SILENT RHYTHM

Green Tales for Children
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2017
Silent Rhythm: Green Tales for Children- Published by the Rev. Dr. Ashish Amos of the Indian Society for Promoting Christian Knowledge (ISPCK), Post Box 1585, Kashmere Gate, Delhi-110006.

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Also available on amazon.in

ISBN: 978-81-8465-581-0

Laser typeset by
ISPCK, Post Box 1585, 1654, Madarsa Road, Kashmere Gate, Delhi-110006 • Tel: 23866323
e-mail: ashish@ispck.org.in • ella@ispck.org.in
website: www.ispck.org.in
Printed at Saurabh Printers, Noida.

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Foreword

God has given the freedom of choice as seen in Deuteronomy chapter 30 verses 19 to 20 of Bible which may be paraphrased as follows:

Today I am giving you a choice between a sustainable and an unsustainable world, between life and death. If you follow the values of sustainable living as directed by God, then you will prosper and become a nation of many people. God will bless you in the land you are living. But if you disobey and refuse to listen, and are led by unsustainable values, you will be destroyed—I warn you here and now. I am giving you the choice between life and death.

In this era of globalization, the choices are infinite, leaving children confused not knowing what to select. Values of an unsustainable world are more appealing. Most of the children want to enjoy life and they don’t bother about the depletion of the natural resources because of over-consumption. We recognise that what we do with God’s creation around us will have a tremendous impact, for good or ill, on the lives of our grandchildren and on the generations of their children and grandchildren. Our attitude to God’s creation at present will determine the state of the society that will be inherited later in the twenty-first century. We, as teachers, would like to advice children to select life instead of death. Nature is not a material resource for human consumption. Human beings are a part of nature. We have to affirm the rights of future generations. • Right to a rich plant and animal world • Right to healthy air and to an intact ozone layer .•
Right to clean and sufficient water and, in particular, healthy and sufficient drinking water. • Right to healthy and fertile soil and to healthy woodlands. These are rights related to God’s creation that we now reaffirm since without these rights all the other rights are ultimately lost. What’s the point of rights in society if the earth becomes uninhabitable?

The choice depends on how we observe what is happening around us. For a sustainable world we have to follow the rhythm of nature, the silent rhythm. Jesus through his life and ministry shows us how to be a disciple by following the rhythm of God. We read in the Bible, Jesus spent forty days and forty nights in the wilderness, an area essentially undisturbed by human activity together with its naturally developed life community to study the rhythm of nature. In order to disturb God’s rhythm, the tempter came to him and said, “if you are the Son of God, tell these stones to become bread.”. Jesus observed the rhythm of nature through his life in the wilderness. Bread is made of grains which is produced by the growth of seeds from the earth. Converting stones to bread is an unnatural process which is against the rhythm of nature. The second temptation was, “if you are the Son of God, throw yourself down”. The tempter was again tempting Jesus against the rhythm of nature. Jesus overcomes the second temptation which is also against the natural rhythm. The third temptation is in favour of worshipping Nature. Jesus overcomes the third temptation. Nature is not for worshipping but for understanding God’s revelations through its rhythm. Through forty days training Jesus understood the rhythm of nature which is the reflection of God’s rhythm. That is why during his ministry, Jesus said “look at the birds of the air; they neither sow nor reap nor gather into barns, and yet your heavenly Father feeds them..... Consider the lilies of the field, how they grow; they neither toil nor spin, .... But if God so clothes the grass of the field, which is alive today and tomorrow

is thrown into the oven, will he not much more clothe you—you of little faith?”

This is a book for children to help them understand the rhythm of nature, the silent rhythm and to select a sustainable world and life. The narration is in the form of a conversation of the children with a retired teacher who enjoys the company of children. During the thirty-day conversation Muthassi (the Malayalam term for an old lady) taught them how to study in an interesting manner, the significance of ants, earthworms, fireflies, mountains, marshy places, water, rivers, vetiver, etc in keeping with the rhythm of nature. Also she acquainted them with international eco protocols and introduced the eco warriors in history. In a way it highlights the intrinsic value, purpose, interconnection, mutual care, voice, resistance of each species created by God in simple and lucid manner. We hope it will create an environmental awareness not only in children, but adults as well.

We have been eco warriors since 1990, specifically Green Church Campaigners. We expect our children to keep the values of a sustainable world in their life. This is the greatest gift for our children and grand children. We dedicate this book to our grand children Angela, Alisa and Anisa. Hope they will inspire others.

Prof. Dr.Mathew Koshy Punnackad
Prof.Dr.Anne Susan Koshy
Preface

One of the most challenging tasks confronting parents and teachers is that of instilling within their children and students a proper set of sustainable values. We have a tremendous responsibility to impart sustainable values to children which will provide motivation and guidance throughout their lives. Train a child in the way appropriate for him, and when he becomes older, he will not turn from it. (Prov. 22:6). Children ought to have a proper perspective about sustainable values. Creating sustainable lifestyles means rethinking our ways of living, how we buy, what we consume and how we organize our daily lives; it is about transforming our societies and moderate living with our natural environment. For sustainable lifestyles to be a part of our cultures and societies as well as a part of our everyday lives, they must be enabled and developed at all levels, through the social, technical systems and institutions that surround us.

In this context, I would like to appreciate the excellent book, ‘Silent Rhythm’ written by Prof. Dr. Mathew Koshy Punnackadu and Prof. Dr. Anne Susan Koshy. The earth is a finite body of ecosystems, resources and species. In the ‘Silent Rhythm’ the authors clearly warn that the time has come for eco-sensitive humans to join the Earth in its struggle against these injustices that now threaten the total ecosystem of the Earth. In this book you can hear the silent rhythm of nature, which will instill the values
of sustainability in our children. If you want your children to live in this world in peace and harmony you have to educate your children/students with sustainable values while they are still young. God created forests, mountains, valleys, plains, wild life, domestic animals, rivers, lakes, air, plants, micro organisms with an intrinsic value and purpose, they are interconnected and have voice. Listen to the voice of the other creations in this world; it will help you to understand the rhythm of nature. This may be the only solution to save our earth from the environmental catastrophe. If we, as Christians have been responsible for the ecological crisis, we have a moral obligation to help find a solution.

Prof. Dr. Mathew Koshy Punnackadu has been a pioneer in the field of ecology as a green church campaigner since 1990. With great pleasure, I would like to state that we have been working together from youth with an ecological concern. Now he is working with me at the synod level as the Director of Ecological concerns of CSI. He has edited three volumes of Earth Bible Sermons and a book called ‘Green Parables’ for CSI Synod during the last triennium of synod. This is a companion volume for the above four books as well as a useful book for high school students to enhance their general knowledge.

I wish and pray that this book would inspire and motivate children for an eco friendly world. I would like to appreciate Prof. Dr. Mathew Koshy Punnackad and Prof. Dr. Anne Susan Koshy for the pains they have taken to bring out this valuable book for Children.

The Most Rev. Thomas K. Oommen

Moderator of Church of South India (CSI)
Long ago in the remote village of Myladumpara lived eight good friends, Tiju, Kevin, Anjay, Anju, Anjana, Angela, Alisa and Anisa, all aged ten. They spent their holidays together exchanging tales and playing games, but their greatest delight was listening to the stories narrated by teachers. Being academically bright these pupils were their teachers’ favourites. These children were not only loved by their teachers but also by the villagers who were greatly attracted by their good behavior. They were respectful, obedient, intelligent, generous and always ready to extend a helping hand to those in need.
In Myladumpara there also lived a retired teacher whom the children fondly called Muthassi (a term in Malayalam to denote an elderly lady). They eagerly frequented her house throughout their holidays.

John, who owned a tea shop at the junction commented, “it’s really hard to find such well-mannered and intelligent children these days.” Thomas, a daily customer to the tea shop added, “the credit goes to Muthassi.”


Thomas calmly retorted, “John, these children often visit this Muthassi who lives on the top of a hill in Myladumpara.” He added, “she teaches them many inspiring lessons that have inspired and moulded them to study well and be well-mannered. John disagreed and suggested that it might have been the tuition teacher who was the inspiration behind this. But Thomas was adamant and emphatically stated that it was not the tuition teacher, but the Muthassi who taught them many good things freely. She dearly loved these children.

Johny’s curiosity was thoroughly aroused and he was eager to know more about this Muthassi. Thomas explained, “John, nobody knows much about her except that she is well informed and had come to live at Myladumpara after her retirement. This Muthassi soon became a myth in this village. The villagers were certain that the Muthassi loved their children and they in turn loved her dearly and went to listen to her stories everyday.

The children used to narrate the stories that they had heard from Muthassi, which soon spread like wildfire throughout the school and the village.

One evening as usual the children raced to Muthassi’s house eager to listen to her stories. But they were greatly disappointed that Muthassi was not at the entrance to welcome them as usual. Rather disappointed Anju opined, “it appears Muthassi is not at home.” The others agreed. “Yes, usually she’ll be on the verandah to welcome us.” Seeing that the door was unlocked Angela offered to go in and find out. But Anju intervened and reminded her “have you forgotten what Muthassi has taught us, that it is bad manners to enter a person’s room or house without knocking”. Angela apologized at once. “Sorry Anju, I completely forgot about that. I’ll ring the
The children greeted her, “good evening Muthassi.”
“Good evening children, I was in my library.”
Tiju exclaimed in surprise, “do you have a library of your own?”
Muthassi nodded. The children together “we would like to see your library.”

Muthassi, “of course, you’re welcome.” They dashed into the house eager to see Muthassi’s library. They were awestruck when they saw such a great collection of books neatly stacked on the shelves and began to survey the shelves for children’s books. Finding no children’s books Kevin remarked, “Muthassi, are there no children’s books in your library?”

“Kevin, what do you mean by children’s books?”
“I mean good story books.”

Muthassi, “Kevin I’m not a child so I don’t buy children’s books.” Anjana added, “Muthassi a library should have all types of books.”

But Muthassi pointed out, “that’s right Anjana in the case of public libraries, but personal libraries generally have a collection of books that cater to individual tastes.”

Anisa who had been listening carefully to all this commented, “reading scientific books, biographies etc. is really boring.”

