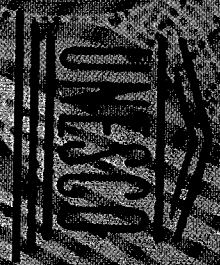


EARTH DAY IN THE PACIFIC ISLANDS



A collection of essays and positions on the theme: **EMPEROR PAVSOTAYU THE ATMOSPHERE**



SOPAC

Mobil



Acknowledgements

UNESCO Samoa Office in providing the funds for the compilation, editing, type-setting and printing of this booklet.

SOPAC Publications and Library Unit, particularly Mr Reuben Vulawalu, for the designing of the booklet.

Mobil Fiji, WWF and the Energy Offices in Fiji, Niue, Samoa, Tonga and Tuvalu for their assistance in organising the competition.

Foreword

The publications in this booklet is a collaborative effort of the SOPAC Energy Unit and Energy Offices in Fiji, Niue, Samoa, Tonga and Tuvalu with funding provided by UNESCO Samoa Office.

To mark Earth Day 2001, SOPAC together with WWF and Mobil Oil Fiji, organised an essay and poster competition for schools in the Pacific islands. The theme for the competition was "Energy, Transport and the Atmosphere". This was also the focus of discussions at this year's Ninth Session of the Commission for Sustainable Development (CSD9) held at New York in April in which a Pacific Islands Energy Sector Paper was tabled.

The creativeness and imaginary minds of the younger generation in the Pacific islands are clearly displayed in the art work and through the essays that entered the competition.

The essays and posters are published as they were entered into the competition.

We hope that readers will find the booklet interesting and informative.

SOPAC Energy Unit

Who am I ?

I am rich, fair and nutritious

And of great importance to you

When you are hungry

You come to me

And I offer you more than just a feed

But while I give life

I take, I can destroy, and my powers
are great

But today, I weep like a shepherd

Losing its sheep

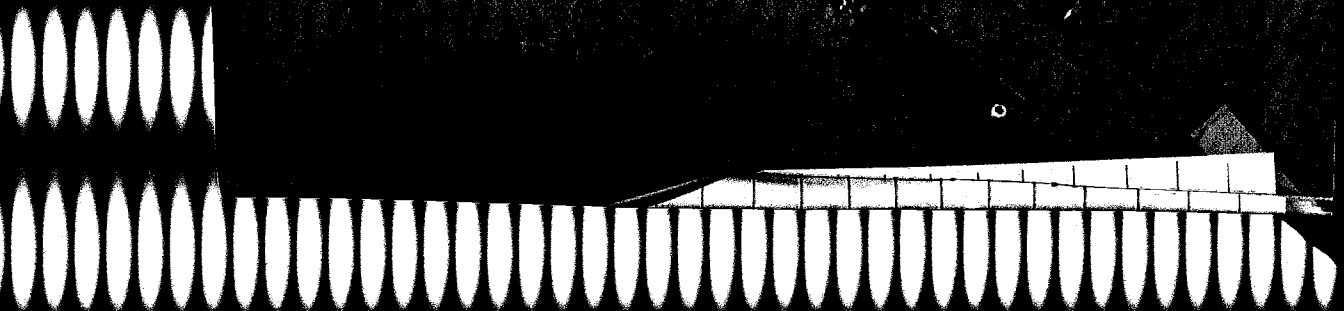
And slowly I die and no one recognises

That if I fade you will too

Who am I ?

I am the Earth.

Kunal Animesh Kumar Reddy, Lautoka.



Let's save the Earth - Binay Vikash, Lautoka, Fiji Islands

You

CHOOSE

Your

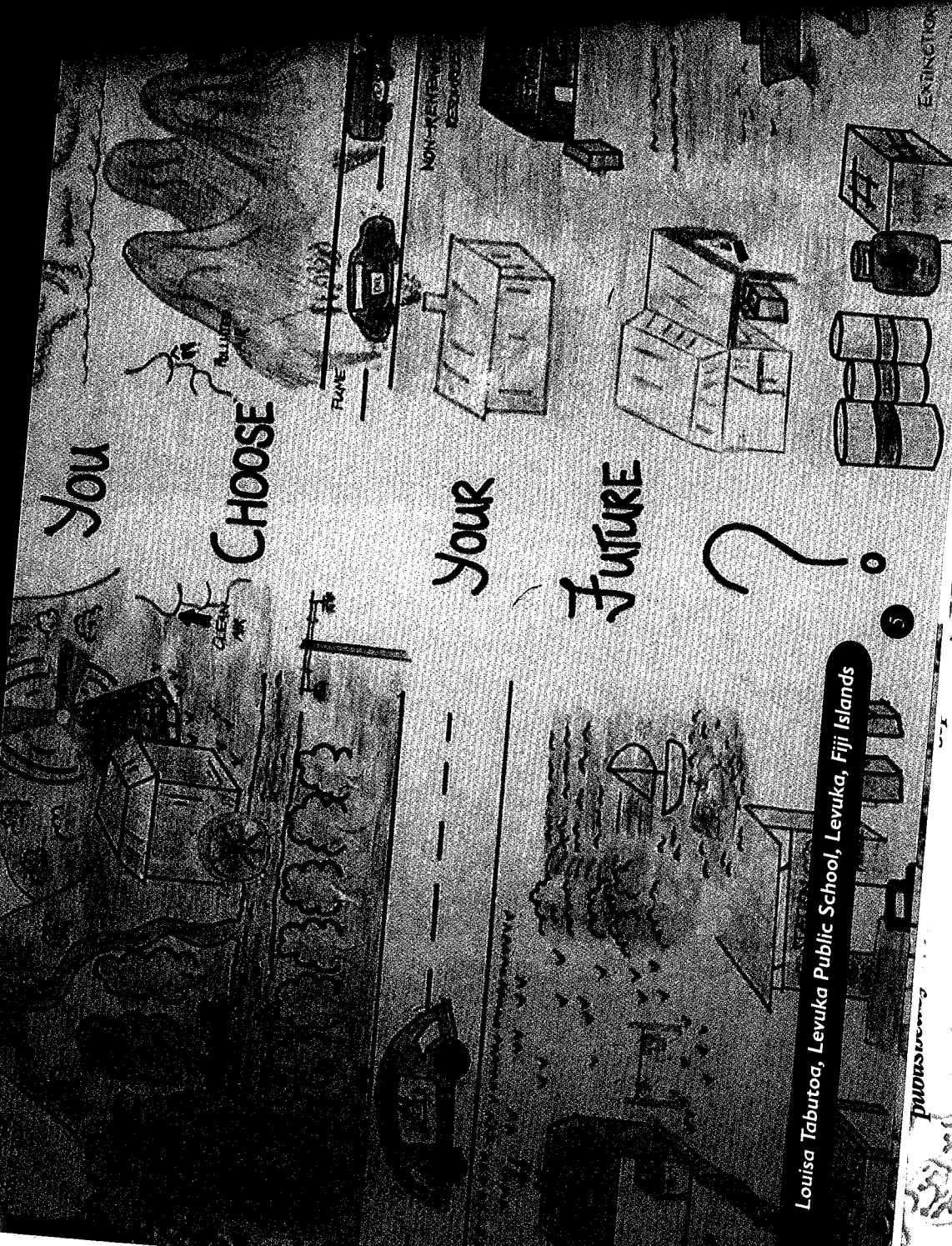
FUTURE

?

