is not convenient or too expensive, maybe people will travel less. They may also look for jobs near their homes.

Father: Today we consider the world as a global village because we can travel to any corner in a few hours. If travelling becomes difficult then the world will again appear too big as it did one or two hundred years ago.

Vivek: You're scaring us, Papa.

Father: No Vivek; I'm just trying to tell you how natural resources can change our culture and way of thinking.

Medha: And our lifestyle too.

Father: Yes, Medha. Apart from biotic resources, abiotic natural resources are also essential for our life.

Vivek: Papa, what are these abiotic natural resources?

Father: Many things that we see around, such as land, water, air, minerals. These are abiotic natural resources.

Mother: (from a distance):Medha, Vivek, where are you?

Vivek: We're in the drawing room.

Mother: (entering the room):Oh, all of you are here. I was looking for you with tea and snacks in your rooms. Being a Sunday, I thought you'd be still in bed.

Vivek: No mother, this morning after we heard about petrol and diesel becoming costlier, we were discussing it.

Mother: Yes, I heard about the rise in cooking gas price.

Father: By how much?

Mother: Fifty-five rupees! And a cylinder doesn't last more than twenty days; all because I've to use the gas so many times – to make so many cups of tea and meals at different times for each of you. Using the gas so many times consumes too much gas.

Medha: You've said it right, mother. Cooking gas is not inexhaustible. We must use it economically.

(The doorbell rings)

Mother: Medha, see who's there.

Medha: Yes, mother.

Father: (surprised): Oh, Arora it's you! What's the matter? Come, sit here.

Medha: (whispering):Who's he, Papa?

Father: Arora is a childhood friend of mine. So, Arora, how come you're here today? You were posted in Gujarat, isn't it?

Arora: Yes, Sunil. I've now been transferred to Dudhwa National Park. I had to pass through this place, so I decided to meet you.

Father: That's very good, Arora. You must have got your promotion

Arora: Yes, Anil. Now I'll be joining as Deputy Conservator of Forests.

Father: Arora, this is my daughter Medha, she's doing B.Sc. and my son Vivek is doing his Intermediate.

Medha-Vivek:

(together): Namaste, Arora uncle.

Arora: Namaste Medha, Namaste Vivek.

Father: (with a smile): And this is.....

Arora: (interrupting): Bhabhiji. How can I forget her, she's not changed a bit. Namaste Bhabhi ji.

Mother: Namaste Bhaiya. Have some tea. He'll keep you busy talking. Please freshen up, have a bath and I'll be preparing the meal.

Arora: No meal Bhabhi ji. I'll have to travel long. I'll go to Palia from here and from there to Dudhwa. It'll be evening by the time I reach there.

Father: Come on, Arora, have some tea and pakora.

Vivek: Uncle, do you have to live in a jungle?

Arora: Vivek, not exactly inside jungle, but my work is mostly in jungle.

Medha: That means you have a chance to roam in the jungle daily....how exciting...isn't it Uncle?

Arora: Yes, if you only go there to roam. You must have gone to a jungle for excursion and picnic.

Vivek: Great idea, Arora uncle!

Father: Arora, you've got me into trouble.

Medha: Papa, please make a programme; I'll manage mother.

Father: Ok, I'll see.

Arora: Fine. I'll see the situation after I reach and call you.

(Changeover music.....fades out)

Scene 2

(Opening music.....fades out)

Place: Living room

(Vivek, his father and mother sitting)

Mother: My elder sister is not keeping well. Let's visit her someday.

Vivek: Mother, are you talking about Manoj uncle, who works with ONGC?

Father: Yes he's a senior officer in Oil and Natural Gas Commission.

Vivek: Can we also come?

Father: Sure. Today is a holiday. Let's go today.

(Opening music.....fades out)

Place: House of Manoj

(Vivek, Medha and their parents enter)

Manoj: Sunil, come come. What's the matter? Welcome SunitaBhabhi ji, Medha and Vivek.

Sunil: (smiling): Oh, Manoj bhaisahab, I'm always at the beck and call of your Bhabhi ji. If she decides I have to obey.

Sunita: No, Jijaji. Heard that Didi is not well, so decided to come. Where is she?

Manoj: She's relaxing inside, has mild fever. Nothing to worry about.

Sunita: Ok. I'm going to see her, you all stay here.

(Sunita leaves)

Manoj: Sunil, now tell me how's everything.

Sunil: Manoj bhai, nothing special.

Vivek: I have special news, Manoj uncle.

Manoj: (smiling): Ok, tell me what's it.

Vivek: Why do you people increase the price of petrol so frequently?

Manoj: Vivek, we cannot determine the price of petrol. It's decided by the global production and consumption levels.