Muthassi readily responded to this, “children we must first define the term interesting. Things that we like, things that we understand, things that give us pleasure are the things that are interesting. So it naturally follows that we must look at things that we don’t like with interest. But Alisa was doubtful, “Muthassi, how is it possible to understand difficult things in an interesting way?”

Muthassi, “I’ll explain. All things can be easily understood when related to things that we like.” Anjay wanted Muthassi to clarify it with an example. Muthassi readily, “of course. Please listen carefully. When muclo poly saccharide mixes with trypsin, the enzyme trypsin gets deactivated. Did you understand anything?”

The children looked rather perplexed and replied, “No Muthassi.” Muthassi continued, “I’ll put that in an interesting manner. Ducks eggs cannot be eaten raw or as bull’s eye, why?”

“We don’t know, Muthassi”, cried the children together.

Muthassi patiently explained it to them “duck’s egg contains muclo poly saccharide and if this mixes with the trypsin enzyme in the stomach, digestion will not take place and it will result in indigestion. But on the contrary if the ducks’ egg is boiled, the structure of muclo polysaccharide will be destroyed, and then trypsin enzyme will function properly and digestion will take place. That’s why we don’t eat duck’s egg in a raw form or in a half boiled form. The way in which we present things is important. Instead of stating scientific facts directly, if we relate it to reality it will be interesting. Well isn’t that an interesting piece of information.”

The children agreed, “of course, this is an interesting piece of information. Can you tell us more stories like this.”

“Okay I’ll tell you another story about calcium oxalate, a chemical. I’ll relate it to something that you are familiar with, which will make it more interesting. Some plants cause itching when it comes into contact with the human body. The reason is that the plant contains calcium oxalate. It will be more interesting once you understand its benefits. The children were really curious to learn more and eagerly asked Muthassi to tell them more stories. Muthassi, “This is enough for now. What I wanted to emphasize was that we
should always learn things in an interesting way. Even difficult things can be understood easily when related to known facts which will undoubtedly make it interesting. It will be all the more interesting once you understand its benefits.”

Angela, “Muthassi, what you are attempting to say is that studies can be really interesting when related to the different aspects of nature, am I right Muthassi?”

“Yes Angela.”

CHAPTER 3

The Story of the Ants

The next morning the children found Muthassi engrossed in watching the ants. Alisa was curious to know the reason. Muthassi said, “Alisa, I am trying to learn more about ants. Tiju faintly surprised, “Muthassi what is the use of knowing more about such minute and insignificant creatures like ants.”

“Yes Tiju, you have just stated a great fact of life; a universal truth. Human beings generally do things only if there is some sort of profit. Selfishness is the root cause of all problems. Unlike human beings, ants are not selfish.”

Anju very frankly, “ants are a nuisance, Muthassi, so what’s the use of learning more about these little creatures.” Muthassi quite pained, “Anju, it's not right for children like you to think in this way. People who appear insignificant are really the ones who make great contributions in this world. There are a lot of things that we can learn from the lifestyle of these ants.

Anjay said, “Muthassi can you please tells us more about ants”.

The children gathered around Muthassi eager to hear the story of ants.
“Though they are small creatures, ants lead a very disciplined life. There are around 14,000 varieties of ants in this world, yet these social beings live peacefully. Angela came up with a doubt ‘Muthassi aren’t there male ants?’

“Yes there are male ants, but most of these ants that we normally see are female ants. But when I finish the story you will understand,” consoled Muthassi.

“Okay Muthassi”. Anisa seemed pacified. Muthassi continued, “Ants are social beings and live as a community. The leader of this community is the Queen Ant. There are certain departments that function along with this queen. One department takes care of the health of the future generation, another is defense whose responsibility is to provide shelter and give protection from enemies. The third department is the food department which provides food for the entire community. Thousands of ants work together to gather food for the whole community. When they find food, they inform their friends. As they produce a secretion as they pass, it is easy for the other ants to find their way. The female ants provide food and water for the entire community. We can learn many lessons from ants, one is that ants are not selfish and they live together in harmony.

The different departments function smoothly dedicated to strengthen their fellowship. Secondly, ants are not concerned about rewards.”

Anjana greatly impressed by Muthassi’s moral teaching joined in, “yes, Muthassi you’re absolutely right. As children we are taught that doing good will be rewarded, either win a prize or go to heaven.”

Muthassi reiterated, “Yes those who do things for the sake of rewards will be undoubtedly disappointed. Ants are different.”

Kevin rather offended that male ants were ignored reminded Muthassi, “you have not said anything about male ants.”

“The male ants generally appear after the rainy season especially after the first shower. When the lights are switched on you might have noticed thousands of minute insects which are the male ants. They gather together in one place and this attracts the female ants. Wherever they find light all the ants gather together to mate. The female ant in which the male sperm is deposited becomes the Queen ant. After mating which is their only role, the male ants die. The female ants shed their wings and move along with the queen ant to some other haven, where she will begin her task of producing eggs, thousand of eggs a year, which will continue for 10-11 years. The food collected by the ants is shared by all.

Anisa doubtfully, “Muthassi who taught the ants these things?”

“Anisa, this is a natural law inherited in nature. That’s why I always ask you to learn from nature,” Anisa agreed with Muthassi “You are right, Muthassi. The lessons we learn from ants are: we must be sincere in our work, should be ready to share and then there should be co-operation, care and fellowship.”

Muthassi very pleased, “you are right Anisa, you have perfectly understood what I attempted to convey.”
“The earthworm is generally described as nature’s plower. In the philosopher’s terminology earthworms are the intestines of nature, as such they are known as the friends of the farmer. But most farmers are unaware of this and destroy the earthworms.”

The children painfully said, “Muthassi we normally love our friends and help them.”

Their curiosity was thoroughly aroused and they were eager to hear more. “Okay, first of all I’ll tell you how earthworms help farmers in farming. The earthworm’s main task is making small fissures in the soil and they move on the surface of the soil eating organic, natural and other poisonous microbes.”

As usual Anisa interrupted, “by doing so, how can the earthworm become a friend of farmers?”

“Now let me ask you a question, what is the farmer’s primary intention?” Anisa, “To get a good harvest, no doubt.”

“How can we get a good harvest?”

Alisa answered, “By treating the soil with chemical fertilizers.”

Muthassi added, “many farmers think that the yield would be better if chemical fertilizers are used. But that is a wrong notion.
She began to explain about the demerits of using chemical fertilizers for farming. “Excessive use of chemical fertilizers results in the increase of acidity as well as minerals in the soil, which makes it difficult for earthworms and microorganisms to survive. Moreover, even the structure of the soil will be destroyed. The use of pesticides will also have a similar impact.”

Anjay who had heard of organic farming asked Muthassi how was it possible to do farming without chemical fertilizers.

She explained this scientifically so that the children would understand it better. “Plants require certain essential nutrients like nitrogen, phosphorus, potash etc. Other nutrients are necessary only in small quantities. These nutrients are present in chemical fertilizers in a form that can be quickly absorbed by plants. The organic materials in nature also have these nutrients that are essential for plants but these nutrients can be absorbed by plants very slowly. The earthworms feed on organic matter and turns it into a form that can be absorbed by plants.”

Kevin asked, “Do you mean that earthworms perform a chemical action.”

“Yes, Kevin, not only chemical but organic too.” But Kevin seemed puzzled.

“I don’t understand Muthassi.”

“The earthworm moves by making fissures in the soil. Air passes through these fissures which is beneficial for the soil. This organic matter in the soil is made suitable for the plants to absorb. The poisonous microbes are destroyed by the earthworm. It also protects the plant nutrients from seeping away from the soil.” Anjana, “but everyone looks down upon the earthworm that does such a great service to the farmer.”

Muthassi, “what Anjana has said is true. There are many friends who do good for the society, one among them is the earthworm. Such creatures will undoubtedly be recognized some day. The earthworms are not recognized. As a result of chemical farming the earthworms began to die and the soil lost its vitality. This compelled the scientists and farmers to think of alternatives. When they realized the importance of earthworms in farming they began to encourage organic farming.” Anju agreed with Muthassi, “We should never be contemptuous of anyone as each creature is essential in this world. We must find intrinsic goodness in all creations.”
One morning the children eagerly gathered around Muthassi and asked, “what are you going to tell us today?”

“What type of story would you like to hear today?”

Angela suggested, “why don’t you tell us stories of stars?”

“Okay, I’ll tell you something about an insect that radiates light like stars. Do you know what those insects are called?”

The children together, “firefly.”

Alisa, “is there a story about fireflies?”

“Let us begin with the Chinese story of the firefly and the monkey.”

“Okay Muthassi.” The children agreed, eagerly waiting to hear the story. “One cold winter, a monkey, who had seen human beings making a fire by blowing, put a firefly in a heap of leaves and began to blow it slowly. The monkey had thought that by blowing he would be able to light the fire and keep himself warm. A bird watching this said that his attempt was futile. But the monkey ignored it and continued blowing. The bird again reminded the monkey that it was a futile attempt. The monkey was very angry and caught the bird and started plucking its feathers. Some how the bird escaped from the monkey’s hands and flew up and settled down on a top branch and warned, “If you advise fools you will lose your feathers”. This is the Chinese story of the firefly.

Alisa wanted to know if there was real fire inside the firefly. Alisa quite puzzled. Then, “How does it give out light?”

“The light that the firefly emits is not real fire but the result of a chemical action” said Muthassi.

The children together “we don’t understand.”

“If you are eager to know, I will explain. The firefly has an element called luciferin and emits an enzyme called luciferous which undergoes a chemical action that results in dehydroluciferin. This new chemical has a high energy state in which it cannot continue for
a long time. To attain its original state it sheds this energy in the form of light, which explains the light that is emitted from the firefly. Kevin wanted to know if this chemical action was continuous.

“Yes Kevin, this chemical action is continuous, it reaches a high energy state, then it releases this in the form of light and then returns to its original state.”

Tiju wanted to know the reason for this chemical action and the emitting of light.

Muthassi “Tiju, I will explain. Frogs croak to attract their mates. Similarly the firefly emits light to attract its mates. Anisa, “even if that’s the real reason, giving light in darkness is good.”

