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Pacific Paradise Lost?

CAII • THE CHURCHES' AGENCY ON INTERNATIONAL ISSUES: RESOURCING CHURCHES AND CONGREGATIONS ON GLOBAL CONCERNS

Hot Topic: Climate change in the Pacific

Introduction

Climate change is a critical issue facing the world today. It is having a long lasting affect on the planet. In this Hot topic, the second in a series of three focussing on current issues in the Pacific, we explore how climate change is affecting the planet and the nations of the Pacific.

A question for New Zealand could be, if the small Pacific Island nation of Tuvalu does indeed disappear as the ocean rises would we be willing to take into our country the 11,000 climate change refugees? This Hot Topic explores the impacts of global warming on the Pacific, some future scenarios for the people of the Pacific and the responses of the Pacific Island Churches.

Archbishop Petero Matacca of Suva, Fiji says, "The great faiths teach us a special kind of wisdom - the three Rs," they are:

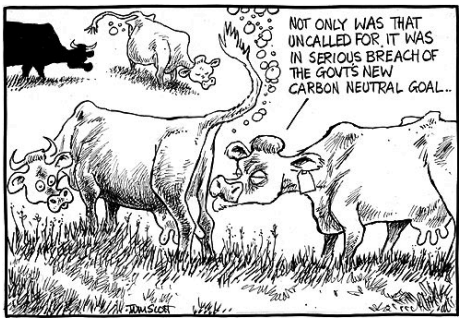
- **Reverence in the face of creation**
- **Responsibility to future generations**
- **Restraint in the knowledge that not everything we can do, we should do.**

PERSPECTIVES

"Climate Change is a far greater threat to the world than international terrorism"

Sir David King, UK Government's chief scientific advisor.

Some definitions



Tom Scott 2006

- **Greenhouse Gases**

The gases that make up "greenhouse gases" are mainly Carbon Dioxide (CO_2), Methane, CFCs and Nitrous Oxide - as the level of these gases increases in the atmosphere, they trap more of the Sun's rays and this leads to overheating of the earth.

- **Climate Change**

Climate change is a change in the "average weather" that a region experiences over a period of time

- **Global warming**

Heat from the sun passes through the atmosphere and warms the surface of the earth. Some of this heat is reflected back into outer space through the atmosphere and some is retained. Because of human activity over a long period of time the balance of reflection and absorption has been upset.

- **El Niño**

The term is used for exceptionally strong warm intervals. A direct consequence, with some other factors, is the redistribution of rains, with flooding in some places and droughts in others.

- **Storm surge**

An on-shore gust of water often associated with a cyclone and a high tide.

- **Biodiversity**

The combination of all living things in one location. Lose a species and you have biodiversity loss.

Explore some other definitions

- **Fossil fuels**
- **CO_2 – its value to life and its dangers.**
- **Methane - where does it come from?**
- **Carbon emission**
- **What's the eco system?**

Gary Braasch 2006

"We live in constant fear of the adverse impacts of climate change. For a coral atoll nation, sea level rise and more severe weather events loom as a growing threat to our entire population. The threat is real and serious, and is of no difference to a slow and insidious form of terrorism against us."

-Saufatu Sopoanga, Prime Minister of Tuvalu, at the 58th Session of the United Nations General Assembly New York

The Anglican Church in Aotearoa, New Zealand and Polynesia

The Salvation Army in New Zealand, Fiji and Tonga

The Methodist Church of New Zealand

The Religious Society of Friends

CWS

The facts about Climate change – as of now!

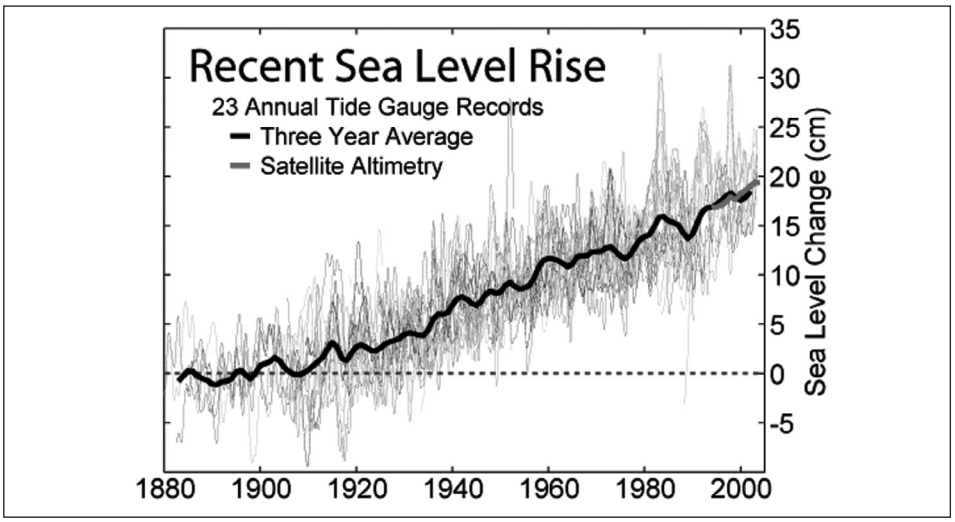
Let's select some of the evidence

The Atmosphere

- Most of the warming of the planet has occurred over the last 50 years and is caused by human activity rather than natural phenomena.
- The earth is warming faster than at any time in the past 10,000 years (IPCC)
- The 1990s was the warmest decade, and 1998 the warmest year on global record (IPCC)
- The summer of 2003 was Europe's hottest for 500 years. The heatwave caused 28,000 premature deaths across the continent.
- The area of the world stricken by drought doubled between 1970 and early 2000
- The concentrations of CO_2, methane and other greenhouse gases are at the highest level for at least 650,000 years

The Oceans

- Every day the fossil fuel burnt on the planet emits 70 billion kilograms of CO_2 into the atmosphere, (equivalent to 11 kg per person) and the oceans take up 14 billion kilograms of it. As that CO_2 combines with seawater, it forms an acid in a process known as ocean acidification and this is threatening life in the oceans.
- Antarctica accounts for 91% of the total mass of ice on the earth, contained in vast ice shelves up to 4.6 kilometres thick. Satellite observation shows the ice shelf is losing mass faster that previously thought. If it completely melted the sea level would rise by 60 metres around the world.