Vivek: The more we consume the less will be its availability and higher will be its price.

Manoj: You're absolutely right, Sunil. The availability of petroleum products is decreasing day by day.

Vivek: Why, Manoj uncle?

Medha: Because it's a non-renewable resource.

Vivek: I don't understand.

Sunil: Non-renewable resource means something the reserve of which is limited. We cannot increase the quantity available for use. Think of a godown full of cylinders filled with cooking gas and we take out and use the gas stored here without any limit.

Manoj: Exactly. We need energy for everything we do. Almost 40 per cent of energy used in homes, factories, and transportation comes from petroleum products.

Medha: Manoj uncle, that means almost half of our energy need is met by petroleum products.

Manoj: You're absolutely right, Medha.

Vivek: Manoj uncle, from where do we get our petroleum products?

Manoj: Saudi Arabia, Russia, and the United States are the largest producers of petroleum, but Saudi Arabia, Russia and Norway are the largest exporters.

Sunil: The United States and Mexico use their own petroleum and also import some of it.

Vivek: What about India?

Manoj: It is estimated that India has a reserve of about 6 billion barrels or 900 billion litres of petroleum.

Sunil: I think it's the second largest reserve after China.

Manoj: You're right, Sunil. The largest of our reserves are found off-shore around Mumbai.

Medha: But, still we have to import large quantities of petroleum.

Manoj: According to a 2013 survey by an International agency, at the rate we are consuming petroleum, the world's reserves may get exhausted in 25 years!

Vivek: What will happen after that?

Manoj: Price of petroleum will rise when the rich nations will be able to buy it, but developing nations like India will face a very difficult situation.

Medha: But research is already going on to develop alternative sources of energy.

Manoj: That's true, but I doubt if any of them can directly replace petrol or diesel.

Medha: Why, Manoj uncle?

Manoj: The main alternatives we have today are nuclear and solar energy. But can we use these to run our bikes, cars, buses or airliners?

Medha: But natural gas can be used to run cars and buses.

Manoj: Yes Medha, compressed natural gas, or CNG, is being used widely to run vehicles. According to one estimate, almost 25 million vehicles are running on CNG around the world.

Vivek: But natural gas will also get exhausted someday, isn't it?

Manoj: You're right. According to present estimates, the present reserves of natural gas will last for 100 years or so.

Medha: Manoj uncle, we use liquefied petroleum gasLPG and piped natural gas at home for cooking. If these resources are exhausted then what will happen?

Sunita: No problem. We'll use coal.

Sunil: But coal too will not be available forever.

Manoj: You're right, Sunil. Coal will last no more than 100 years or so.

Sunita: That means cooking gas and coal will get exhausted. Shall we be using wood for cooking then?

Manoj: No Sunita Bhabhi, new sources of energy will be developed by then.

Medha: Otherwise we'll go back to the primitive ages when humans ate uncooked food.

(Everyone laughs)

(Changeover music.....fades out)

Scene 3

(Opening music.....fades out)

Place: Home of Medha and Vivek

(The doorbell rings)

Sunita: Medha, I think your Papa has come.

Vivek: Go and open the door.

(Sound of opening the door, footsteps)

Sunita: You're quite late today!

Sunil: There was a meeting in office. Medha, you remember your Arora uncle?
Medha: Oh, the uncle who is at Dudhwa National Park?
Sunil: He's sent a message...inviting us.
Vivek: Have you said, yes?
Sunil: Not yet.
Vivek, Medha (together): Papa, please!
Sunil: Ok, I'll call him. We'll go next Sunday.
Medha: Papa, you're really great!

(Changeover music.....fades out)

Scene 4

(Opening music.....fades out)

Place: Arora's office at Dudhwa National Park

(Sound of running jeep)

Vivek: Papa, how long will it take to reach Arora uncle's office?
Sunil: I think in just a few minutes....Oh, we've reached.

(Sound of jeep stopping and opening of door, background sound of being in a forest)

Arora: Oh, Sunil you've reached. Welcome to Dudhwa National Park.

Medha,Vivek: (together): Namaste Arora uncle.

Arora: Namaste Vivek, Namaste Medha, Bhabhi ji come this way. Vivek leave the bag there, I'll get it picked up.

Vivek: Arora uncle, do you live here?

Arora: Well, almost. I spend most of time here. I hope you didn't have any problem on the way.

Sunil:No, no.

Vivek: Arora uncle, the forest environment feels so good.

Medha: It's not only about feeling good, forests are essential for our life.

Arora: Yes, Medha, our life depends on them. Forests prevent fertile soil from being washed away. They are also the chief source of oxygen that we breathe.

Vivek: We can't live for a minute without oxygen.

