

Pacific forever

An Education for Sustainable Development resource

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Contents

Message to educators

What do we mean by *sustainable development*? It is often a term that is used by the media and government officials, but what does it mean to the Pacific islands? Quite simply, sustainable development means meeting the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development means conserving the past, respecting the needs of the present, while thinking about the future.

Environment for sustainable development focuses on the interactions between human activities and the natural environment and their implications for sustainable *human development*.

The Pacific Island's environment is one of the most unique areas in the world. It is also one of the most threatened with astonishing rates of species, forests and natural resources disappearing. With a growing population, changing lifestyles and people moving closer to towns, there is a host of challenges facing the Pacific, and threatening the natural and cultural heritage that defines the Pacific islands. The Pacific environment is connected to people's history and heritage...

Pacific Forever aims to stimulate discussion about issues of environment for sustainable development by providing a learning framework. This resource aims to explore issues in a fun, accessible and colourful way, and encourages activities inside and outside of the classroom that will encourage active participation and engagement in these important issues.

20% of Pacific Islanders are aged between 15 – 24 years of age, a total of 1.4 million. This number is expected to rise by a further 300,000 by the year 2010. With a growing population, changing lifestyles and global challenges, there is a recognition that we have to start thinking about how our actions today, will affect life in the future.

Global leaders have recognised that education plays a critical role in sustainable development. As educators, you have the role to help people understand the issues that face the Pacific islands, and teach them how to make decisions that respect their rich and diverse natural, cultural and traditional hertiage.

As future leaders, young people hold the key to a sustainable Pacific.

Pacific Forever relies on your interest, enthusiasm and commitment as an educator to align these activities and ideas within that national curricula and to provide realistic examples that may highlight the key principles and issues explored within this resource.

What is Pacific forever

What is an island? Fragility, innovation and ilsolation, communion with the natural world, strong culture... What makes our islands unique? How is our current use of resources affecting our islands and our future? and what do all of us have to do to protect and maintaing our islands, its environment culture and traditions. How do we keep the Pacific foreer?

"Pacific Forever" is a school education programe, which main goal is to develop an understanding of what being a Pacific Islander really means.

This programme will focus on eachone responsibility in conserve the present, respect the past while making the future.

"Pacific Forever" will encourage active learning about the islands, developing in the students and teachers a change of attitude, rescue cultural values and develop new behaviors that will translate in a more tolerant, ecological and Pacific orientated lifestyles.

- It is about learn to think -critical thinking-
- Make decisions that have a positive impact on your future
- Thinking about tomorrow; not just today
- Responsibility for your actions
- Integrating values
- Defining and conserving traditional values and practices
- Taking action

"Pacific forever" describe the changes happening in our Pacific environment and explain those global issues that are afecting our islands, stressing the challenges to maintain our way of life and future and the importance of the commitment and participation of every level of our society in implementing strategies, developing new values and changing behaviors. The program is base on common sense: "if we do not understand and treasure what we have, we will not be able to protect it for the future".

Think, feel, act

One of the greatest challanges we face in protecting our islands

biodiversity is how to balance the needs of the people that use it, and the future of the environment. There are many reasons why the Pacific islands way of life is endangered, it is

necessary to address these threats, all of them. Understand ing their causes will help to stop them, if it is possible or to change or adapt our way of life.

It is necessary to focus on long term sustainability strategies, but in the mean time develop and carry out short term projects to address the immediate needs of our islands.

As educators you can actively participate in the islands ecosystems, traditions and way of life protection by engaging your students in a productive and active learning experience about what the Pacific islands are facing.

It is important to remember that protecting the environment, not only protects the natural world, but also the human, economic and cultural values of all of us.

Think, feel, act are the three engaging points of the programme.



Think:

Learning about the facts of the issues affecting our islands and understanding the consequences that unsustainable practices and global environmental issues have on the natural world, the social and economic aspects of our island countries.

Protecting our island's **biodiversity** and finding solutions to the issues that threaten it, will mean that we will have to start thinking in different ways.

Feel:

Explain the connections between these ecosystems and our traditional way of life, our culture, economy and future.