Muthassi agreed with Anisa and commented, “what Anisa has said is right. Even if something is done for personal reasons, if it would be helpful to others then it will definitely be a good thing.”

Anjay, “A help that requires no effort.”

“Yes what Anjay has said is right. Sometimes in helping people we have to spend our time, money and energy. It is a help that requires pains. When all this is not needed it is generally called a help that requires no pains.

Anjay “So today’s moral is about extending help that requires no pains.” “No Anjay, we should learn to do our personal tasks in such a way that it would be beneficial for others.” Tiju excitedly, “now I have understood clearly. Like fireflies we too should learn to shed light in darkness.”

Muthassi, “Yes Tiju”. She stopped her tale for the day and the children went back home happily.
“I will explain. During summer when the heat increases, the water in the seas start evaporating, when they reach the sky it transforms itself into clouds. These clouds move according to the direction of the wind. Mountains and trees intercept these clouds which cause rainfall. Kerala has an abundance of rain because of the western ghats on the eastern side. Tamil Nadu has less rain because there are no mountains to intercept the clouds. Do you know that if there is no water, it is very difficult to sustain life. Mountains are the gifts of nature.”

Anjay, “Muthassi, are there mountains all over the earth?”

“No Anjay, in the Arab countries there are deserts. Alisa expressed her doubt, “does the rain water flow down the hill sides to the river and seas.”

Muthassi, Alisa’s doubt is very relevant. As hilly areas receive a lot of sunlight there will be a dense growth of plants. The rain water that falls on the hill tops can be either absorbed by the plant and the water will seep underground, or flow down the hill side and transform itself into springs and rivers which will eventually reach the sea. Angela wanted to know whether the hill tops are not meant for cultivation but for wild plants and trees. If mountain tops are cultivated it will result in soil erosion, which will cause the soil to flow into rivers and back waters, causing problems. Anisa, “Muthassi, which is the best place for cultivation?”

“The best place for cultivation is undoubtedly the low lying areas.”

Anjay, “why?”

“I’ll tell you Anjay, the mountain’s role is to bring nutrient rich or fertile soil to the valleys or the low lying areas, when it rains the rich soil starts flowing down making the low lying areas fertile, which explains why people in the past, preferred to live in such areas. Anisa, “Muthassi, now I have understood that my conception of mountains was totally wrong and that mountains and hills play a very vital role in sustaining life on this earth.”

“Kevin, you might have forgotten that 2002 was declared as the ‘Year of Mountains’ by the UN to remind us of the role of mountains in sustaining the ecological balance.”

Children, “Muthassi we will tell our friends about what we have learnt today, they too must understand the significance of mountains.”
Chapter 7
Sustain the life of the soil

The next morning when the children reached Muthassi’s house, she observed Tiju’s soiled clothes and asked, “Tiju, why are your clothes covered with mud?”

“I was playing in the mud and I soiled my clothes.”

“Won’t your mother scold you for soiling your clothes?”

“Yes Muthassi, not only scolding, I may be punished too.

“All because of this mud.”

“So Tiju your enemy seems to be the soil.”

Tiju nodded in agreement.

Muthassi, “you should never say that for it’s the soil that sustains life.”

“How is that Muthassi?”

“I’ll explain Tiju. The soil becomes suitable for cultivation only after several centuries. Only when the nutrients mix with the soil does it become fertile and suitable for cultivation Microbes/ micro-organisms make the soil fertile. All edible plants required for food are grown in this soil.”

Anju, “Muthassi, do you mean to say that if there is no soil, there will be no food.”

“Yes Anju, life on this earth is sustained by the soil. We eat what we get from the soil and the waste is returned to the soil which is, ultimately transformed into organic manure.”

“Muthassi, will all waste materials be absorbed by the soil?”

“No Angela, plastics cannot be absorbed by the soil because they are not biodegradable.”

Kevin, “is there any problem in that?”

“Yes Kevin, things which are not degradable will become a problem for the soil. It will hinder the free movement of the soil and also obstruct the water from seeping underground. Plastics remain intact for many years.”
Kevin continued, “what about the use of pesticides in farming?”

“The use of pesticides is also dangerous because it is poisonous. When poison mixes with the soil, the micro-organism in the soil will die and the soil will become infertile and will eventually result in a poor yield.”

Anjay, “what about chemical fertilizers?”

“Yes Anjay that too will destroy the micro-organisms in the soil.”

Alisa quite puzzled, “So don’t we have to use fertilizers for cultivation?”

“Recent studies advocate the use of organic fertilizers for farming.”

Anisa opined, “so what we consider as ordinary soil is not at all trivial.”

“You’re right Anisa. What we generally consider as unimportant or trivial is not really trivial. We should not consider anyone or anything trivial or insignificant because each person or thing created by God has a specific role and purpose in this world. Therefore we should view everyone and everything reverently which is the first lesson in an ecological concept.”

Children, “Muthassi, we have learnt the first lesson in ecology, that is to consider all things significant and to view them with reverence.”

One morning the children gathered around Muthassi. Angela suggested, “Muthassi let’s go for a walk.” Muthassi agreed and said that walking is good for health.

Tiju, Angela, Anju, Kevin, Alisa, Anisa, Anjana, Anjay and Muthassi set out for a walk narrating green stories. They finally reached a water logged marshy land.

Angela commented, “Muthassi, these marshes are dirty places.” “What right do we have to label certain places clean and others dirty.”

Angela “Why can’t we?”

“Children, as I have already told you we cannot discriminate and label things as good and bad. Some things may be useful to some people and not to others.”
Alisa “Muthassi can you explain how these marshes are useful?”

“I will explain how these marshes are useful to nature. Marshes are water logged areas. During summer water sources dry up. Wells have their water sources in these marshes.”

“Muthassi, do you mean to say that we get our drinking water from these marshes during summer”

“Yes Anisa, during summer water is available only in marshy areas and the only source of water supply to needy areas. Marshy areas do not have water scarcity in summer.”

“So marshes should be protected.”

“Certainly, marshes have another ecological significance too.”

Alisa curious, “What is that Muthassi”? She explained that marshes have micro-organisms and plants and they are generally considered as a region rich in bio-diversity.
Kevin beginning the day’s conversation, “Muthassi, the other day you said that marshes are essential for maintaining the eco-balance.”

“Yes Kevin, marshes are the sources of water in summer and it also protects the biodiversity. As marshes have the capacity to filter harmful metals they are generally known as the earth’s kidneys.”

Kevin “Muthassi are the common people aware of the significance of marshes?”

“No not only the commoners, even those who pretend to have knowledge are quite unaware of this.”

“Why?”

“Poor observation! Keen observation is something that we should have developed right from childhood. We should view things closely and carefully, only then we will be able to understand things better. If we observe the environment closely we will be able to learn many things like this.”

Anju wanted to know the purpose of learning why the marshes are essential for the earth’s eco-balance.

Muthassi explained, “Anju, when ecologists understood the significance of marshes, ecologists from different parts of the globe gathered together and discussed the need to protect the marshes and also formulated certain policies.”

Anisa, “What are those policies?”

“Anisa, in 1971 delegates from different countries gathered together in a place called Ramsar in Iran and resolved to protect the marshes. The international assembly decided to bring the marshes under the control of the Ramsar convention.”

Anisa, “What is the use of bringing it under their control? Are there marshes in India which are under the control of Ramsar convention?”

“Yes Anisa, India became a member of Ramsar convention in 1982. Six marshes in India have already come under the control of Ramsar convention.”
“Can you name them Muthassi?”

“Of course Anisa, there are 26 sites in India.

- Ashtamudi Wetland, Kerala
- Bhitarkanika Mangroves, Orissa
- Bhoj Wetland, Madhya Pradesh
- Chandra Taal, Himachal Pradesh
- Chilika Lake, Orissa
- Deepor Beel, Assam
- East Calcutta Wetlands, West Bengal
- Harike Wetland, Punjab
- Hokera Wetland, Jammu and Kashmir
- Kanjli Wetland, Punjab
- Keoladeo National Park, Rajasthan
- Kolleru Lake, Andhra Pradesh
- Loktak Lake, Manipur
- Nalsarovar Bird Sanctuary, Gujarat
- Point Calimere Wildlife and Bird Sanctuary, Tamil Nadu
- Pong Dam Lake, Himachal Pradesh
- Renuka Lake, Himachal Pradesh
- Ropar Wetland, Punjab
- Rudrasagar Lake, Tripura
- Sambhar Lake (Rajasthan)
- Sasthamkotta Lake (Kerala)
- Surinsar-Mansar Lakes (Jammu and Kashmir)
- Tsomoriri Jammu and Kashmir
- Upper Ganga River (Brijghat to Narora Stretch), Uttar Pradesh

- Vembanad-Kol Wetland, Kerala
- Wular Lake (Jammu and Kashmir) are the ones under their control.”

Kevin, “Muthassi I have a doubt. We have so far referred to marshes as water logged areas, but the places that you have named are in reality meadows.”

“According to the UN all watersheds less that 100 mtrs. deep have been included under marshes.”

Alisa, “aren’t there marshes in Kerala?”

“Yes, but only one place is about to come under the jurisdiction of the Ramsar convention and that is Vembanadu Lake. This will ensure greater protection and care for the lake.”

Anisa, “so marshes have got international approval.”

This put an end to that day’s conversation.
“Yes, but this story reveals a great truth.”

“What is that Muthassi?”

“In 1998 only twenty-eight countries faced water scarcity. By 2025 this will become fifty-six and eight hundred and seventeen million people will face acute water shortage. That’s the reason why the UN wants to conscientise people regarding the importance of pure drinking water.”

Anjay, “we cannot - imagine a situation where there will be no drinking water.”

“Precisely Anjay, if there is no drinking water, life will be in danger.”

“What will we do Muthassi?”

“We must learn to use water carefully.”

Anjay “What can we do for that?”

She said that we should understand the ten water commons principles and change our life styles accordingly.

“Yesterday we discussed about marshes.”

Anjana, “Yes Muthassi. What are you going to talk about today?”

“Today I’ll talk to you about fresh water. The UN has declared 2003 as the Year of Fresh Water.”

Tiju, “why”?

“It is an attempt to conscientise people about the significance of freshwater.”