Louisa Tabutoa, Levuka Public School, Levuka, Fiji Islands

publishing

EXTINCTION



Our Environment

In Samoa, there are lots of things that pollute the environment. Cars, machines, motorcycles and sprays, all of these affect our ozone layer. They also pollute the air that we breathe, and now it is time to stop.

But how do we stop. Do not drive "smoky cars" and motorcycles or maybe don't drive these automobiles at all. Don't use anymore CFC sprays. We could use roller blades or bicycles or scooters that don't have any motors. Staying in a country that is polluted is not very good. Some factories should get cleaned and chimneys should be fitted with filters.

I have seen countries that are far worse than Samoa. We should clean up our planet, Earth. Arrange a day to clean up the environment. Factories should stop working and help in the clean up. Clean up our sea and don't cut any more trees.

Start recycling paper, plastics and tin. I think it is time to help Mother Nature survive. We have a big hole in the ozone layer. Antarctica is melting and that causes sea levels to rise. Now we need to stop the pollution.

*Jason Hunsell
Vaiala Beach School
Samoa*

Stop World Pollution

Pollution these days are getting worse. Nothing much has being done about it, though everybody talks about minimising pollution. Something will happen, but only when the hole in the ozone layer is huge.

One solution to solve the problem is to plant more trees, but trees are constantly being cut down for building houses and making furniture. Millions of trees get cut down for countless reasons. Paper is made out of trees but not much of the used paper has being recycled. Every country should recycle paper, do not throw it away or get it burnt.

Another solution is to find different ways to power cars. This could be electricity, fuel cells, solar or gas. Only a few of them are being presently used, as they are more expensive then petrol and diesel. One day, petrol and diesel will run out. Then how do we travel? Walk or cycle is the answer.

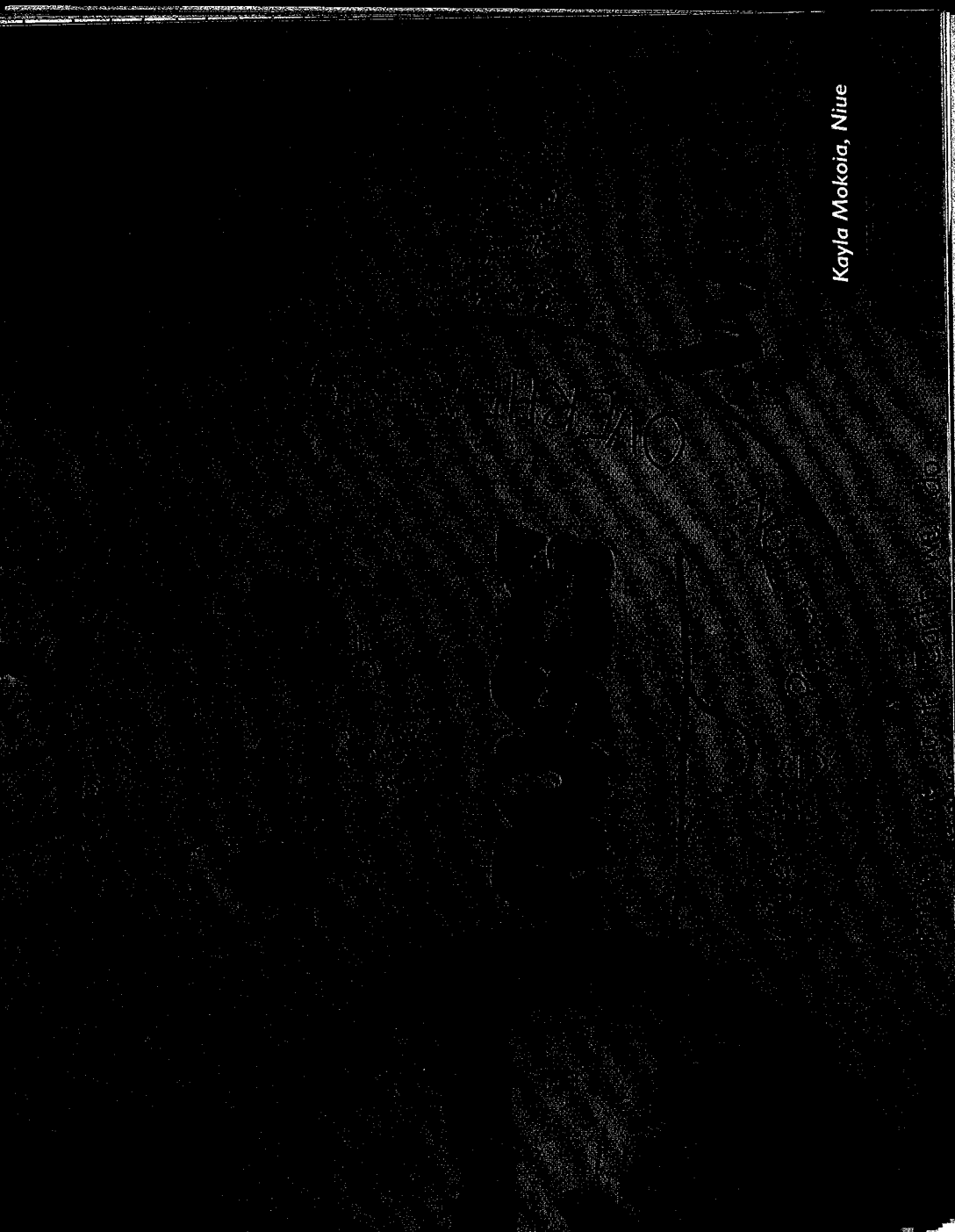
Factories, cars and power stations are the major contributors to the thinning and the making of holes in the ozone layer. A way to solve these problems is to use renewable energy technology and conserve energy.

Aerosol sprays and fridges also affect the environment by the CFC gases in them. Fridges are very useful for storing food but a lot of people have more than one fridge. Large families are the excuses for having more than one. There are already CFC-free fridges, which are good. People should buy them.

The environment will improve, so will the health of everyone.

*Damian Marquardt
Vailala Beach School, Samoa*

Learne R Anita, St. Nicholas Primary, Honiara, Solomon Islands



Kayla Mokoia, Niue

World Pollution

All over the world there is a lot of pollution which causes damage to the environment and people's health in Samoa, we are lucky to not have much pollution. We have clean air and clean water. But this is changing. Waste water from people's homes and also from factories just flows into the ground. Very few people in Samoa bother to have a septic tank. All kinds of pesticides and chemicals are just dumped or leached on the ground and the island's ground water is getting more polluted. This is a big problem because the ground water flows into the rivers and then the fresh river water is used for drinking. We have Typhoid and other diseases here now because of the contaminated water.