Act:

Adresses the actions that need to be taken and the behaviours that need to changed to preserve what we have and value.



Education for sustainable development

ESD Education for Sustainable Development

is an initiative which integrate four pilars: Society, Economics Education and Culture

One of the biggest challenges of the Decade of **ESD Education for Sustainable Development** is to bring the concept of sustainable development close to the everyday life of the Pacific islanders.

Sustainable

means meeting the needs of the present without diminishing the ability of people, other species, or future generations to survive.

How to use this resource

'Pacific Forever' is an education resource that explores issues of environment for sustainable development in the Pacific. Aimed at upper primary/lower secondary level, Pacific Forever is structured around seven key topics: Unique Pacific (exploring the uniqueness of the Pacific Islands environment), Sea, Mangroves, Land, Energy, Waste, Climate Change.

These topics introduce the main ecosystems found in the Pacific Islands, describes the social, cultural and economic dimensions of the islands, and introduce key issues affecting the Pacific way of life.

This resource aims to encourage active learning about the Pacific islands, helping to develop an appreciation of Pacific island life, and promotes sustainable practices.

This resource provides information on a range of topics, and lists activities to reinforce and support the discussion prompted by the cards. The Handbook also provides a Chart of Topics to support integration into the curricula, provides a glossary, and also information on available resources to enable teachers to explore a topic in more detail.

Through this resource, we hope to inspire students and teachers to take an active role in sustainable practices, through supporting key activities that respect the environmental, social, cultural and economic values of our Pacific islands.

It is important to remember that education for a sustainable Pacific is a long term process, that include short term and long term goals.

As short term results you can spect to see some behaivour changes, such as waste and energy wise attitudes, turning the lighs when not used, making sure that the water taps are turn off completelly.

The long term results... can really surprise you! it can be from a concient adult to a policy maker. Remember, the time to inspire them is now that they are young. S tudents that are motivated and inspired at a young age will have a friendly and responsable attitude towards the environment and these students are the people who will make the future economic, political and social dicisions of tomorrow.

Unique Pacific

This first card explores the different issues facing the Pacific islands. These include:

This card can be displayed with the other cards to prompt discussion.

Allow the students to have a good look at the picture, what can they see?

Which of these images are related to your country?

What aspects are connected? Eg: biodiversity and waste culture and conservation

What will happen if ...

Discuss with your students what will happen if any or some of those topics are not present in the island way of life.

ie: Biodiversity

What will happen if the mangroves or coral reefs are destroyed? How will that affect your way of life, economy and culture? Do you use any animal or plant in the creation of any craft, which ones? What do you use it for? How will the destruction of these ecosystems affect your way of life?

some other ideas...

My island, my country, my culture...box

Many times we do not recognise all the aspects and things that make our country a very special place. Islands are unique, particularly the Pacific islands.

Ask your students to create a culture box. The students will place in the box a few items that represent their culture, identity and the things they like about their island home. It can be an object, recipe for a traditional dish, a musical instrument, or a shell to represent the island.

Ask the students to explain how these objects reflect their home, and how these items are tied together.

Aims of activity: Students explore identity and Pacific heritage, and understand different perspectives of identity. Highlights how things are connected.

Make a Terrific Pacific map

Develop this activity as a class project. Ask the students to learn about other Pacific islands, their economy, way of life, culture...

Incorporate the information into a map in a graphic way, using drawings, photographs or replicas of traditional crafts etc.

Make it as big as possible to capture all the information. Invite a person from another Pacific island country to speak to your class.



Think Kids in the beach

Pacific kids grow up in close contact with the natural word, learning from a young age to respect and enjoy their natural surroundings.

Lady catching mud crabs

The natural environment provides us with all what we need. However, we have to make sure that we use our natural resources in a sustainable manner.

Rubbish on the waterfront

Our islands are feeling the effect of human behaviour which includes dumping rubbish and harmful agricultural and fishing practices.

Feel Community champions

This couple from Kiribati, is leading their community in waste management practices. They are making an effort to protect their island and use its resources in a sustainable way, for them, their children and their community.