“But what is the need for that?”“Kevin, have you heard the saying ‘water water everywhere, not a drop to drink.’

“What does that mean?”

Once a fisherman went fishing with his friends and all of them got drowned in the sea storm. The fisherman who was the lone survivor was lying in his boat longing for a drop of water. He was surrounded by water but he could not drink even a drop because it was salt water.

“Muthassi, isn’t this familiar story?”
“What are they, Muthassi?”

She elaborated the principles:

i) Affirm water as a commons. It belongs to everyone and to no one exclusively, and must be passed on to future generations in sufficient volume and quality.

ii) Ensure that the earth and all of its ecosystems enjoy rights to water for their survival. Indeed, those ecosystems make human life possible.

iii) Conserve water as a social priority (enforced by law), including advocacy of drastic changes to industrial and agricultural practices.

iv) Treat watersheds, the source of our water, as a commons, as well as the water itself.

v) Encourage local, community management of water while legally requiring users to respect upstream and downstream neighbours’ rights.

vi) Create or reaffirm trans-boundary agreements that respect water sovereignty for all communities and nations.

vii) Provide everyone with water as a basic principle of justice, not as an act of charity.

viii) Ensure public delivery and fair pricing of water.

ix) Promote the right to water as a principle in national constitutions, laws, and a UN covenant.

x) Employ innovative legal tools to protect water and manage water as a commons, including public and community trusts.

“Tiju, “Muthassi the other day you taught us about the importance of water and that 2003 was celebrated as the Year of Fresh Water. What is the use of such celebrations?”

“That’s a good question Tiju. Generally many serious issues are taken up merely for the sake of formality. But in the case of freshwater, if certain serious steps are not taken it will certainly lead to drastic consequences.

“Why Muthassi?”

“Angela, if a crisis emerges where there is no drinking water, then death will be the only alternative. Therefore immediate steps should be taken to conserve drinking water.”

Anisa, “Muthassi, do you think it will be possible for us to do anything about it?”

“Anisa, of course we can. These are little things that we can do; little acts of great importance”.

Alisa eager to hear more, ‘Can you explain? “Alisa, do you know which place in India receives the highest rainfall?”
Anjana, “So Muthassi what can we do to prevent rain water from flowing off?”

“We must prevent rain water from flowing off the surface.”

“How?”

She explained “rain water harvesting. We must dig pits to collect rain water, the water will then seep through the soil and recharge ground water and thus prevent water scarcity. So its very important to devise strategies to prevent rain water from running off the surface. Do you want to hear how the rain water tells its story.”

“Yes Muthassi”

Do you think that I am a headache?. All headaches are due to misunderstandings. Proper understanding will remove all headaches.

See my case, I have been falling on the roof tops of your Church/School for the last so many years during the monsoons.

I have been running on land to reach the rivers and lakes.

If you would like to recharge ground water
The next morning the children eagerly gathered around Muthassi.

Angela, “yesterday you taught us two ways of conserving water, “have you anything more to say about water conservation?”

“Yes Angela, you must take care not to pollute water. If it gets polluted we will have to face the consequences” Anisa quite puzzled, “I don’t quite understand.”

“There is an interesting story behind that Anisa.”

“A story? how nice! we like stories.”

“This story is based on a real incident. In the beginning of the previous century a factory was setup in a place called Minamata in Japan.”

“Children, do you know where factories are usually set up?”

“No idea, Muthassi”

“On the banks of rivers, because factory waste can be easily diverted into the rivers. It is precisely for this reason that factories
both in the past as well as the present are set-up on the banks of rivers.”

Anisa impatiently “Muthassi have you forgotten about the story?”

“No Anisa. So the waste emitted from this factory polluted the river, and the fishes were contaminated. Consequently, the people who consumed the fishes were paralysed and several died as a result of this poisoning.”

Anjay quite alarmed, “will we die if we eat fish?”

“I didn’t mean that Anjay. What I meant was that if we eat contaminated fish we will fall ill.”

“What was the real cause of this pollution?”

“The factory waste emitted into the river contained a chemical called organic mercury. Since this disease was first diagnosed in Minamata, it came to be known as Minamata disease.”

Kevin, “it’s not necessary that all factory waste contains chemicals.”

“That’s true Kevin, but waste from all factories contain different types of harmful chemicals. I can give you other examples to prove this. Okay, I will give you another example from Japan itself. There is a factory located on the banks of river Jinsu in Japan. The factory waste emitted into the river contained a metal called cadmium. Just as we use the river water for irrigation purposes, they too made use of this river water for their paddy cultivation. The plants absorbed the cadmium metal along with the water which contaminated the grains. Consequently, the people who ate the rice from the paddy fields suffered from bone disease. The cadmium weakened their bones, which began to fracture easily. This disease came to be known as ‘Itai, itai.’

“So when water gets polluted does it become toxic?”

“Yes Kevin, that’s why it is important to protect water from getting polluted. This is also the reason why the UN declared 2003 as the Year of Fresh Water.” The children together, “Muthassi we have learnt a very valuable lesson that its not enough to conserve water but also to ensure that it does not get polluted.”
CHAPTER 13

River Networking

The next morning as the children gathered around Muthassi, Anjay announced, “the government has said that water scarcity can be easily solved by river net-working.”

“Yes Anjay, that’s what the government has said, but that’s not true.” Anjay argued “Muthassi, the government must have some justification for that.”

“Anjay, first let me talk about the government’s explanation. The rivers in North India are flooded during summer. But in our state rivers get flooded during the rainy season”.

Anjana, “why Muthasi?”

“I will explain. In South India the rivers depend on the monsoons but in the north, the rivers depend on the Himalayas. During summers the ice melts and consequently the rivers get flooded, on the contrary in the south as there is no rainfall during summer, the rivers dry up.”

Tiju came up with a suggestion, “Muthassi during summers if the excess water in the north is brought to the south we can easily solve the problem of water scarcity there, can’t we?”

“It is a very good idea Tiju, but there are several ecological problems.”

“Problems? what problems?”

“I will tell you Tiju, if the water of the river that should flow into the sea are diverted to flow on land, then saline water will start entering the land. What would be the consequence of that?”

“We will not get drinking water.”

“Yes Tiju. Then there are also water sheds that depend on rivers.”

“Which ones?”

“For eg. the waters of river Pamba, Meenachal etc flow into the Vembanadu backwaters, from which they eventually reach the sea. So if water, does not flow into the backwaters, they will begin to recede.”

Kevin asked if there was any problem in that? “Yes, I’ll explain with a historical story.”

The children together, “Muthassi, don’t you know
that we enjoy stories.” “Russia and the neighboring places together were formerly known as the Soviet Union. Aral Sea is a huge backwater in this country which was fed by two rivers Amu Darya and Sir Darya. The water from different parts of the country were diverted and consequently the water that flowed into the Aral Sea decreased considerably. The toxic effect of the waters led to the destruction of all forms of aquatic life and fatal diseases began to spread. Aral sea has thus become a living example of man’s excessive interference with nature. Alisa, “What you mean is that if man attempts to divert the waters of the rivers, he himself will have to face the consequences.”

“Yes Alisa, you’re right. I would like to point out one demerit of river networking.”

“What’s that Muthassi?”

“The rivers in North India are badly polluted. Through river networking the rivers in the South will also get polluted.”

Alisa, “so that government policy is wrong.”

“The attitude that man can use nature in any way that he likes should change.”

Chapter 14
Water is Precious

The children came racing to Muthassi’s house.

Anju, “Muthassi, yesterday you told us about the danger of water pollution. How can we conserve water?”

“I will explain. Water is precious and we must realize its value. We should not pollute water or waste it.”

“How?”

“Those who are aware of its value will not waste water, but conserve it.”

Tiju was curious to learn more.

“Tiju, water is conserved in dams, canals take this water to the needy areas. Even before it reaches its destination a great quantity of water will be lost.”

Angela, “How?”

“Angela, haven’t you seen the water flowing through the canals? The earth’s surface through which it flows will absorb as much water as it can.”
Anju, “Is there no other alternative?”

“Yes Anju, in Japan the water from the dams flow through pipes which can be regulated. Moreover the Japanese are very careful not to waste water.”

“Do you think that the Japanese are the best in water conservation?”

“No Tiju, there are other countries, as well. Israel is reputed for water conservation.”

“They distribute water to the fields through small pipes regulated by computers. They have programmed it in such a way that each paddy plant gets a spoonful of water.”

Kevin, “Muthassi isn’t that drip irrigation?”

“Yes”

“Our class teacher has already taught us about that.”

Water conservation can be done not only by countries but also by individuals.

Kevin, “Do we need pipes and computers for that?”

“No, we don’t need that. It can be done in a simple way. Take a pot and make a small hole in it, fill it with water and place it near the plant. It will get the required amount of water drop by drop for many hours. In this way we can conserve water with least wastage.”

“So drip irrigation is a suitable method of water conservation?” asked Anjay.

This brought them to the end of another interesting day.
The next morning the children again met at Muthassi’s house.

Anjana, “Yesterday you said that if a war breaks out in this century it will be for water. You also stressed the importance of water and that 2003 was declared as the ‘Year of Water’ in order to conscientise people about the significance of water. Muthassi have there been water wars in the past?”

“Anjana’s question is a very pertinent one. It’s essential to know the past history. In reality all the wars in the previous century were fought for water.”

Kevin, “Can you tell us about that Muthassi.”

“I will Kevin. In a situation where there is no water to drink, death will be the only outcome. So each country will attempt to monopolise the water sources.”

Anjay, “Muthassi can you tell us more about this.”

“Yes Anjay, let’s take the case of Israel. The water from river Jordan was used by countries like Israel, Jordan, Syria, Lebanon and West Bank. Israel utilized the waters of the river and the ground water of West Bank for industrial purposes. Israel has only 3 percent of the river bank, but takes sixty percent of the water from Jordan.”

Anjay, “Isn’t that unjust Muthassi?”

“Yes Anjay. The root cause for the present war between Israel and the neighboring countries is undoubtedly this. In the 1967 war Israel captured West Bank and Golan hills as it is the source of fresh water. Israel utilizes eighty two percent of the water and West Bank and the remaining twelve percent is used by Palestine. Israel would not allow the Palestinians to dig wells of not more than 140 meters depth; but Jews dug up to 800 meters.”