In Samoa people use pesticides very carelessly, for example: In 1997 the Japanese government funded the supply of a special chemical to control the spread of the African snails. They sprayed every where, in people's land with out even asking and then contaminated the soil and crops. Many people were taken to the hospital because of this and it didn't even get rid of the snails.

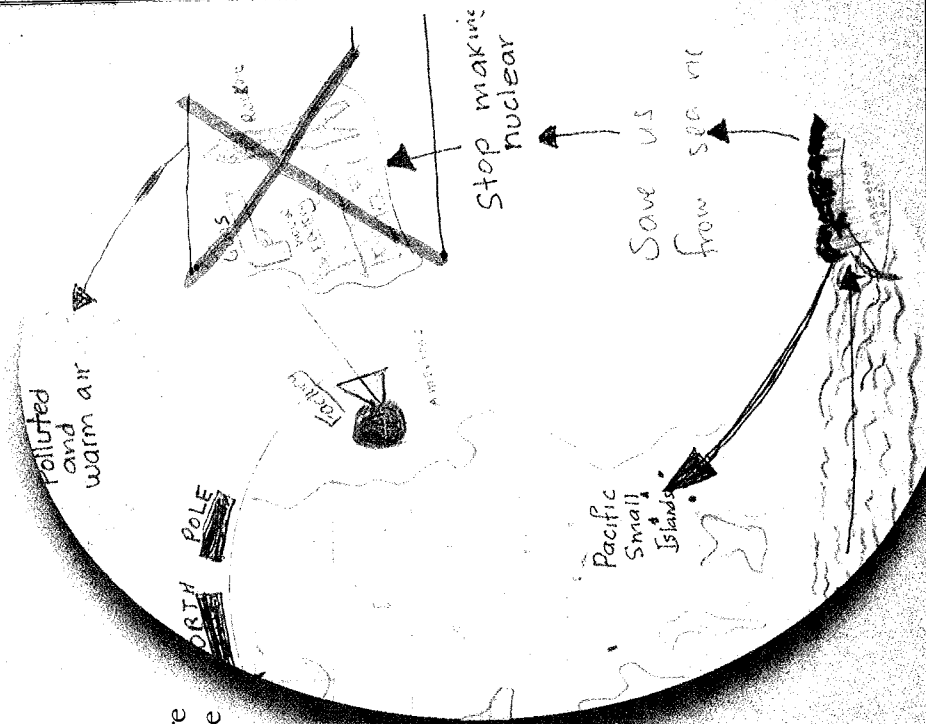
All around the world there are cars and other products that cause pollution. Pollution is changing the earth's atmosphere so that it lets in more harmful radiation from the sun and people can get skin cancer more easily and sunburn. A lot of places in the world have power plants that give off smog which is not good for the environment. We all should take care of the earth, our home, and not destroy it. Cars are also not good for the environment because of the exhaust which comes out of the muffler; it is not nice to breathe dirt and smog. People don't really have to use cars all the time, they could walk and take buses instead of having a car. If there were only a couple of buses in a city there won't be so much pollution.

Most people just dump their rubbish or toxic waste anywhere; they should instead recycle products more often and that will decrease the amount of pollution. CFC (chlorofluorocarbons) is a very harmful chemical to the environment. CFC gases

the ozone layer so that more radiation passes through. There are holes in the ozone layer, one over the north pole and one over the south pole. That is very dangerous for low lying islands such as the ones in the Pacific. Every year the water level is rising so in time, coastal cities and the atoll islands in the Pacific will be completely under water. Last year at the Hague meeting there was a summit. Representatives came from all over the world and places like Tuvalu had sent someone because they were very worried about their islands disappearing someday and also about pollution from toxic waste.

I am lucky that there are a lot of mountains and I live on a high island. The only problem is that if the holes increase we could be in trouble.

*Perical
Beach School*



Tositapu Toafa, Tutasi Primary School, Nukufetau, Tuvalu

Kirchener Wheatley, Woodford International School, Honiara, Solomon Islands

Senior Category

*The sun shines upon the islands,
It affects everything on the Earth,
Birds in the sky, fishes in the sea
and living creatures on land,
Changing atmospheric conditions
affect weather patterns and
transportation,
The tiny islands disappear due to
rising sea levels, - effects of global
warming.
This is not a good sign for many
years to come,
Now is the time to step-up control
measures and the campaign to
save our Earth.*

An Explanation of the Painting on the left

Energy, Transport and the Atmosphere

The rhetoric increases, the symptoms proliferate, the problems exacerbate, the doctors continue to debate, and the patient continues to deteriorate. In giving the planet Earth a physical examination, we find that the planet borne out of an inferno of fire is slowly burning out of existence. The seeds of destruction that mankind had so naively sown are now bearing fruit.

The Earth, just like any other planet of the solar system is enclosed in a thin shell of gases called an atmosphere. The atmosphere clings tightly to the Earth by the attraction of gravity. The atmosphere serves to moderate the extremes of heat and cold on the Earth. During the day as the heat of the sun penetrates the air and warms the Earth, the atmosphere traps this heat so that it escapes more slowly into space, making the night warmer than it would be without this effect. The atmosphere also protects the Earth's inhabitants to some extent from cosmic rays, radiation from the sun and stars, atmospheric dust, and other hazards.

Scientists increasingly agree that the Earth's atmosphere is becoming warmer. A long-term rise in the global temperature could cause sea levels to rise and bring a number of other adverse consequences. Reliance on fossil fuels as an energy source and the soaring number of vehicles on the highways are chiefly responsible for the carbon emissions – the so-called greenhouse gases that lie behind global warming. As the gases increase, more heat is trapped within the atmosphere, and the worldwide temperature edges upward.

Energy is the basis of industrial civilization; without it, modern life would cease to exist. The civilized world depends on energy much as the human body depends on food for life and strength. Energy derived from fuels power our daily lives and makes modern transportation possible.

the over zealous use of energy derivatives, especially fossil fuels, have led to catastrophic environmental conditions of atmospheric pollution. With the advent of gasoline, the cars have become the vehicles carrying the death warrant of the atmosphere. Gasoline is never completely burned in the engine of a car, just as coal is never completely burned in the boiler of a steel mill. Once they are released into the air, products of incomplete combustion particulate matter (soot, ash, and unburned hydrocarbons, carbon monoxide, sulphur dioxide, various nitrogen oxides, ozone, and lead compounds) form a series of chemical reactions in the presence of sunlight. The result is the dense haze characteristics of smog. Prolonged exposure to smog damages lung tissue.

In 1970, the first Earth Day, marked a remarkable deviation of the people from their normal unenthusiastic and indifferent ways to one of vivacity and environmental inclination. Earth Day, the events leading up to it and its aftermath, changed the way people perceive their environment and this in turn has led to measures aimed at sustainable resource-use.

In accordance with the doctrines of Earth Day and in the best interests of humanity, governments need to modernise existing energy systems to be energy efficient. Governments also need to promote national energy efficiency and emission standards, to develop efficient, cost-effective and less polluting mass transit systems.