Painted hand

Many islands, many cultures. Each of them make up the Pacific values, traditions and way of life.

Father and son

Culture and traditional knowledge is passed on from generation to generation. This knowledge is valued in many parts of the world, and must be respected and integrated into our everyday.

Turtles

The natural world is woven in our culture and way of life. Pacific island biodiversity is unique and part of who we are.

Act Baskets

Say no to plastic! Take your own basket or bag to the market or shop. Plastics harm wildlife and make our homes look untidy.

Banana circle

An innovative idea used to grow plants and food to eat, and also reduces rubbish.

Pacific islander

Think about your future, remember Pacific values, culture and traditions, and act for a sustainable Pacific!



Turtles

Have you ever seen a turtle? Do you know any legends, stories, songs or dances about turtles? Discuss with your students about how turtles are a part of Pacific life.

Did you know that turtle numbers are decreasing? We must work to protect the turtles to protect our Pacific heritage, and environment.

Coral reefs

Corals are a rich and important ecosystem. What animals live on it, which ones are part of our Pacific diet? Coral reefs are endangered all around the Pacific. We must only take what we need and be careful not to damage the coral reefs in any way.

Living close to the sea

Living on islands means that the sea is an important and active part of our life. Do you live close to the sea? Do you go fishing? What fish do you catch? What else do you see when you go out to the coral reefs?

some other ideas...

Turtle Awareness Campaign

Ask your students to develop a Sea Turtle Awareness Campaign. Divide the class into groups to create an information poster on the following topics:

- ✤ Types of sea turtles that live in the Pacific
- ✤ The life of a sea turtle
- Threats to turtles
- Our turtles, our culture: cultural value of turtles.
- Action...what can we do to save the turtles?

Place the posters all arround the school.

Aim of activity: Students research a marine species to understand the connection that it has in an ecosystem.

Clean up day

Organize a clean up day at a near by beach. Prepare bags and containers to dispose of the rubbish. Encourage parents to support on the day.

At the end of the clean up, list the different types of rubbish found discuss its origins, and what can be done to prevent it to arrive to the beach.

Discuss the damage that waste will do to the coral reef and the creatures that live on it.



Fishing

Fishing is an important and growing industry in the Pacific islands. Discuss the traditional and modern ways of fishing.

The marine environment is fragile and therefore needs protection. It is important that when we use marine resources we ensure that we use them carefully to enable it to continue to provide for our needs and those of future generations.

Traditional protection practises

In the Pacific, traditional knowledge is knowledge that our ancestors have passed down to us. Pacific islands are changing, and we are using more resources at a quicker rate. Traditional knowledge can help to provide information on how to manage our natural environment.

Find about them, and if they are used today in the place you live.

Ask your students to find about traditional protection practises by asking elders in their family or community.

some other ideas...

Find about Marine Protected Areas

Your local Ministry of Fisheries or Environment can tell you about them and if there are some in your area.

Organize a visit and preferably ask any of the people from that MPA to accompany on the visit.

Ask the students to develop a information board about their visit.

Aims of activity: Understand the role of traditional knowledge in managing the environment, but also in preserving Pacific culture and heritage.

Visit the fish market

Organize a visit to the fish market and ask your students to interview some of the fisherman. Ask them to prepare questions related to:

- Types of fish they caught.
- Existing fishing regulations in relation to size, species and banning periods.
- Compare modern fishing practices to those that existed 10 years ago: ask about the quantity of fish, the types being caught, the prices of fish.
- Fresh fish or canned fish...ask the fisherman and students about which ones they like best and why.

Aims of activity: Highlight how fishing practices may have changed. Explore the different foods that we eat.

Mangroves

Mangroves in the Pacific

There are different mangrove species in the Pacific. Which types are in yor country?. Find about their particular characteristics and compare roots, leaves and seeds shapes.

Fish live on trees

Mangroves play an important role in the marine environment. They provide valuable nursery areas, that maintain fish populations that are important food items.

They shelter our coasts and homes from storms and bad weather.

They provide food and nutrients to many animals that live there.

Which ones do you know?

What food have you got from the mangroves?

some other ideas...