Arora: About 39 million square kilometres, or one-fourth of our Earth's land surface is covered with forests.

Sunil: But for sustaining ecological balance, forest cover should be at least 30 per cent, isn't it, Arora?

Arora: Yes, Sunil. There are countries like Mozambique, Zimbabwe, Sweden, and Guyanawhere forest cover is almost 75 per cent, and in Gabon it is more than 85 per cent.

Medha: That means it has the highest forest cover.

Arora: True. On the other hand Malta, Bahrain, Libya, and the Arab countries have less than half per cent of their total area under forest cover.

Sunil: I'm told Qatar has no forests.

Arora: Yes, that's true. But they have plans to create an artificial forest of about eight square kilometres.

Medha: Qatar is creating an artificial forest and in our country we are destroying our forests recklessly.

Arora: Yes Medha, almost 10 per cent of the world's forests were destroyed in the fifteen years between 1990 and 2015.

Medha: And we are suffering the consequences.

Sunil: I've heard that if forests continue to be destroyed at this rate in 100 years the world's famous rainforests would cease to exist.

Arora: You heard it right, Sunil. And the situation in India is also not encouraging. According to a survey of 2012, the total forested area in India is only about 25 per cent of its total land area. In states like Uttar Pradesh, Haryana, and Punjab, the forest cover is only 3.5 to 5 per cent.

Vivek: That's a really bad situation!

Arora: It's indeed. In India, more than 15 lakh hectares of forest land is cleared every year for agriculture and other uses.

Medha: I think this is the reason why the Earth is getting warmer, monsoon is becoming uncertain and wildlife is disappearing.

Arora: True. According to a survey done in 2014, there has been a decline of more than 52 per cent in wildlife species between 1970 and 2014. In India, some 172 species of animals are on the verge of extinction.

Medha: I know some them, such as the Asian elephant, one-horned rhino, Royal Bengal tiger, vulture.....

Sunita: Apart from these, I heard that many species of plants are also endangered.

Arora: You've heard it right, Bhabhi. Efforts are on to save them. The govt. has already created more than 120 national parks, 18 bio-reserves, and 537 sanctuaries for the purpose.

Vivek: Arora uncle, are we going to talk only theory today, or we have plans for practicals also?

Arora: What do you mean, Vivek?

Medha: Aren't we going into the forest to explore?

Arora: Why not. Let's have breakfast and then we'll go on forest excursion.

(Changeover music.....fades out)

Scene 5

(Opening music.....fades out)

Place: Railway station

(Medha, Vivek, Sunil and Sunita returning home after visiting Dudhwa National Park)

Medha: Vivek, get inside, the train will be leaving soon.

(Whistle of train, sound of moving train.....gradually fades away)

(A passenger approaches Sunil and asks)

Passenger: Is that seat occupied?

Sunil: No, no. You can sit there.

Passenger: I'll get down at Lucknow.

Sunita: We are also going up to Lucknow.

Sunil: Do you live in Lucknow?

Passenger: Yes. I'm Rajesh Sharma, a geography professor in the university.

Sunil: I'm Sunil. This is Medha, my daughter and my son Vivek, and my wife Sunita.

Medha: Rajesh uncle, do you teach at the university?

Rajesh: Yes, my dear.

(Sound of running train)

Sunil: Rajesh ji, there was a time when travelling by train we could see crop fields on both sides of the track extending up to the horizon. But today we see so many built-up areas in between.

Rajesh: Where has all the crop fields gone?

Medha: They have been swallowed by our growing population!

Rajesh: You're right, Medha. In the year 2000, almost 54 per cent of India's land area was under cultivation, but today it has come down to only 47 per cent, thanks to growing population and urbanisation.

Sunita: That means our growing population has eaten up 7 per cent of our cultivable land.

Sunil: Not only land, the growing population is also the cause of many other depleting natural resources such as minerals, oil, and gas as we have already seen.

Rajesh: Water is a renewable natural resource, but it has also become scarce due to misuse, wastage and pollution. We must remember, we are the custodians of all our natural resources and have no right to fritter it away. We have to conserve it for our future generations by using them judiciously. If we fail to do that, the human species may be in for serious trouble ahead.

Sunita: Oh, we have reached Lucknow. Rajesh ji, we enjoyed talking to you.

Sunil: Here's my card. Do visit us sometime.

Rajesh: Sure.

(Changeover music.....fades out)

Anchor: In this episode "The Custodian" of the radio science serial (name of the serial) we learnt how the Earth's natural resources are being rapidly depleted and what danger it poses for humankind. In the next episode we'll talk about (topic for next episode). So do tune in at the same time next week. Till then, goodbye.