Turning to renewable sources, such as wind, solar, and geothermal energy is another improvement in conservation and striving for clean energy. Renewable energy sources are increasingly competitive in price compared with fossil fuels, and they cause less air and water pollution.

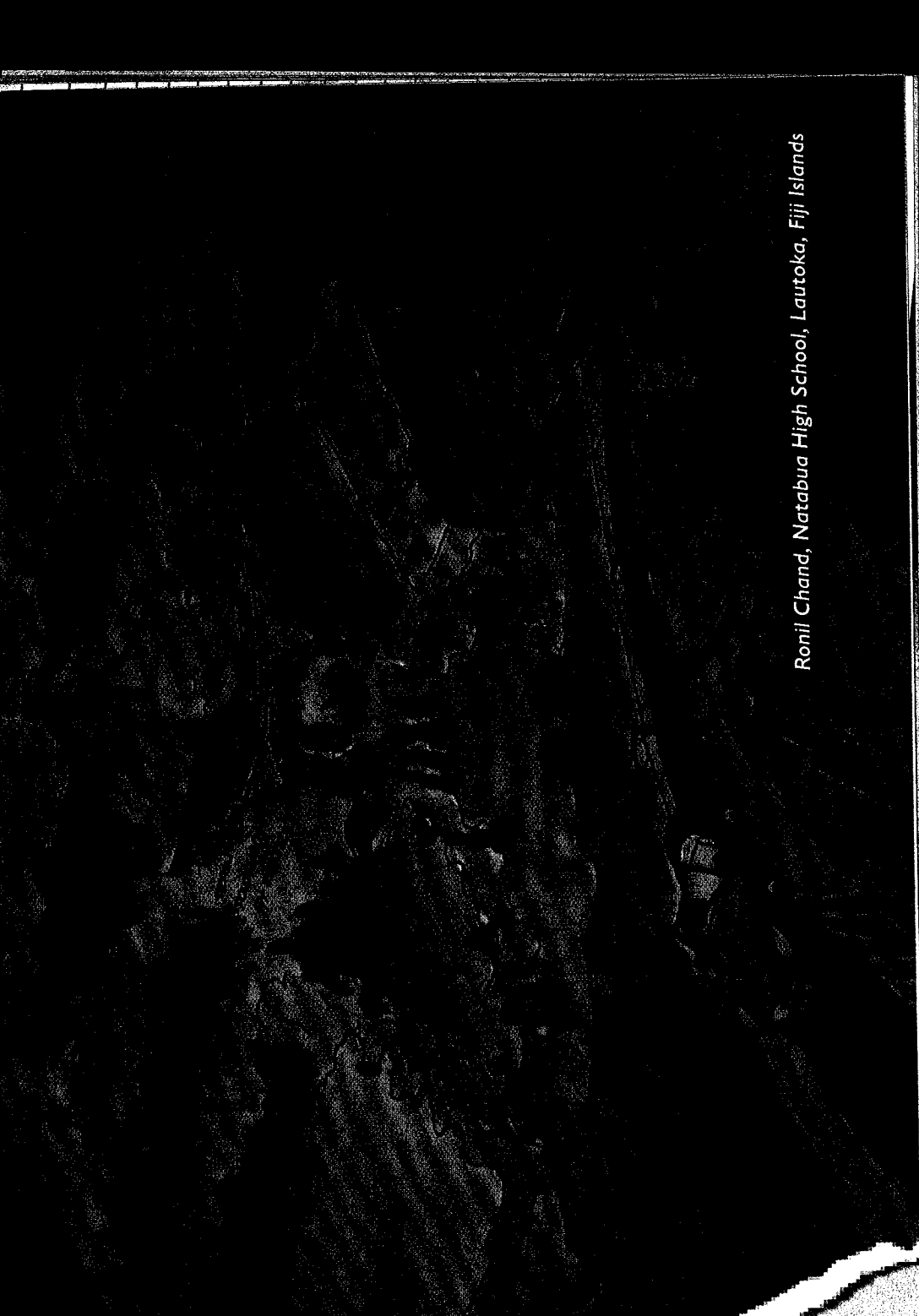
Improving the design and use of low-energy buildings, eliminating government subsidies for fossil fuels, encouraging energy efficiency programmes in industry, and investing in public transportation are also some actions that could help reduce energy consumption.

Another encouraging energy conservation strategy is the introduction of "hypercars". Hypercars are vehicles that run eighty to hundred miles (129 – 161 km) per gallon (3.8 litres) of petrol. Making such vehicles readily available would be a sound investment, perhaps promoted by offering government rebate on their purchase.

Global environmental collapse is not inevitable. However, the developed world must work with the developing world to ensure that new industrialized economies do not add to the world's environmental problems. Politicians must think of sustainable development rather than economic expansion. Conservation strategies have to become more widely accepted, and people must learn that energy use can be dramatically diminished without sacrificing comfort. In short, with the technology that currently exists, the years of global environmental mistreatment can begin to be reserved.

Revelations Chapter 7 Verse 3 says, "*Hurt not the earth, neither the sea, nor the trees.*" Thus, by using energy efficiently and protecting the environment we are not only conserving our environment but also adhering to the divine principles of God.

Shaheen Sheentz-Sauid
Sigatoka Methodist High School
Fiji Islands



Ronil Chand, Natabua High School, Lautoka, Fiji Islands

Protection of the Environment

The protection of the natural environment is a necessity that we must be aware of. The atmosphere is one that we often ignore by conducting activities that have harmful effects. Since the atmosphere is just air surrounding the earth which consists of gases and is invisible to man's eyes, they don't care to take risk in order to secure its safety. This is because some benefits of these activities must be sacrificed in order to exercise that safety. By doing so, it may have other effects, but more importantly is our duty to leave a secure environment to our future generation.

There are human activities that have major effect on the atmosphere. They contribute to atmospheric problems that have been detected lately which are Climate Change, Global Warming and Ozone Depletion. These problems are realised as having harmful effects on the earth and living things in it. The only way to prevent these effects is to find its causes and do something about it.

Economic activities are very offensive to the atmosphere. The fundamental problem is that many of the activities undertaken to improve an economy are affecting the energy balance by changing the way the atmosphere absorbs and emits energy. Industry is a major factor that contribute to both economic improvement and Greenhouse gas emissions. Factories and power plants example consume large amount of fuels for machineries operation. These fuels are released to the atmosphere in form of gases which thickens the layer of natural gases already existing there.

Deforestation is another action that has harmful effects on the atmosphere. People cut down trees and forests to establish new buildings and other infrastructures. This emits huge amounts of carbon dioxide. This gas is transported to the atmosphere and

helps retain energy that causes much heating and changes in climate patterns recently.

Many forms of transportation not only affect the ozone layer but also pollute the air we breathe in. The increasing demand for transportations and moving from place to place has increased the number of automobiles, jumbo-jets, ships and vessels. They are all things that have direct or indirect impact on the atmosphere.