Visit a mangrove area

Before your visit create an observation chart and ask your students to fill it in.

Type of mangrove: Location of the mangrove: Is it close to the water or land?

Roots:

Shape of roots: Size: Colour:

Leaves Shape of leaves: Size: Colour:

Seeds Shape of seeds: Size: Colour:

Mangroves



Mangrove value

Discuss the importance of mangroves as a source of food and coastal and coral reef protection.

What other uses do you know of the mangrove trees. Find about any traditional medicine that requires parts of the mangrove or plants that grow in the area.

Mangrove threats

On a country map, locate the mangrove areas, and find out the closest mangrove to where you live.

What is happening with this mangrove? Have you every visited this mangrove? What did you see when you were there?

How can we protect the mangroves? Teach the children the importance of keeping rubbish out of the mangroves and only taking what they need.

Colours of the Pacific

Many Pacific countries have crafts that utilize diferent parts of the mangrove or other plants that grow in the mangrove area. Found about them and if it is possible teach that technique to your students.

some other ideas...

Craft time

Traditionally the mangroves have provided dyes, flowers and wood to create different and very unique crafts.

Select one craft that utilizes any mangrove product and explore the following questions.

- ✤ How is made?
- What is it used for?
- ✤ Is this craft still very common?
- Do you know anybody who still makes this craft?
- Is it sold for money or just used for traditional or cultural purposes?

Make a nice poster displaying your findings.



Biodiversity - the web of life

The Pacific has some of the world's most important marine and terrestrial (land) biodiversity in the world.

Because of these relationships, the species nourish and protect each other, but this same close relation means that when one species is damaged or removed many others will suffer.

There is also an important number of endemic species - plants and animals that are unique to the Pacific.

People

In the Pacific there are different people with different cultures, languages, and traditions. This variety makes the Pacific one of the most diverse areas in the world.

Small amount of land

Most of the Pacific region is water, only 2% is land.

With this figure you can start discussion about population grow, and it effects on the Pacific biodiversity, cultures and economy.

some other ideas...

Visit to the forest

If you can, organise a visit to a forest to learn more about the the forest ecosystem.

Forest activity:

Divide the class in groups and ask them to choose a small area (2 x 2 metres).

Organize an observation sheet for the students.

On the observation sheet, students can answer the following questions:

Describe the area:

How many different types of plants can you see? Write their names. If you do not know their names, write down what they look like.

How many different types of animals can you see? Write their names. If you do not know their names, write down what they look like.

In the classroom ask the students to share their observations with the class.



Agriculture

Is the single largest economic activity in the Pacific.

What is grown in your country? Find out about traditional and new crops What do you grow at home? What crops are being exported?

Tourism

Many people benefits from the tourism industry in the Pacific. How do tourists arrive in your country? Is there an airport? Do they arrive by boat? Which places are regularly visited by tourists?

Which are the main atractions? Are there many hotels or other accomodation? Are there places that promote the history and culture of your country? Which crafts do the tourists buy?

Effect of tourism

Discuss the land issues and the consecuences of tourism in the future of our islands. Economic consequences Social consequences Cultural consequences

some other ideas...

Land and Art

Many of the traditional designs used to decorate materials and other crafs have been inspired from plants.

Bring some flowers, fruits and other produce into the class, ask your students to draw them, after ask them to choose one of them.

The students will use that drawing to design a pattern repeating that same drawing.

Display the works.



Energy

Start a discussion about the different types of energy and fuels using a very common example:

Food

We use food as a fuel, and because of the energy this foods give us we can do many things walk, play, study and help our families around the house.

We need fuels like petrol to move cars, and electricity to run many things at home.. but it is also true that we tend to waste it.

some other ideas...

Energy Wise

Develop an awareness programme for your school about the energy we use, how we waste it and how we can save energy and fuels.

Invite someone from the local electricity company to tell you about how the electricity is produced in your country, and the average use at homes. Ask them to explain how electricity is measured.

Ask your students to make groups and develop a series of posters explaining the use and waste of energy and fuels.

Be an Energy Wise class

With your students, list10 easy ways, we can save petrol, energy and money.