“Isn’t this a great injustice Muthassi?”

“Of course. Might is right is the current policy. The neighboring states protest against Israel’s selfishness, which eventually breaks out in the form of wars. Similar wars have broken out in other countries too.”

Kevin, “Muthassi can you name those countries?”

She explained that the water of the world’s biggest river, River Nile is shared by ten African countries. When one country uses the river water excessively, the neighboring countries will not get sufficient water which will eventually break out in the form of wars.
Anjay indignantly, “every one needs water, so how can the selfish acts of some countries be justified?”

“In places where there is no justice or order, there will be no peace. Where there is no peace the possibility for the outbreak of war is greater. Turkey and Iraq squabble over the waters of rivers Tigris and Euphrates. A controversy over the water of river Colorado exists between the US and Mexico.

“Aren’t there similar problems in our country also?”

“Of course. In our country most rivers flow through different States. There are quarrels, between the different states. Haven’t you read about the issue between Tamil Nadu and Karnataka over the waters of river Kaveri.”

“Yes Muthassi we have read about it in the newspapers. How can we prevent these quarrels over water?”

“There are certain international rules and regulations for a just distribution of water.”

“Can you tell us more about it?”

She promised to tell them the next day.

Tiju greeting Muthassi, “Yesterday you talked about water wars and promised to tell us about the laws formulated to prevent such wars.”

“Yes Tiju I will tell you.”

Anisa a little puzzled, “how is it possible to formulate laws for each country?”

“I will explain. When countries squabble for water, solutions are made based on the principles put forward by the individual countries, so these laws will be known by that particular place name.”

Tiju, “Muthassi, are there any principles regarding the sharing of river waters?”

“Yes Tiju. I’ll explain. Harmon principle was formulated in the context of the controversy between America and Mexico over the waters of Rio Grande. The state in which the river bank is located will have complete authority of the river according to this principle. Kevin, “do you mean to say that the other states through which the river flows have no right?”
“Yes Kevin. It may be the denial of natural justice in this principle that might have been the reason why this principle did not gain popularity. In 1896 America which refused to give Mexico the waters based on this principle gave the water rights to their neighboring country in 1906. In 1944 they gave the water of river Colarodo to Mexico under the same consideration. India too, holding on to the Harmon principle gave the water of river Sindhu to our neighboring country, Pakistan.

Tiju, “that’s a gift.”

“Yes Tiju, that’s why a new principle was needed. A principle that all the regions through which a river flows should have right over that river.”

Tiju, “which country put forward this principle?”

“Britain formulated this principle. The flow of the river should not be obstructed. But the Helsinki rules on International rivers is the most popular one today. The law that has been formulated is the most acceptable one. The water of international rivers should be shared equally according to need. But this has certain faults. The countries which are more powerful will be able to convince others about their argument.”

Anju, “then how can laws that are acceptable to all people be formulated?”

“Anju, we should have a renewed insight of the brotherhood of humanity and of justice.”

“How?”

“Water is the gift of God and of nature. Water is everyone’s right so it cannot be monopolized by anyone.”

“Can you explain Muthassi?”

“Let the river flow freely. Like human rights rivers too have certain rights. It’s the rivers right to flow freely, when that is denied, nature will react and it will culminate in natural disasters.”

Anjana, “Is this applicable only for rivers?”

“Anjana that’s a good question. Everything in nature has the right to exist, when that right is challenged then it will naturally react. So we must treat nature reverently.”

Muthassi stopped for the day with the advice that we must all respect nature.
CHAPTER 17

Dams

The next morning the children gathered around Muthassi. Anjay came up with a doubt, “can’t we conserve water by building huge dams?”

“Yes Anjay, that’s a fine idea, one way to conserve water. The necessity for building huge dams is being widely discussed today.”

“When huge dams are constructed, more water can be conserved and more people can get its benefits. When India got independence, the architects felt that dams could distribute water for a larger area and electricity could also be generated.”

Angela, “Muthassi did that work?”

“I can explain that only with the help of certain figures.”

“We have 3600 dams of which 3300 have been constructed after Independence. Thousands of dams are still being constructed. Inspite of all this, not even one fifth of the total population in our country get sufficient drinking water. Almost 200 million people do not get sufficient drinking water and 600 million people do not get water to meet their basic needs.”

“That’s really bad, Muthasi.”

“Yes Angela.”

Alisa, “is it right to say that our government’s calculation have been proved wrong?”

“Yes Alisa, undoubtedly it has.” I’ll explain in greater detail. In the last fifty years the amount spent for water distribution is 87000 crores. Today more places are affected by floods and drought than in 1947.”

Anisa, “is this the reason for the protests against the Narmada Reservoir?”

The Narmada river basin project is a very big river basin project. A heated controversy is raging over the 1200 dams constructed over the Narmada river and its forty one feeder rivers.

Tiju, “Muthashi, why should there be controversy over that?”

“I’ll explain Tiju. Thirty dams are big, 135 dams are medium and the rest are small dams. Because of these dams about twenty four million people living in the valley will become homeless. Similarly 4000 square kilometres of forests will be covered by water.”

“Muthassi isn’t it enough to build houses in the town for those who have lost their homes?”
“According to the Indian government norms for land taken up by the government, only money will be paid as compensation. Just imagine the situation when money is given to the illiterate tribes.”

Tiju, “let’s request the government to give them land instead.”

“Yes Tiju it’s quite unreasonable to dislocate twenty five million people from their own homes. This project is of no use to even half the population.”

Anjay, “such projects should definitely be abandoned.”

“Yes Anjay, experience has proved that huge dams will not solve the problems and invariably will not benefit the people for whom it was intended. Many people will lose their lives.”

“Shouldn’t we protest against this?”

“Medha Patkar, a woman activist has already conscientized the people of the Narmada Valley and organized a people’s movement called Narmada Bachao Andolan.”

Anisa, “isn’t that a protest against injustice?”

“Yes Anisa. It’s an encroachment on the right of the river to flow freely as well as the people’s right to live. We must protest against both these things.”

Anjay beginning the day’s discussion, “the other day you told us about the conflict between countries over the water issue. Today can you tell us some thing about the rivers in India.”

“Okay, I will tell you about river Sindhu which is connected to the history and culture of India.”

Anisa, “how?”

“I’ll explain Anisa. It is believed that the Aryans came to India from Persia. They named the river Sindhu because the water expanse of the river could be compared to the sea. As it was difficult for the Persians to pronounce “si” it was known as ‘Hindu’ and the inhabitants were also known by that name. Now the river
is known as Indus. River Sindhu is known as one of the longest rivers in the world, 2880 km. in length and the total length of tributaries is 6000 kms.

Kevin, “is river Sindhu the longest river in the world?”

“No, the longest river in the world is the river Nile. But the quantity of water is double that of the river Nile. The catchment area of River Sindhu is 11,65,000 square kms.”

Anjay, “what do you mean by water catchment area?”

“The area from which the river gets the water is known as the catchment area. The catchment area of river Sindu is the Himalaya and the regions surrounding it.”

Tiju, “Muthassi, which are the places through which the Sindhu flows?”

“Tiju’s question is a very pertinent one. River Sindhu flows through Pakistan and India. Both the countries would have become desert regions if it had not been for the waters of river Sindhu.”

“We need not have given the water to Pakistan.”

“No Tiju, water is God’s gift and all God’s creatures have a right to water.”

This left the children with some food for thought.
“There is a reason, starting from the Himalayas extending to the Vindhyas mountains and similar regions this great river flows slowly over 2500 km until it reaches the Bay of Bengal. Among the other rivers that have their source in the Himalayas, Sindhu, Brahmaputra etc. the Ganga has greater significance.”

Kevin, “What is the significance, Muthassi?”

“More than 30 crore people live on the banks of the river Ganga, which is considered 15th in Asia and 39th in the world. The river in its long journey from Himavan to the sea, along with its feeder rivers have given shape to different cultures on the plains that it has created that have attracted different races since ancient times. The Ganges plain includes more than half of Uttar Pradesh, Bihar, West Bengal and Bangladesh. In India the biggest population and agriculture is found on the banks of this river. This region which is known as the central point of India is of historic importance. Ganga has the greatest number of feeder rivers.”

Anju, “Which are the feeder rivers?”

“Yamuna, Rama ranga, Gomati, Kali, Tapti, Gandaka, Bagamati, Kosi, Sone are the main feeder rivers.”

Anjay, “Does river Ganga have a special status.”

“Yes Anjay, the Hindu pilgrimage centers on the banks of the Ganga have great importance.”

Anju, “good morning Muthassi. It’s really hot today.”

“Yes Anju, the heat is unbearable. The heat is increasing year by year. It’s the impact of human abuse of nature.”

“How? can you explain?”

“The main reason for global warming is because of a gas. Can you tell me which is that gas?”

The children together “We don’t know Muthassi.”

“It’s Carbon dioxide. Have you heard of it?”

Anjay, “yes Muthasi.”

Anjay began to talk about what he had learnt about carbon dioxide. “When animals breathe, they breathe out carbon dioxide. When plants prepare food they take in carbon dioxide.”

“Anjay what you’ve said is right. Plants take in the carbon dioxide from the atmosphere for the preparation of food, so the Carbon dioxide level in the atmosphere was balanced.”
“Has the balance been upset?”

“In this modern era we have started felling down trees and a lot of plants have been destroyed in the process. This has resulted in the increase of carbon dioxide in the atmosphere, which has been further increased by the carbon dioxide emitted from factories and vehicles.”

Tiju, “so that’s the reason for this global warming.”

Tiju, “Carbon dioxide has certain properties. It will not allow the heat trapped in the atmosphere to escape. This is known as the ‘Green house effect’. For this reason the heat in the earth will increase.”

“What will happen if the heat increases?”

“When the heat increases the ice on the ice capped mountain will begin to melt which will result in the rise of the sea level. When the sea level rises many countries will be submerged under water. The increase in heat will adversely affect the agriculture resulting in the scarcity of food”.