On political affairs, there are many countries that face conflicts. These often involve wars and violent actions. They denote the using the nuclear weapons such as atomic bombs, missiles and tonnes of gunpowder. These are factors that harm the ozone, which causes its rapid depletion that in return allows more energy to enter our planet.

Some may think that this is just an issue of ideological dispute. The fact that the atmosphere is in an uncertain state is something that we must take notice of. Living under an uncertain atmosphere is not safe. As stated above, our activities enhanced the changes in the process of nature. The cost of reducing those activities is small compared to the risk we will take from an unsafe atmosphere. Being cautious is far more important than waiting for evidence of a change in climate, in fact protection is always better than cure.

Manakovi Kipau
Vava'u High School
Tonga

For the Pacific island countries, this problem is real and not imaginary. We must wake up, be serious and work together to plan ahead and do something about it now, not later or tomorrow. Tropical storms (cyclones) in the Pacific would become far more frequent and cause greater damage than ever before on island people's homes, vegetation and gardens. Rising sea levels would have terrible effect on low-lying islands such as Kiribati and Tuvalu. In the Solomon Islands, people living in Sikaiana and Lord Howe would have to be relocated to other larger, higher islands.

In our country, such traditional agriculture/farming practices as slash and burn gardening, rainforest clearances for logging and the new proposed oil palm plantation in Vagunu, (Western Province) and large forests/garden fires, all contribute to this global warming problem. In Honiara city, many shady rain trees have been cut down to make way for a growing population, new housing and industrial developments and a highway. The town now is very hot, dry and dusty. Vehicle emissions (gases) are increasing on roads and untreated rubbish at the Ranadi site.

How can we help to protect the Earth from this global warming problem? First, all students and youths in the country should work together with their parents and teachers, to ask the Government, Churches, NGO's and Communities to help make environmental studies a compulsory subject in schools. Secondly, aid donors should be encouraged to assist the Solomon Islands for renewable energy technologies such as solar, hydro, wind and wave power. These are better and cleaner than the non-renewable energy technologies.

In conclusion, we all want clean air to breathe, clean rivers and streams to provide drinking water and clear oceans to fish and swim in. The air in the atmosphere is a very precious resource. Man can survive for weeks or months without food, and for days without water. But only for a few minutes without clean air to breathe. Man's energy needs and transport activities do affect the earth's atmosphere.

Kitchener Wheatley
Woodford International School
Honiara
Solomon Islands

Neelam Singh, Lautoka, Fiji Islands

FIRE IN MY HEART

When I was young

I used to see,

An unpolluted sea,

I used to feel fresh breeze on my face,
I could feel mother Earth overwhelmed
with joy,

I live in a green paradise,
Little did I know,

As I would grow,
The sea, air, and the land around me,

Would change so,
As I stand here today

Everything is so different,
From what it used to be,

Polluted oceans, I see
Polluted air, I breathe,

Crying mother Earth, I hear
Slowly as I walk away,

I feel a tinge in my small heart,
What happened, what was happening, what
are we doing to mother Earth ?

As I think,
My heart breaks,

My soul weeps,
Like a child I weep for the past,

Wishing I could heal the world for you and for me.

The Greenhouse Effect



Tema Ina Mata, Niue

The earth's climate changes because of human activities, which alter the chemical composition of the atmosphere through build up of greenhouse gases. I hope you will find this essay informative.

The earth is kept warm by its atmosphere, which acts like a woolly coat. Without it, the average surface temperature would be about -18°C . Heat from the sun passes through the atmosphere warming it, and most of it warms the surface of the planet. As the earth warms up, it emits heat in the form of radiation - much like a hot pan emitting heat even after it is taken away from the fire. The atmosphere traps some of this heat - the rest escapes into space. The so-called greenhouse gases trap more of this radiation so the Earth gradually warms up, more than it should, like a greenhouse.

There are some natural greenhouse gases such as water vapour, nitrous oxide, carbon dioxide, methane and ozone. Over the past fifty years, production of carbon dioxide, nitrous oxide and methane has risen, and chlorofluorocarbons or CFCs has been introduced with refrigerants, solvent and aerosol propellants. The use of CFCs traps a lot of radiation. One molecule of CFC is 12 000 to 10 000 times as effective as a molecule of carbon dioxide.

The carbon dioxide comes mainly from the burning of fossil fuels. Nitrous oxide is a by-product of nylon production, and is also released by fertilizer use in agriculture. The extra methane is produced in coal mining, natural gas production and distribution (natural gas is methane), and waste disposal. One fifth of all methane generated by human activity comes from microbial decay of organic matter in flooded rice fields.

The greenhouse effect causes trouble by raising the temperature of the planet. The actual rise is not very much, but the earth's ecosystem is very fragile, and changes can have large effects like what would happen if the earth's surface temperature increases by 1°C .

The Inter-Governmental Panel on climate change has predicted that this rise of 1°C will be accomplished by the year 2025. This could potentially cripple the North American Corn Belt, which produces much of the world's grain. The other serious worry is the rising sea level that will flood many low-lying countries.

A meter rise in the sea level predicted by scientists for the year 2100 (and some as soon as 2030) would flood 15% of Egypt and 12 % of Bangladesh including many low-lying island countries in the Caribbean and the Pacific. These small islands have formed an Alliance of Small Island States (AOSIS) so that they could have a collective and perhaps more weight in voicing their concerns in international meetings and conferences. Closer to home, Britain, would lose most of East Anglia and to protect coastline would cost an estimated 5 to 10 billion pounds.

Possible solutions to the greenhouse effect would involve the reduce use of fossil fuels which would considerably reduce the amount of carbon dioxide in the atmosphere. This can be achieved by either using less energy altogether or use renewable energy sources. You can help save energy in a lot of ways like turning off lights when not in use, carpooling, insulating homes properly, etc.

Stop deforestation and use renewable energy sources like hydro and wind would help minimise carbon dioxide in the atmosphere. Finally, it would be appropriately fitting to say that we should think globally and act locally.

*Harpreet Singh
Naitasiri Secondary School
Fiji Islands*



An illustration by Hagi Vakaafi, Tito Ikimotu and Felicia Poihigia - Niue

Live Simply so that Others can simply Live

Earth is an amazing place. Unfortunately, many of us take the miraculous existence of life on our planet for granted. Rather than respecting it we behave as though earth can meet whatever demands we place on its resources and ecosystems.

The planet that we all share, and call home is the only biosphere in the entire visible universe with an ecosystem that we know can sustain us. In order for humanity to develop a way to survive and prosper in the future, we need to renew our appreciation of how unique life on earth is. We must overcome the sense that the problems of the planet are out of control, shake off any apathy and revitalize our commitment to foreseeing a future which will allow all earth life-forms to flourish. The key to such a future is the respect for the environment, for life itself and for each other.

As humanity spreads like a plague, across the face of the planet it emits garbage. Increasing population results in increasing amounts of waste and pollution. This destructive cycle must be broken - the sooner the better. Humanity will need to employ more environmentally considerate urban planning in which issues of transportation and housing are central concerns if it hopes to overcome its current environmental problems.