Make nice posters and give one to each class in your school so every class can become a **Energy Wise Class!**

in our islands

Renewable and non-renewable energy

Look at the boat pictures	
Which is the big differnce between them?	some other ideas Create a timeline
Our islands use mainly non-renewable energy	Ask your students to answer the questions and place their answers on the time line.
What will happen with our islands?	Discuss
It is estimated that non-renewable fuels will have run out in 100 years.	 Will you need a car? A boat? Will there be more people living in your village, city? What will you need energy for? How old will you be when you get married? Will your children use electricity and petrol? Will it be cheap or expensive? When your grandchildren are born, how many more years before the fossil fuels run out? Will their life be different? How?

How old are you? Age you will finish school Age you will get a job Age you will buy a car Age you will get married Age you will have when your first child is born Age your child will get married Age you will have when your first grandchildren is born



Waste is a big problem all around the world because of the amount we create. It is also difficult to dispose of some waste because of what it is made of.

Many of the things around us is made up of plastic because it is strong, durable and affordable. However, plastic takes a long time to break down. The more rubbish we make, the more space we need to store it all.

There is so much rubbish produced in our islands many island countries are finding it difficult to find space to dispose of it.

Look at the picture...

Can you recognize some of the rubbish? Before it became rubbish, what was it used for?

Waste is divided in three basic groups: Degradable, non-degradable and hazardous waste.

Look at the picture again ...

In what group does the rubbish belong in?

some other ideas...

School waste census

What waste is your school producing?

This activity will need two weeks to be completed, the students need to collect information and create an information chart to be presented to the whole school.

Divide your class into three groups

Group one: Group two: Group three: Office waste Classroom waste Playground waste

Each group needs to collect data on the type of waste each of these areas produce, the amount, and where it is disposed (ie; is it taken to the rubbish dump, burned, buried or composted at school?)

All the data collected need to be presented to the rest of the class.

Understanding what type of waste we produce helps us to work out how we can reduce the waste we make.



Waste takes time

Bring some objects into the class and using the time line, discuss the fact that much of the rubbish that we produce is going to be around longer than us!

Four Rs for a cleaner Pacific

We all create waste, and so we are all responsible for the waste we produce.

Using the data collected on the Waste Census find out what waste we can:

Refuse Reduce Reuse Recycle

Are there ways of recycling material in your country? Speak to the Ministry or Department of Environment to learn about existing ways to recycle some materials.

Find out how other countries manage their waste.

some other ideas...

Say.. No! to Plastic bags

Plastic bags are a big problem in our islands, they not only rubbish our villages and cities, but they harm marine animals.

Plastic bags are light and can float in the ocean for long distances. Turtles think that plastic bags are jellyfish, their main source of food. It is estimated that more than 100,000 marine animals die each year from eating plastic bags.

Turtles are an important part of Pacific culture and heritage, but their numbers are decreasing each year.

There are alternatives to plastic bags, take action! take your basket or cloth bag when you go shopping, and say No to plastic!

Awareness campaign

Ask your students to design posters to tell the rest of the school about the impact of plastic bags on our environment.

Check with the local Ministry of Environment about information on turtles. Ask a representative to visit your school to give a presentation about turtles and other marine life, and how we can protect them for the future.

<u>e change</u>

Climate change is happening, and it is affecting all the planet!

The increase of greenhouse gases in the atmosphere is making our planet warmer, which is called global warming. This causes climate change and rising sea levels. Some effects of this are melting of the ice-caps, flooding of coastal areas, destruction of coral reefs, and more frequent and stronger cyclones.

Pacific islands are very vulnerable and we are already feeling the impacts of climate change.

Discuss with your students what will happen with their way of life if...

- They have to relocate to higger areas
- Traditional crops are affected by climate or salinity
- There are stronger cyclones
- Fishing is affected by the destruction of the coral reef

some other ideas...

Research project

There your students to come up with ideas to reduce greenhouse gas emissions in their:

- ✤ Household
- School
- Community



Think, feel, act

Think

The effects of climate change are starting to be seen and felt in the Pacific. People (an important part of this biodiversity) both in land and at sea are feeling the changes. We can't change some of the effects of climate change, but it is important to change some of our behaviours to reduce the amount of greenhouse gases we produce.