Kevin, “this carbon dioxide seems to be a villain.”
Anjay, “Yesterday you told us that excessive carbon dioxide is the cause of global warming but our teacher taught us that there are other gases as well.”

“That’s right Anjay. But carbon dioxide is the main culprit. All the other gases together have only 50% responsibility.”

Alisa, “what are the other gases Muthassi?”

Muthassi, “methane, chloro-fluoro carbon, ozone, nitrous oxide, water vapour. Among these nitrous oxide and water vapour have only a minute share of 4%.”

Angela, “Can you tell us about these gases in detail.”

Muthassi, “Yes Angela. I’m sure all of you have seen methane gas. Have you noticed the bubbles coming out of the cow dung pits? That gas is known as methane gas which is produced excessively in marshy areas.”

Tiju, “can’t we use this gas Muthassi?”

“Yes of course. As this gas burns well it can be used in the kitchen as biogas. Now, the gas that is emitted from biogas plants is none other than methane gas.”

Anjay, “what about chloro-fluoro carbon?”

“This is the gas that is used in refrigerators.

Anjay, “is this the gas that destroys the ozone layer?”

“Yes Anjay, as there is a lot to say about it, I will tell you about it another day.”

“Ozone gas is usually found on the earth. It is generally seen about 12 km way from the earth. Nitrous oxide is a gas that is commonly found in the soil. Water vapour is a condition where water becomes vapour. These gases together are known as Green House gases. This phenomenon of global warming is referred to Green House effect.”

Children together, “today we have learnt about Green house gases isn’t it Muthassi.”

“Yes children,” said Muthassi with a smile.
“The other day I told you about the gases that are responsible for global warming. I also explained about green house effect and green house gases.”

“Yes Muthassi.”

“Today I’m going to ask you a question. The children together, “is that really necessary Muthassi?”

“A good student should always be curious.”

Muthassi, “What is Kyoto Protocol?”

The children were rather perplexed as this was the first time that they had heard this term.

“Children, Kyoto is the name of a place and protocol the agreement regarding what I had been saying.”

Anjana, “where is that place Muthassi?”

“It’s the name of a place in Japan. In 1997 all the countries in the world assembled in Kyoto to study the ways to reduce the gases that led to the phenomenon—Green House effect. They decided to reduce these gases that were responsible for climate change.”

Alisa, “does each country have a share in producing these gases?”

“Yes Alisa. But it is mainly the industrialized nations that emits a greater quantity of carbon dioxide into the atmosphere. Developed countries have greater number of industries. So naturally it is these countries that emit a greater amount of carbon dioxide into the atmosphere thereby causing global warming.

Anju, “so these developed countries are the real culprits.”

“To a certain extent that’s right Anju. That’s why all the nations are requesting the developed countries to reduce the amount of carbon dioxide emissions.”

Anju, “so Muthassi that must have been the reason why the heads of the different nations gathered together in 1997 in Kyoto.”
“Yes Anju, the assembly at Kyoto decided to reduce the amount of Green House gases. This decision in the assembly is known as Kyoto Protocol. According to this Protocol the countries producing the greatest amount of Green House gases must necessarily reduce the amount of carbon dioxide emissions.”

“Did all the countries accept this decision Muthassi?”

“That’s the strange part. America and Australia have not accepted this,”

Angela “Shouldn’t we protest against that?”

“That’s right Angela. The other countries are trying to convince these nations. Therefore the Kyoto Protocol has attracted the attention of the world.”

Anjana, “Muthassi the other day you told us about the Kyoto Protocol. Are there any more protocols like this?”

“Yes Anjana”

“Can you tell us about that?”

“Today I will tell you about the Montreal Protocol.”

“Okay.” The children were ready to listen to a historic, scientific and ecological protocol.

“In 1987 all the world leaders assembled in Montreal located in Canada, and took certain crucial decisions. These resolutions are known as the Montreal Protocol.”

Anju, “what are the decisions they made?”

“I’ll explain, Anju. Do you all have a fridge at home?”

“Yes Muthassi.”

“Let me ask you a question. What is the name of the gas that is used for cooling a fridge?”
The children looked rather troubled,

"in the Lord’s prayer we pray lead us not into temptation. But today it seems that God has not heard our prayers."

"Anju we must face questions, it is cowardice to be afraid of questions. Anju “we can face it only if we know the answer.”

"Okay, then I’ll tell you. The gas is known as chloro flurocarbon. Recent researches have shown this gas to be harmful."

Anju, “why is it harmful?”

"Yes Anju, sometimes this gas is harmful though it is very mild. But when this gas moves upward it begins to destroy the ozone layer, which covers the earth like an umbrella.”

Anjana, “it is just like children who are very good at home, but troublesome outside.” Anjana was curious to know what would happen if the ozone layer is destroyed. “This ozone layer protects us from the harmful sun rays.”

Anjana, “What will happen if these harmful rays fall on the earth?”

“Anjana, it will cause skin cancer, cataract, changes in plants etc.”
The Mother of the Ecological Movement

Angela greeting Muthassi, “what are you going to tell us today?”

Today I will tell you about a famous woman ecologist. Everyone who deals with ecology must necessarily know about her. All over the world environmentalist cannot discuss environmental problems without reference to her.”

The children together. “Then why didn’t you tell us about her earlier.”

“Children we are living in a big world. There are innumerable happening in the world which will never end.” Tiju “we are eager to hear about her.”

“Her name is Rachel Carson.”

“Was it Rachel Carson’s Silent Spring that made her world famous? What is the message in the book that has made her so famous?”

“Silent spring is about the adverse impact of chemical pesticides on nature. When this book was first published in 1962, there was a great controversy raging over this in America.”

Anisa “Muthassi can you please tell us more about this.”

“It was in an age that considered pesticides including DDT as wonderful for pest control that Rachel Carson talked about the drastic or adverse impact of this on human life, in her book.”

Kevin, “can you tell us about the adverse impact?”

“Kevin, when pesticides are used they destroy not only pests but other insects as well, which may even become extinct. As the poison in these pesticides will persist for many years it will have an adverse impact on the future generations. Silent spring is a story that deals with certain significant observations on nature. This book has also been able to give certain warnings to humankind regarding the adverse effects of pesticides. Rachel Carson has been able to promulgate certain suggestions for environmental protection through her book.”

“Can we call Rachel Carson the mother of ecological movements?”

“Yes, of course Kevin. It is undoubtedly the Silent Spring which has inspired the environmental protection movements. All of you must necessarily read this book.”

The children promised to read more about Rachel Carson and her book.
“Yes Anisa. Globally DDT has been accepted as it destroyed mosquitoes that spread malaria, as well as other insects.”

“Then, why is DDT considered harmful now?”

“As the poisonous element in DDT persists for several years, Rachel Carson discovered that certain insects would be completely wiped out.”

Alisa “Muthassi, is this really true?”

“It is true Alisa, in English this is known as Persistent Organic Pollutant (POP). As the poison remains active for many years DDT is considered to be a very harmful pesticide.”

“Is DDT the only pesticide that comes under POP category?”

“No, BHC, Lindane, Endosulfan etc are all harmful pesticides. As it’s very poisonous it should be used very judiciously.”

Angela, “Muthassi, how do the factories that manufacture these pesticides react to this book?”

“The factory owners began to argue that what has been said in the Silent Spring is wrong.”

“Muthassi, how did Rachel Carson prove that what the owners said was wrong. “Experience proved it. Rachel Carson was very upset because she was personally persecuted?”

“Why did they do that Muthassi?”

“Those who are afraid to face the truth very often make personal attacks to discourage those who stand up for the truth. To withstand this, I’m trying to mould you into people of moral courage.”

“Thank you Muthassi.”
CHAPTER 26

Will We Become Ecological Refugees

Anjay excitedly, “what are you going to tell us today?”
“I’ll talk about ecological refugees.”
Anjay, “what is that Muthassi?”

“Have you heard of refugees?”
The children revealing their ignorance, “No Muthassi.”

“Refugees are those who are forced to leave their home land because their basic needs cannot be met.”

“So why should they leave their home land?” The children were rather puzzled.

Imagine that a war breaks out. Those living on the borders will leave their homes and move to safer places. If enemies attack one village the people will shift to the next one temporarily. Such people are known as refugees.”

Kevin, “but why ecological refugees?”

“When ecological disasters or calamities take place those people who are compelled to leave their homeland are known as ecological refugees.”

Tiju, “Muthassi will such natural disaster happen in future?”

“Of course Tiju” said Muthassi, “when floods occur, some places may be submerged, then people will have to leave their home land and migrate to other places. In their new homes they will be considered refugees.”

Anjana, “Muthassi can you give us some examples.”

“Yes, in China almost 4000 villages are in the process of becoming deserts because of water scarcity. In Nigeria 3500 square kilo metres of land become deserts annually. In 1985 the Chernobyl nuclear tragedy rendered thousands of people homeless. If global warming continues at the same pace, Bangladesh will be submerged and nearly 20 million people will become refugees.”

Angela, “that will be really terrible Muthassi.”

“Yes Angela, according to a global study there were 5000 refugees every day. In 2010 this increased to 8,500.”

Anisa involuntarily, “my God, will we too become refugees.”

“Yes that is possible. But if all of us together attempt to protect the environment, then we may be able to avert this danger. Let us unite together to protect our earth.”
Children, I am going to tell you a new story. Anjay excitedly, “what is that new story Muthassi?”

“Today’s story will give you new insights in life. Are you ready? Listen attentively to this story.”

Anju, Anjana, Anjay, Tiju, Kevin, Angela, Alisa and Anisa nodded together.

“I am sure all of you have heard the story of the hare and the tortoise.”

Tiju, “yes Muthassi we have learnt the story in school.”

“I am going to narrate a different version of the story. Listen carefully.”

The children excitedly, “okay Muthassi.”

Muthassi narrated the original story.

Once a hare and tortoise decided to run a race. The hare was very confident of being the winner. But unfortunately his overconfidence led to his ruin. The hare rather contemptuous of his rival’s sluggishness slept for a while during the race. Meanwhile the slow and steady tortoise moved on and won the race.

Anju disappointed, “but Muthassi, we know this story.”

Muthassi, “Though you know the story, can anyone tell me the moral of this story?”