First and foremost, sustainable development requires us to address the problems of human poverty and the contribution it makes to our deteriorating environmental conditions. Widespread human suffering has long been a problem in developing countries, where millions of people live without the most basic needs: food, water, and shelter. Today, these problems are becoming increasingly common in a growing number of developed nations where the division between the wealthy and the poor is continuing to grow. The fact is when people are simply struggling to survive, ecological considerations become unimportant, and so the viscous downward spiral of environmental degradation continues.

The manner in which we build and use our homes, and how we get from one place to another are two human activities that have huge environmental costs. Large houses on large plots of land and big cars have long been considered status symbols in consumer-oriented societies. Even in countries where such lifestyles are not commonly possible, many individuals still believe that bigger is better. When we consider the environmental toll, this is clearly not the case.

Driving gasoline-powered vehicles generate more pollution than any other human activity. The widespread personal use of the motor vehicle has been the primary catalyst, which has driven cities into becoming uncontrolled urban sprawls. As

personal vehicle use escalated, cities have spread; giving rise to a feedback loop whereby it becomes necessary to own a vehicle so as to easily get around the ever-growing area.

Man live in an ocean of energy. Energy has always been the key to man's greatest goals and dreams of a better world. But energy cannot be put on the table, as energy can appear in many forms.

For example, when building a house, there are many simple considerations we have to make in order to minimize its impact on the environment.

Highest on the list of priorities should be ensuring that we do not use any rainforest or old growth forest timbers where timber is required, or desired, it should be ensured that only plantation grown or recycled materials are used.

To minimize energy consumption, the house should be oriented to take maximum advantage of the sun's rays for lighting and heating. Solar hot water heating should be considered as an alternative to electric or gas heating.

Water is the elixir of life. Humans are themselves 70% water by weight. Despite our total reliance on it, we take water for granted - squander it and worst of all continue to pollute it to the point where it often no longer sustains life. The oceans are much like human subconscious. Although we often overlook what is hidden within them, upsetting their delicate nature topples life out of balance. For centuries, humanity has succumbed to the unfortunate temptation to treat the oceans as a great garbage dump. Its a classic case of "out of sight, out of mind".

Effluent, toxins, nuclear wastes and other refuse the oceans have swallowed are literally choking life, in many cases to death.

Understanding our impact on the planet and developing more sensible and sustainable ways to cooperate with nature will enable the earth to sustain life into the future. The good news is that if each of us are environmentally aware and take positive steps to live in harmony with nature as a daily part of our lives, all inhabitants of earth can survive and prosper. This may require fundamental changes to our current attitudes and expectations i.e. "live simply so that others may simply live."

*Neelam Singh
Lautoka,
Fiji Islands*

A Blanket of Fragile Balance

In this world of ours, human activities seem an unnecessary imbalance. Our tireless activity and urge for adventure and thrill has led us to conquer many parts of the world, perhaps not meant for man. Now, all these societies are linked. This linking or bondage is facilitated between societies and nations by the human efforts of transport and communication, by airplane, marine vessels, motor vehicles and even walking.

To keep the insatiable appetites of our societies running, we equip it with a continuous and colossal supply of fuel that gives it the necessary volume of energy to fuel our lavish lives at our homes, offices, overly enthusiastic businesses, and perhaps most greedy, our transport industries. When talking about energy, we must refer to the conversion of energy from one form to another because energy is not useful to us in only one form but in many forms as chemical, electrical and heat energy. The energy conversion efficiency is what we are worried about, as it is this that determines how good a system is at converting natural energy to a useful form. Most natural systems lose tremendous amounts of energy as heat, as with the essential process of photosynthesis in plants converting only 0.5 % of energy it receives to a useful form. Carbon fuels, the most common source of energy today, when burnt, produce large amounts of heat that is often wasted with waste products such as carbon dioxide that congest the atmosphere, the nourishing blanket of life on our planet.

To fully understand the atmosphere, one must first understand the perfect balance it has achieved over the millions of years and the invaluable role it plays in our lives and the existence of our environment. The atmosphere protects Earth from the potentially destructive contact with outer space and serves to provide oxygen, the gas of life to all organisms of the biosphere. Pollutants, which cause direct damage to the natural environment, are seen as dangerous while contaminants, which just add as "extras" to the systematic flow of resources and wastes, are seen as non-threatening. But honestly, one cannot expect a "contaminant" not to harm such a perfectly achieved composition in the atmosphere.

Carbon dioxide naturally forms a fundamental ingredient of our environment, occurring in the process of photosynthesis in plants and also serves as the major gas insulating the Earth against heat loss in what is known as the Greenhouse Effect. An excess of harmful gases, leached into the atmosphere by the combustion of carbon fuels, especially by the transport industry may lead to temperature related problems. Yet, carbon dioxide is still treated as a contaminant rather than as a serious

pollutant. Smoke, dust, nitrogen and sulfur oxides released into the atmosphere harm the atmospheric balance of our environment.

Transport industries burn tons of fuel and produce tons of waste compounds, which are released into the atmosphere, not worrying about the environmental impacts of their actions, in certain parts of the world. They are greatly to be blamed, as they would only be concerned if there were a profit or something of interest to them for they do not see themselves, but perhaps others, suffering as a consequence of their actions.

The increasing temperature of earth causing sea levels to rise, landmasses to be flooded, and triggering unstable weather patterns, thus costing millions of dollars in damages through environmental destruction and depletion of resources. Nitrogen and sulfur compounds released into the atmosphere cause acidic build-ups and smog, which in turn damage property, businesses, resources and health. In short, emissions of these pollutants wreak havoc on our environments and health costing tremendous sum of money and human resources. It is these products of pollution that make the problem economically able to be dealt with now by the businesses that cause the pollution.

Now, looking at the full picture, it does seem much cheaper and smarter to invest in less harmful and sustainable fuel sources such as solar and wind. Most of our modern businesses, realizing this, have begun their insipid steps towards a sustainable and independent fuel source. Non-Government Organizations (NGOs) over the world are to be thanked for the increasing support of a greener planet with a cleaner, rich atmosphere for all of us. The increasing awareness is clearly reflected by events such as the World Earth Day, which has for 79 years already, accelerated the process for clean fuels. In this Year for Volunteers, we must at least actively participate in preserving our atmosphere and planet by showing support for these NGOs and appreciating that our planet and its environment are indeed definite and exhaustible.

In our world of vociferous activity, the transport industry, playing the very vital role of linking us for the necessary operation, is proven essential. Why do we linger before taking action against pollution when we can prevent it with smarter and better-informed hindsight? Why not show concern now and save our environment with cleaner energy, a more efficient transport system and thus a healthier atmosphere? With clean fuels, cheap and better energy sources, our planet has to offer harvest, we may envision for ourselves, a better future, a cleaner future and a brighter

The Earth is our Home: Do you Want to Help Protect It ?