You can start by reducing your waste, by composting your green material and recycling where you can. You can also remember to switch off lights, fans, TVs, DVDs and radios when you are not using them. Think about the future - what can we do today to reduce the effects of climate change. Learn about climate change and share this knowledge with your family and community.

Feel

Cultures, traditions of the Pacific islands are unique and should be treasured and valued. Pacific heritage is connected to the natural environment. It defines who we are today, and our ongoing identity. Traditional knowledge is knowledge from our ancestors that can guide us in how to work with the natural environment. In times of change, we can learn from the past to protect the future.

When we understand what is happening with climate change we feel the need to protect what we have and who we are. We can do this by remembering who we are by maintaining our culture and traditions.

Act

There are some actions to be taken and behaviours to be changed to manage the changes happening in our homes, communities and environment.

These need to be done in each level of our society, from policy makers to each one of us. Some practical things that can be implemented today, without any need of new or expensive technology are:

the use of baskets instead of plastic bags creation of banana circles protection of the diferent island environements reduction of our waste

Glossary

Adult:	Any living creature (human, animal or plant) which is fully-grown and developed, that can reproduce (have babies).
Ancestor:	A member of the same family who lived a long time ago.
Aquatic:	I hings that grow or live in water.
Atholi:	A small flat island made from coral reefs.
Bacteria:	A very small animal that has only one cell. Some bacteria can make us sick.
Biodegradable:	Materials that can be broken down into simple matter by the action of living things such as bacteria.
Biodiversity:	The valiety of life on earth.
Carnivore:	An animal that eats other animals.
Conserve/	To protect or keep something in its original state.
Conservation:	The protection and management of animals, plants and natural systems in which they belong.
Crustacean:	Animais such as prawns, snimps and iopsters.
Decay:	To rot or become rotten; decompose.
Decompose:	To rot or decay.
Disease:	Illness or sickness.
Dispose:	to throw something away.
Ecosystem:	A community of plants, animals and micro-organisms that are linked and that interact with each other and with the physical environment.
Endangered:	Threatened with extinction, as a species of plant or animal; to have put in a dangerous situation.
Energy:	A force or source of power that enables something to do work (eg. electricity provides energy for
Environmont	lighting). Everything that surrounds a living thing and affects its growth and health. Part of horitage and culture.
Erosion:	Wearing away of the earth's surface by wind or water.
Estuary:	The wide part of a river's lower end, where it meets the sea, the river mouth.
Fertilizer:	A substance used to make soil more productive.
Gas:	One of the three states of matter. Oxygen is a gas.
Groundwater:	Water that is found under the soil.

Habitat: Harmful: Heavy metals: Herbivore: Human-made: Hydro-electric power	The area where an animal, plant or micro-organism, lives and finds the nutrients, water, sunlight, shelter and other essential needs for survival. Something that can hurt, damage or injure. That is bad for you. A group of metals (such as mercury or lead) that can enter our bodies and stay there for a long time. An animal which only eats plants. Artificial, manufactured or produced by people either by hand or in factories using machines. The production of electricity by water power.
Marine pollution:	When harmful things are thrown into the sea or ocean.
Non-biodegradable:	Things that do not decay easily in nature.
Nutrients:	Good food, that gives health and nourishment.
Organic matter:	What a living thing is made of.
Oxygen:	The gas that all animal life needs for survival. It is colourless, odorless and tasteless.
Pesticide:	A chemical substance used to destroy pests.
Poison:	A chemical substance that will kill or harm other living things.
Poisonous algae:	A type of water plant that is bad for the water that it lives in, that poisons the water.
Pollutant:	Something that makes the environment unclean.
Pollution:	To make the air, water or soil dirty and dangerous for use by humans, animals and plants.
Population:	The total number of people, plants or animals in a specified area.
Potable:	Water that is safe to drink.
Quality:	A measure of how good or bad we think something is.
Reclamation:	To fill an area with soil or debris to gain space.
Recycle:	When things are re-processed to be used again.