Kevin promptly, “even if we are slow, hardwork and persistence will bring success.”

“Clever boy, students who are poor in studies can attain great heights through persistent hard work.”

“Let me tell you another version of the story. The hare regretted his mistake and realized that it was his over confidence that made him careless and lazy and led to his failure. In order to overcome his failure, the hare once again approached the tortoise and suggested that they compete again. The tortoise readily agreed. Having learnt his lesson the hare was very cautious this time and he won the race.”
“The second part of the story raises certain questions, why did I fail? Was it due to my carelessness and laziness? I had the potential, but I failed to make optimum use of it in curricular and extracurricular activities. A self examination is essential for success. All of us must necessarily go in for self examination.”

“Definitely we will,” declared the children.

“Tiju, what is the moral of the second part?”

“Persistence, alertness and speed are essential to succeed.”

“Very good.”

“Now let me narrate the third part of the story. The tortoise too realized his mistake in competing with the hare, a swift runner. It was really foolish on his part to compete in an area where he had no competence. The tortoise having discovered his ability invited the hare for another race, but this time the tortoise decided the route. To reach the finishing point they had to run two kilometers on the road, cross a river and again run one kilometer. The hare agreed and ran swiftly till he reached the river, he was unable to cross it. Meanwhile the tortoise slowly crossed the river and reached the finishing point. The hare was left behind and he sadly realized that it was foolish to rush into any competition without analyzing its possibilities.

Anjay, “we don’t understand the moral of this part.”

“All living things including tortoises are created by God with a specific purpose. Some people consider themselves unintelligent, but that is a wrong notion. There is no unintelligent student in this world. When a student attempts to learn a subject for which he has no aptitude he may seem poor in that subject. Every student is talented in one way or other. Anjay, can you summarize what I have said so far.”

Silent Rhythm

“The tortoise learnt two things. He was slow but he had a special talent. He could easily move both on land and water. Secondly it was foolish on his part to compete with the hare a swift runner.”

“Anjay, you are right.”

“Like the tortoise each student should identify his/her talent which is essential for success. There are several extra-curricular activities in the school, which is a platform for students to identify their latent talents. All students must necessarily make optimum use of these talents which is the key to success.”

“Now let me tell you the fourth part of the story. After the three competitions, the hare and the tortoise became good friends. They had proved their talents and felt it was use less to compete with each other. So they decided to work as a team and compete once again. The hare started to run with the tortoise on his back. When they reached the river, the tortoise swam with the hare on his back and the hare ran the remaining distance with the tortoise on his back.” When they reached the finishing point, the hare cheerfully said, “Brother through team work we can do all things quickly and also effectively face challenges that come our way.”

The tortoise agreed, “Yes brother, we need not compete with each other, on the contrary we can do things more effectively as a team.”

“Can anyone tell me in a nutshell what I have been attempting to say so far?”

Anisa instantly, “Team work is the key to success.”

“Yes Anisa, we can do things more effectively through team work.”
Chapter 28

Climate Change

The children greeting Muthassi, “It’s too hot, Muthassi!”

“I know all of you are exhausted, but unfortunately there is no power supply, so I cannot switch on the fan. Anyway refresh yourself with something cool to drink.”

Ninety year old Muthassi is still young in mind. After tea they got ready for their usual discussions.

Anjay, “Muthassi it seems this power cut is because there is no sufficient rain.”

Anju, “but last week we had heavy showers, so how can you say that?”

Anjay, “it is better to say that it is the end of the world.”

“Anjay you need not attribute it to the end of the world. It is our exploitation of nature. Climate change is the result of global warming.”

Anjana, “Muthassi, How can global warming effect climate change?”

“Anjana, this is mere common sense. Climate change is the result of global warming. Unseasonal weather conditions will invariably result in crop failure, food scarcity, poverty and new diseases.”

Anjana, “what kind of diseases?”

Have you forgotten about the attack of chicken guinea in your neighbourhood?”

Anjana, “that was a nightmare. It’s best to forget such unpleasant things.”

Alisa, “Muthassi, other new diseases have also started appearing apart from malaria.”

Muthassi, “it’s the outcome of global warming. Not only new diseases have appeared, the melting of ice has resulted in the rise of sea level and consequently the submergence of the low lying areas.”
Kevin doubtfully, “Muthassi do you really think that such things will happen? Isn’t there a limit to frightening us.”

Muthassi smiling, “don’t think that I am trying to frighten you. I am only trying to apprise you of the present scenario. All this has been scientifically proved. I will explain it. Developed countries in the name of development indulge in activities that emit carbon dioxide and other gases into atmosphere which eventually led to global warming.”

Anju, “it’s better to think globally and act locally. Can you tell us what we can do.”

Muthassi, “Anju we can do a number of things. We must develop good habits like conserving forests, planting saplings which will absorb carbon dioxide in the atmosphere. Have you seen God’s farming?”

The Children laughing, “has God started farming?”

Muthassi, “children don’t laugh. I am not joking. Man does not farm in the forest. So who does farming there? Yes, only God can do farming there. If we follow God’s farming pattern, there will be no pest attacks. Moreover, as the soil in the forest is covered by grass, the suns rays do not directly fall on the soil, so it doesn’t lose its moisture. Chemical fertilizers and pesticides are not used in the forests and there is no mono crop cultivation. Hence, plants growing in the forests are healthy.”

Alisa, “what sort of cultivation is that? Can farming be done without chemical fertilizers?”

Muthassi, “yes, Alisa, as I told you earlier the use of chemical fertilizers and pesticides in farming hastens the process of desertification. Chemical fertilizers destroys the microbes in the soil and makes it infertile. Global warming also hastens desertification.

Another important finding is that in the production of chemical, gases that increase the temperature are produced. Therefore organic farming should be popularized.”

Angela came up with an idea, “Muthassi instead of lighting the ceremonial lamp for inauguration, I suggest that we inaugurate by planting saplings.” Muthassi welcoming Angela’s suggestion, “What Angela said is right. This habit of planting a sapling instead of lighting the lamp should be encouraged. Another new approach is planting a sapling in the name of the distinguished guests. Its absolutely necessary to protect the trees and plant fresh saplings wherever possible to sustain the life of this beautiful universe.”

Alisa, “Muthassi, can we reduce global warming in this way.”

Muthassi, “that’s not enough Alisa. Climate change will disrupt nature’s rhythm, unseasonal rainfall will pollute rivers. It’s the monsoon floods that purify the rivers.”

Alisa rather perturbed, “Muthassi do you mean to say that floods are good. How can you say that when people suffer a lot during floods?”

Muthassi, “floods are a natural phenomenon. During the monsoon floods the impurities on the land and rivers must necessarily be washed off into the backwaters and seas. Just as we bathe to cleanse of our bodies, these annual floods are essential to cleanse the land. If the floods do not wash off these impurities from the land contagious diseases will spread. Moreover, the sea creatures are waiting to feed on these impurities.”

Angela, “Muthassi is it true that the water level in our wells are dropping because of sand mining?”

Muthassi, “yes, unfortunately it is true. The only way to handle this is to prohibit sand mining. When river beds deepen, there is the danger of the sea water encroaching the land. The mass planting of
vetiver, with its three meter long roots will strengthen the river banks, purify the impurities, enhance the underground water table."

Anisa, “it is a wonderful plant. Muthassi do you mean to say that rivers can be protected by planting vetiver on the river banks.”

“That is not enough, Anisa, rivers face several problems. Everything that is dumped on land will eventually reach the rivers. To protect the rivers, invariably the land too must be protected.”

Anjay, “do you suggest that rain water harvesting pits will solve water scarcity?”

Muthassi, “if we dig rain water harvesting pits in our yards, we can solve our drinking water problems to a certain extent. To reduce the impact of global warming the underground water table level must be maintained. Likewise, we should save energy by using smokeless ovens and using solar energy. Also we have to encourage the use of public transport systems.”

Anju, “Muthassi, we have learnt so many things in today’s discussions. You have taught us invaluable lessons.”

Alisa, “Muthassi do you know what time it is. Its more than one and a half hours since we began our discussions.”

Muthassi, “Yes I know. You must tell many people about this. That will be our humble effort to save our planet.”

“Good morning children, now I am going to tell you a biblical story from an ecological perspective. Are you ready to listen to the story.”

Children eagerly, “yes Muthasi, we are always ready.”

Muthassi, “God commanded Noah to build an ark to save his creation from floods. He commanded Noah to take into the ark, two pairs of all creatures both male and female, as He did not want any species to become extinct. God also wanted His people to understand that each species had a specific role to play in sustaining this universe and all species were interdependent. Noah obeyed God.

It rained forty days and forty nights and everything perished in that great flood and only those in the ark escaped.

Angela, “Noah saved not only people but animals and plants too?”

Muthassi, “Yes Angela. Noah was the first ecologist according to the Bible. He was the first person to acquaint us with the importance of biodiversity.

Angela, “Muthassi, who is an ecologist?”
Muthassi, “Angela one who protects any living creature from extinction is called an ecologist. If we want to live happily and peacefully in the world we must be an ecologist like Noah. Don’t you also want to be an ecologist like Noah”.

Anju, “of course we also want to be ecologists.”

Muthassi, “The greatest ecological problem that the world faces today is global warming. Just imagine that God is going to destroy the world with heat instead of floods and he asks you to build an ark to escape from the terrible heat. Imagine that your church premises is the ark.”

“First, a plant approaches Noah (yourself) asking, “Can you give me a room in your ark?”

“Who are you?”

“I am vetiver, a plant of Indian origin?”

“What is your contribution to society?”

“My ecological activities are innumerable. I have the ability to raise the water table level and prevent landslides. My roots are used for Ayurvedic medicines and the oil for perfumes. As my roots are three meters long, it helps to strengthen the soil and prevent landslides. My strong stems make strong fences that last for more than sixty years. Once my roots are firmly rooted in the soil, I can withstand heat and floods. If I am planted in polluted areas I can reduce the pollution. If I am planted on the river banks and sloping land, I can prevent landslides and soil erosion. My leaves can be used for making baskets and handicrafts items.”

“Unfortunately nobody knows the great service that you are doing in this world.”

“That is right, many people are unaware of this.”