This tiny beautiful world is a treasure of God and silver to humans and other living creatures. We may not realise this, but it is a fact that everything in this planet, which we love so dearly, have been made readily available. Ever since it became "home sweet home" to all mankind, our earth has gone through some dramatic changes that we might not even notice.

It has been revealed that mankind has entered a new Century and faces the threat of self-destruction. With the population explosion, which has passed the 6 billion mark, would mean more pollution, more toxic wastes, more greenhouse gases and more irreversible damages to the biosphere and the environment. More destruction has also meant less available resources like forests, soil, water and air, and the disappearance of thousands of plants and animal species.

The excessive use of energy is becoming a great concern to our once clean environment. The massive industrialisation and development on earth use fossil fuels. This includes the development of nuclear weapons, developed by man who is capable of bringing about his own destruction.

The counter-productive measure would be a call to minimise the dependence on fossil fuels that threaten people's livelihood and encourage the use of renewable energy. Alternative sources would be from the wind, waves and solar. Renewable energy sources should now be seen as a key to sustainable development. With the development of a car to run on hydrogen fuel cells, it is a hope that the consumption of fossil fuels would greatly decrease. Electricity from photovoltaics should also be seen as an alternative power source to be used in homes.

With regard to transportation, all forms of transport links are equally playing an important role to the livelihoods of people as well as enhancing economic development in nations throughout the world. But why do we relate transportation with environmental issues? Well, all forms of transport contribute hugely to polluting the air, land and sea. Now let us look at how transportation causes pollution and the measures that can be taken to minimise its effects.

Air pollution – transportation in the air, on land and sea all cause air pollution. These transportation means release carbon monoxide, carbon dioxide, and other gases into the atmosphere polluting the air we breath. This causes diseases like, asthma and lung bronchitis. To minimise the effects of air pollution, there is a need to impose laws like a "clean air act" aiming at reducing air pollution. The fuel used by planes, vehicles and ships should be unleaded so that the fumes they emit is not too harmful.

As we advance into the 21st Century we must not think less of our atmosphere. We should remind ourselves that we have a task to do in order to maintain its natural beauty. Pollution is the biggest disrupter to a healthy environment and atmosphere. It comes in the form of air, water, noise and visual pollutions.

Fumes from traffic exhausts, factory chimneys and the burning of coal and oil, cause air pollution. This can be controlled if we have special filters fitted to the exhaust pipes and chimneys.

Water pollution can be a problem if rivers and canals are used as dumping places for industrial wastes and untreated sewage. This can be controlled if factories clean up their liquid wastes and build proper sewage treatment plants.

Noise pollution is mainly from traffic and factories and its effects can be reduced if cars have a good silencer and housing is located well away from factories.

Radmikesh Prasad, Natabua High School, Lautoka, Fiji Islands

Visual pollution is the final contributor to the unhappy atmosphere. It is when we have rubbish on streets, ugly rubbish dumps and buildings. It can be controlled if we have proper rubbish disposal sites, recycle plants, clean buildings and carefully screened development plans.

It is therefore our duty to rescue our world from the dangers imposed by humans. We want to live in a peaceful, joyful and harmonious environment without threats to our planet. It is now time for us to limit ourselves in what we say, think and do because our world is no longer capable of accommodating any unnecessary damages to it. Can't we realise that the earth is saying, "ENOUGH IS ENOUGH" with bitter tears in its eyes? Yes, we need clean air to breathe, clean rivers and streams for drinking, clean ocean to fish and swim, and most of all a clean planet to live in.

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Energy, Transport and the Atmosphere

Yesterday is a dream and tomorrow is a vision, but today, well makes every yesterday a dream of happiness and every tomorrow a vision of hope. Today and tomorrow's progress will be based upon the productivity of the earth. The richness, which shape the world tomorrow will not come out of factories, but from the availability of natural resources, energy, pollution free transport as well as a healthy and wealthy atmosphere.

For years, across the 300 islands in the Fiji group, villagers have relied on the productivity of the earth. Over the centuries and today still, people depend on the sea for food and nutrition, energy and as a medium for transportation. However, these days the traditional subsistence way of life, energy and transport are being undermined by a cash economy, which has development and modernisation in its agenda.

As mankind gradually proceed into a world of innovation with technology as its weapon, there seems a beginning of a new era of progress and achievement. To create awareness of the earth and the changes that occurs the theme for this year's World Earth Day "Energy, Transport and the Atmosphere", could not have been more timely and appropriate.

In addition, my view of the earth in the 19th century is very typical and symbolic. I see the ocean sparkling like a starry night. Fresh breezes from the sea, cool air stunning my face even though the sun is out, and "blankets" cover the sky. Behind me dense forest stands. The sound of mongoose and wild boars hunting cunningly for a prey. Then I hear a sudden noise. Turning round I see a school of humpback whales in the distance jumping majestically out of the water. It was a spectacular sight.

However, today is different. I see an ocean of brown coffee and instead of humpback whales there are huge fishing vessels skimming through the water with fishermen shouting after sighting a rare school of jack mackerel. It is only in the morning that the sun is orange and scouring hot and it must be about 37°C already. I look in vain for the forest; I come across bare sandy land and all that I hear is the noise from hazardous machines and factories. It is a sad case of reality. Our whole environment may be destroyed if we do not take care of it. We must endeavour towards conserving our biology.

ity. The earth as a globe cannot achieve this on its own but together we can in a global partnership for sustainable development. The words of a Greek scientist, Archimedes, "Give me somewhere to stand and I will move the earth," hold to this day as we the younger generation are trying to create positive development.

Moreover, our atmosphere consists of everything that surrounds us. This blanket surrounding the planet earth creates a house effect. Global warming is the increase in the temperature of the earth's atmosphere caused by the greenhouse

earth's atmosphere is getting warmer because the ozone layer is becoming thinner thus more of the sun's harmful rays reaches the earth warming the climate. It affects a lot of our natural resources. The major contribution to the warming process is carbon dioxide and carbon monoxide. It is released into the atmosphere by road transport and burning fossil fuels power stations, to name a few.

The younger generation are regarded as "The Builders of Nations," and we must stop burning excessive fossil fuel. If we are to stop global warming, we have to use energy sparingly.

words in Michael Jackson's earth song "We are the world, We are the children, We are the ones who make a brighter day, So let's start giving, And we are saving our own lives."

provokes a realistic thought in the minds of the younger generation. Pollution can be reduced if people cooperate and do their bit to protect the environment. Young people should be educated on the urgent need to recycle waste. Remember that we all live on earth and we must join hands and stand united as we try to combat environmental hazards and work for a brighter future for us, our children and the later generations to follow.

Let us unite to make the world a better place to live in. After all, the saying goes, "we do not inherit as much of the earth from our ancestors as we borrow from our children." Remember that it is time to act now. It is time to make a difference and come to make your many dreams come true.

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Energy

Today, energy is a very important issue. Our fossil fuel (oil, gas and coal) use has grown so large that its emissions are affecting the natural systems of the earth. It has become a direct threat to the atmosphere.