“I am really privileged to speak to a great species.”

“Not at all. I am only doing what ever service I can. Today’s greatest problem is climate change which is caused by the increase of gases like carbon dioxide, methane, oxides of nitrogen in the atmosphere. I have the ability to absorb methane gas.”

“I didn’t know that you are so great. Definitely you will have a place in the ark.”

The next species that came was the worm that resembled an ant, a contemptible looking creature

“What do you want?”

“Please allow me also to enter your ark!”

“What allow you to enter my ark? I have not seen such an unpleasant creature like you!”
“Never say that. Haven’t you heard how Jesus rebuked when someone said something similar to this.”

“What?”

“Peter the apostle while in a trance saw a vessel full of creatures considered unclean, descending from heaven. But God said to Peter that all the creatures that he had created are good, none unclean”.

Noah surprised. “What are you quoting from the Bible? Okay what is your role in sustaining life in this society?”

“God has given us the task of disintegrating the dead bodies and merging them with the soil.”

“So, you are the termites that destroy the wooden frames in our homes?”

“Oh please don’t say that; we don’t touch anything that has life. The wooden item that you want, you paint and maintain. We only work on the what is lying waste. Waste must be destroyed otherwise it will create problems.”

“What problems?”

“When creatures die they must necessarily disintegrate and merge in the soil, that’s nature’s law. If its left lying around it will cause ecological problems. So our task is to disintegrate and merge the dead matter into the soil.”

“I am so sorry that I despised you. But you are doing a great job of returning to dust all that has been created from dust. You are really great, please come in.”

“The third species that came along was the common grass which people generally consider as nuisance; for it grows fast and is very difficult to maintain.”

“Who are you?”

“I am the common grass.”

“What is your role in society?”

“I am nature’s mantle. I grow wherever I find soil.”

“That is true. Its so difficult to clean and maintain the yards around our homes. I am not interested in you. You are a nuisance.”

“Please don’t say that. You wear clothes to protect your bodies from heat and cold, similarly I am the soil’s clothing and I cover the bare soil.”

“Why do you cover the bare soil? Isn’t sunlight good for the soil?”

“If the sunrays fall directly on the soil, it will lose its moisture and eventually dry up. This dryness will lead to desertification, or the death of the soil. When all the microbes in the soil die, the soil will lose its vitality and that area will become infertile and eventually a desert. So I prevent the sunrays from falling directly on the land.”

“So when sun-rays fall on your leaves what will you do?”

“I will take the energy from the sunlight and convert it into food.”

“How?”

“I will tell you.”

The sun is the greatest source of energy in the world. You cannot get this energy directly, but I can. I will convert that energy into carbohydrates and give it to you as food.”

“So you are the one doing the greatest service in the world.”
“Not at all. I am only doing my duty. But people look down upon me in contempt and treat me very badly, though I play a very significant role in protecting the universe.”

“I am sorry for treating you contemptuously. Please forgive me. You are actually involved in God’s plan of protecting the earth. So when I insult you I am in fact insulting God. I will never again do so. I welcome you wholeheartedly.”

“The fourth species was the common crow. Noah did not like its appearance. He angrily asked “What do you want?”

“Please give me room in your ark?”

“If you become extinct, nothing is going to matter.”

“Don’t you say that”

“Why?”

“I am nature’s sweeper. I clean the waste and prevent the outbreak of contagious diseases. I am indispensable and you cannot exist without me.”

“I am really sorry. You may also enter.”

The fifth species to appear before Noah was the frog, the despicable creature, which can exist both on land and water.

“What is your role in society?”

The frog introducing itself, “I don’t harm anyone, I only do good.”

Old Noah opening his mouth in disbelief, “You do good, is it?”

“Yes uncle I do good only!”

“Okay tell me about it.”

“Okay I will tell you. While you sleep I don’t remain idle, I eat all the pests that come my way.”

“How do you do that?”

With my tongue. I have a very long tongue which is kept folded; when the pests roam around at night I put out my long tongue and trap them for food.”

“What good does that do to human beings?”

“It protects them from contagious diseases. You cannot survive if these pests multiply. These pests will destroy food grains and spread diseases.”

Noah was astonished by this new information about frogs. He saw a long queue in front of him. Noah realized that contemptible creatures have done so much good for human beings. Noah prayed “Lord forgive me.”

Then he opened the Bible and began to read. He asked himself, “What right do I have to discriminate the clean and unclean. Why should I act as a Super God?”

Standing at the entrance of the ark Noah announced; “Respected brothers and sisters, God did not create anything without a purpose, all that He created has intrinsic value and are interconnected, a ring in the chain of biodiversity. The extinction of one species will rupture that chain. I will admit all of you into the ark and save you from the great heat due to climate change and unseasonal rainfall.”

The lizard as well as the cobra cheerfully entered the ark, reminding us of certain lines from the Psalms. “All animals from the forests and all creatures from the mountains belong to me. I know all the birds of the mountains, the creatures of the valleys also belong to me.”
Noah responded, “praise God. The earth and its fullness thereof; the world and those who dwell therein”

Those inside the ark as well as those in the queue responded, “Amen.”

The next morning when the children greeted Muthassi, she noticed that all of them were rather gloomy.

Muthassi, “What happened children? Why are you so gloomy?”

Anisa sadly, “Our vacation is over. Tomorrow we have to go back to school. Time has flown and we can hardly believe that two months are over. We really enjoyed this vacation and we are sad to leave.”

Muthassi, “So that’s it. Don’t worry children, time will fly and soon you will be back for the next vacation. I am sure our discussions have been very informative and you have learnt new things. When you go back to school you must share what you have learnt with the other children.”

Angela promised, “we will Muthassi.”

Muthassi, “Today being our last discussion, can you tell me what you have learnt.”

Anju promptly, “we have learnt a lot about this beautiful universe created by God, and how He expects us to take care of it, to be the stewards of creation.”
“Muthassi, we will certainly take care of our precious earth.”

Muthassi, “very good Anju”

Anjana added, “you have taught us the importance of water, soil, mountains, rivers, marshes, small insects etc. and that every thing in creation has intrinsic value.”

Muthassi, “very good Anjana.”

Anjay, “We have also learnt that all creations – human being, animals and plants are interconnected, one cannot exist without the other, so we have to live together in harmony”.

Muthassi, “very good Anjay”

Tiju, “We have also learnt about different protocols- kyoto protocol, Montreal protocol, Ramsar convention etc and the international efforts being made to mitigate the carbon dioxide emissions”.

Muthassi, “very good Tiju.”

Kevin, “now we are fully aware of the present global warming, its causes and impacts. Climate change is a very serious issue that has to be addressed.”

Muthassi, “very good Kevin. I am really happy that all of you have been enlightened through our discussions.”

Alisa, “Muthassi, let us sing our favourite song.”

Muthassi and the children sing together:

O Lord my God when I in awesome wonder
Consider all the works thy hands hath made.
I see the stars, I hear the mighty thunder;
Thy power throughout the universe displayed.

Then sings my soul, my savior God to thee,
How great thou art, How great thou art.”

Muthassi, “it’s really a meaningful song that reminds us of this wonderful creation of God. So its our great responsibility to protect this beautiful universe. You can become more responsible if you bear in mind certain principles.”

Angela eagerly, “what are those principles? Muthassi please tell us.”

Muthassi, “Angela there are six principles. The first principle is the principle of intrinsic value”

Alisa, “what do you mean by that?”

Muthassi, “It means that God created everything with a value and nothing in the universe is neither waste or useless, everything from rocks to rainbows have value and a role to play in sustaining the universe. Have you understood?”

Alisa, “yes Muthassi.”

Muthassi, “the second principle is the principle of purpose.”

Anisa, “what is that Muthassi?”
Jesus Bids us Shine

Muthassi, “all of us in the universe have been created with a purpose. Don’t you remember what I have said about ants, frogs, etc.”

Anjana, “oh, yes we remember each creation has a specific role to play in sustaining this universe”.

Muthassi, “that’s right, even creatures that we consider useless have special tasks to perform. Next is the principle of interconnectedness.”

Angela, “what is interconnectedness?”

Muthassi, “interconnectedness means being dependent on each other for life and survival.”

Angela, “do you mean that we are interconnected with the animals?”

“Yes Angela, we cannot exist alone. People, plants and animals are all interconnected in this web of life and every member is essential in keeping this web in balance. The loss of one species will break a link in the web which will weaken the harmony of whole web.”

Angela, “so do we belong to one family?”

Muthassi, “yes. The next principle is of mutual care.”

Anju, “can you explain this principle?”

Muthassi, “Since all the components in this universe are interconnected it is important that we care for each other.”

Anju, “that’s why we need to take care of animals and plants and they in turn provide food for human beings.”

Muthassi, “yes that is right. The fifth principle is voice.”

Silent Rhythm

Anjana, “Muthassi do plants have a voice?”

Muthassi “yes of course. All things in the nature have voice. It is a silent rhythm. The disruption of the voice of one species can adversely affect the total harmony of the universe. Is it clear Anjana?”

“Yes Muthassi”

Muthassi, “the last principle is resistance.”

Anjay, “resistance means to fight or react.”

“Yes Anjay, if you don’t follow the above principles, nature will react through earthquakes, floods, climate change etc. Over exploitation or abuse of natural resources result in nature’s resistance.”

Anjay, “Muthassi can’t we prevent these calamities by preventing the exploitation of natural resources?”

Muthassi, “of course we can Anjay. An awareness of these principles will make you more responsible stewards of creation. You can do your part.”

Alisa doubtfully, “but Muthassi how can the eight of us alone protect this vast universe?”

Muthassi, “of course you can. Haven’t you heard that it’s the tiny drops of water that makes the mighty ocean. Jesus bids us shine with our little candles to lighten up and save this planet with our humble efforts and preserve it for our future generations.”

Jesus bids us shine

With a pure, clear light,

Like a little candle

Burning in the night.

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Jesus bids us shine

With a pure, clear light,

Like a little candle

Burning in the night.
In this world of darkness
So we must shine
You in your small corner
And I in mine"

The children inspired, “yes Muthassi, we will”. Muthassi “Okay children. Goodbye for now. May God almighty take care of you till we meet again.”