Energy is one of the most important things that humans use. We need it for heat, light, transportation and for protection. We use energy all the time, probably without even noticing it. Energy is obtained by burning fossil fuels. Much of the growth in fossil fuel consumption expected in the future is in developing countries as these countries shift away from renewable energy resources such as wood and animal dung to fossil fuels.

Many of the world's environmental problems result directly from the extraction and use of energy resources. Human activity has led to an increase in the amount of energy we use, which has contributed to an increase in the amount of greenhouse gases in the atmosphere. When energy use was small, the environmental impact was localised, although they could still be severe. Energy used on large scale can even affect the earth's natural cycles.

The major energy related environmental problems we face today include: the greenhouse effect; land degradation and other impacts such as damage to plant and animal habitats from mining, dam building and waste storage or disposal; air pollution, both outdoor and indoor; from the burning of fuels; electromagnetic pollution from wires and cables carrying electricity; water pollution from energy conversion processes, leakage from waste storage and accidental spills and radioactivity from the nuclear fuel cycle and to some extent coal use. Energy is an essential element of the development of the car-based society. The energy from the fossil fuels is needed for transportation. Transport is one of the contributors towards the greenhouse effect. Human activity has led to an increase in the amount of energy we use, which has contributed to an increase in the amount of greenhouse gases in the atmosphere.

The main greenhouse gases are carbon dioxide (CO_2) which comes from burning of fossil fuels: methane gas which is given off by cows, sheep, rice fields, coal mining and when drilling for oil and gas; chlorofluorocarbons (CFCs) which are man-made gases; ozone which is resulted from car air pollution works as a greenhouse gas and nitrous oxide, a gas from car exhausts, power stations that use coal and oil, burning off and nitrogen fertilisers. Vehicles given out nitrous oxide, carbon

dioxide and ozone which help in the depletion of ozone layer and contribute to greenhouse effect.

What is greenhouse effect? The greenhouse effect keeps the earth warm by trapping heat in the atmosphere. The greenhouse gases are like a big blanket around the earth. Extra greenhouse gases mean that more heat gets trapped. This causes the temperature on earth to rise and it could seriously affect the earth's weather in a number of ways such as sea level rising, natural disasters and weather patterns change.

Most of us choose the car as our primary means of transport and because of this the potential savings on petrol are enormous. For every litre of petrol we use, about 3kgs of CO_2 is pumped into the atmosphere. But by simply driving smoothly and tuning our cars regularly, each person could save about 1.5 tonnes of CO_2 from entering the atmosphere each year. We can also reduce the strain on our roads, atmosphere and oil resources by finding alternatives to the family car like public transport which carries more people at less use of fuel. Fuel efficiency of a vehicle increases when more people travel in it. Today, most developed countries have environmental protection regulations to control the emissions from cars, power stations and industrial processes.

Our energy use is responsible for over half of the greenhouse emissions and widespread pollution of land, water and air. These environmental impacts threaten our quality of life and, possibly, human existence.

If society is to limit these problems, it must reduce energy use through energy conservation and shift from fossil fuels to renewable energy resources. We must also control the environmental impacts of all forms of energy use worldwide and work to clean up the damage that has already been done to the environment by energy use. We should all join hands to clean up the damage.

To do all these things will require strong leadership, international co-operation and technological development. Individuals must play our part by saving energy and resources, and also by telling our leaders that we support national and international efforts to save energy and the environment.

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Monkey see, Monkey do

As a student and an islander, I have many concerns about the direction many powerful nations are taking on environmental issues, such as global warming, amount of CO₂ production and so forth. In this essay I will highlight the mass desecration of our natural resources, the importance of energy, transport and the atmosphere and give my views on solutions to our environmental problems.

As we venture into the new millennium, the age of rapid development and concrete jungles, we as human beings, of this earth are neglecting our responsibilities in conserving our very precious and limited natural resources. Our neglect for our environment has a hefty price tag, not in the number of dollars but in the number of lives, for example, uranium mining in the Australian outback. This mine was set up against massive protests from the landowners surrounded by the Ka Kadu National Park which is protected by the World Heritage Society! Eventually the mining led to the pollution of the surrounding waterways from the uranium residue. This is not only a threat to human and animal lives but also to plant lives. How a permit was approved for this project is a wonder since so much is at stake.

Another example is the deforestation of the rain forests in the Philippines and these rainforests sustain many endangered species including the orangutans and may hold the cure to many of our non-curable diseases. But these forests are disappearing fast, and the Philippines government is not doing much to stop it, nor do they have a reafforestation plan in place.

When the rainforests of South American were cut a devastating new fever broke out, the Bolivian haemorrhagic fever, this time around, what mother earth lashes out is anybody's guess. We must for always remember, "what we sow, is what we reap". We are sowing a very deadly seed of devastation, and then we should not expect to reap a bright future.

For us to change our perception we first must understand the importance of energy, transport and the atmosphere and how

ny are related. First and foremost, energy, which is defined as capacity for activity and work and a source of power, such as electricity, petroleum, solar, power and so forth. Its importance goes without saying, without energy nothing would work, not even humans. Secondly, transport is a medium which helps move from one place to another e.g. cars, aeroplanes and so forth. The atmosphere is what keeps us alive although it is only a mass of gases surrounding Earth. Without any of these life as we know it would cease.

energy as we know it is fuel for cars and all automobiles, which basically are fossil fuels. When these fossil fuels are used as energy resources, they give off a lot of CO_2 , methane and nitrogen oxides which are greenhouse gases. These gases reflect the radiated UV rays back into the earth's atmosphere and cause holes in the ozone layer (part of our atmosphere) which leads to cancer and cataracts and other such deformities. CO_2 also traps heat in the atmosphere causing global warming which in turn leads to increases in sea levels gradually. Due to this my home may not exist in another three to four decades.

though energy is needed so much, destroying our atmosphere is not the answer. I believe the answer lies in the most powerful energy source known to men, the sun. Other non-fossil fuels can also be a solution to a pollution-free energy source such as hydro and geothermal energy sources. I also believe that countries not only have to make a switch to non-fossil fuels transportation purposes but also for industrial purposes. For this to happen countries first have to adhere to the Kyoto protocol and enforce its laws concerning CO_2 production in their homelands. We must remember this is a 'money see, money world'. If powerful countries like America start backing off out of the treaty and start treating mother earth with more respect it is only a matter of time before more countries will follow suit.

We are to live in a healthy environment we must conform to the Kyoto Protocol, at least that is a start. International pressure must be put on countries that do not conform, and put in place sanctions if must be. The price we must pay, is it to the earth and our homes or an economy that can be revived through other means? I choose to save mother earth, my home.

The background of the entire page is a complex, high-contrast, black and white abstract pattern. It consists of numerous overlapping, irregular shapes, some resembling stylized leaves or organic forms, and others resembling geometric or crystalline structures. The pattern is dense and covers the entire surface, creating a textured, almost woodcut-like appearance.

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SOPAC MISCELLANEOUS REPORT 441

Published by the Energy Unit, South Pacific Applied Geoscience Commission (SOPAC)
September 2001