- The Greenland ice sheet is melting faster than expected: the area of surface melted, by the end of 2002 had broken all known records.
- During the last 50 years about 13,000 sq km of ice shelf have collapsed
- The periodic changes in ocean circulation patterns in the eastern Pacific known as El Niño have recently been more frequent and more severe.

Some results – up to now

- In 1983 it was El Niño that provided the weather conditions for Cyclone Oscar, the most damaging cyclone ever to hit Fiji. Again, when three cyclones hit Fiji in 1987 El Niño played its part. In 1997 Tuvalu was hit by three damaging cyclones induced by the El Niño, as was Tonga in 2001. The El Niño of 1997/98 saw drought wipe out two thirds of Fiji's new sugar plantings.
- In Tuvalu rising seas have already caused the disappearance of three atolls.
- Hurricane Katrina killed over 1,000 people and displaced over 1 million.
- Twelve of the past fourteen disasters that Christian Aid (U.K.) and its partners have responded to have been the result of extreme weather conditions.
- New Zealand is the 55th biggest emitter of greenhouse gases in the world. But we are 11th in the world for emissions per head of population – 19 tonnes of CO_2 equivalent per person.
- Agriculture accounts for 50% of N.Z.'s emissions and is growing at 1% per year. Transport accounts for 19%.

But it's not all doom and gloom

"This is actually a great opportunity. By dealing with climate change we can also deliver the access to green energy that the world's poorest people have long been demanding; add greater protection to the future environment; increase global security and adopt smarter life styles – **Christian Aid, U.K.**

PERSPECTIVES

"Imagine melting ice caps and rising sea levels, threatening highly developed coastal areas... Imagine a warmer and wetter world in which infectious diseases such as malaria and yellow fever spread more easily. This is not science fiction, it is sober prediction based on the best science available"

Former UN Secretary General, Kofi Annan.

Hot Topics

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What the churches of the Pacific are saying

In 2004 the Churches of the Pacific met in Kiribati to consider how they should react to the threat of climate change. Their report is available on the World Council of Churches website. (www.wcc-coe/wcc/what/jpc/otintai). Their report is in the form of a declaration:

THE OTIN TAAI DECLARATION starts with a proclamation:

Let all the islands rise and sing and to our God their praises bring,

On strings and drums God's might proclaim to shout the glory of God's name.

Pasifika, Pasifika, with throbbing reef and coral shore,

For fish and shell and mighty whale, for all God's gifts our thanks we pour

We the participants in the Pacific churches' consultation on climate change feel called by God to:

- Affirm our commitment to care for the earth as our response to God's love for creation
- Declare as forcefully as we can the urgency of the threat of human-induced climate change to the lives, livelihoods, societies, cultures and eco-systems of the Pacific Islands.
- Dedicate ourselves to engaging in education and action on climate change.
- Call on our sisters and brothers in Christ throughout the world to act in solidarity with us to reduce the causes of human-induced climate change. We issue this call particularly to churches in the highly industrialised nations whose societies are historically responsible for the majority of polluting emissions. We further urge these countries to take responsibility for the ecological damage that they have caused by paying for the costs of adaptation to the impacts that are anticipated.
- Invite church-related specialised ministries for emergency- response, development and advocacy to integrate climate change and adaptation projects into their policy.
- Pressure all countries to ratify and implement the Kyoto protocol, especially the United States and Australia
- Encourage companies that are major producers or consumers of fossil fuels to support a transition toward less carbon-intensive economies, reduced energy usage and the development of cleaner renewable energy sources.

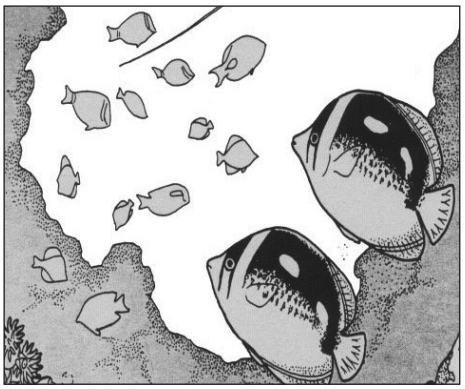
What does this statement say to our Church, our aid agency and our government?

Are you in a position to do anything about it? If so, what?

What We Believe

Throughout the Bible from the Genesis creation story onward, we learn about God's love for the earth and all its creatures including humanity. The Biblical understanding of the wholeness and inter-relatedness of all creation has some similarities to the traditional Pacific teachings about the land known as Vanua/ Fonua/Whenua/Enua and the ocean referred to as Moana. The implications of this vision include the need for us humans to live with respect and humility within God's creation. Responding to God's love for creation, we are called to care for the earth and limit destructive activities such as those that contribute to climate change.

Is this what you believe? And how does such a belief guide our response to climate change?



PERSPECTIVES

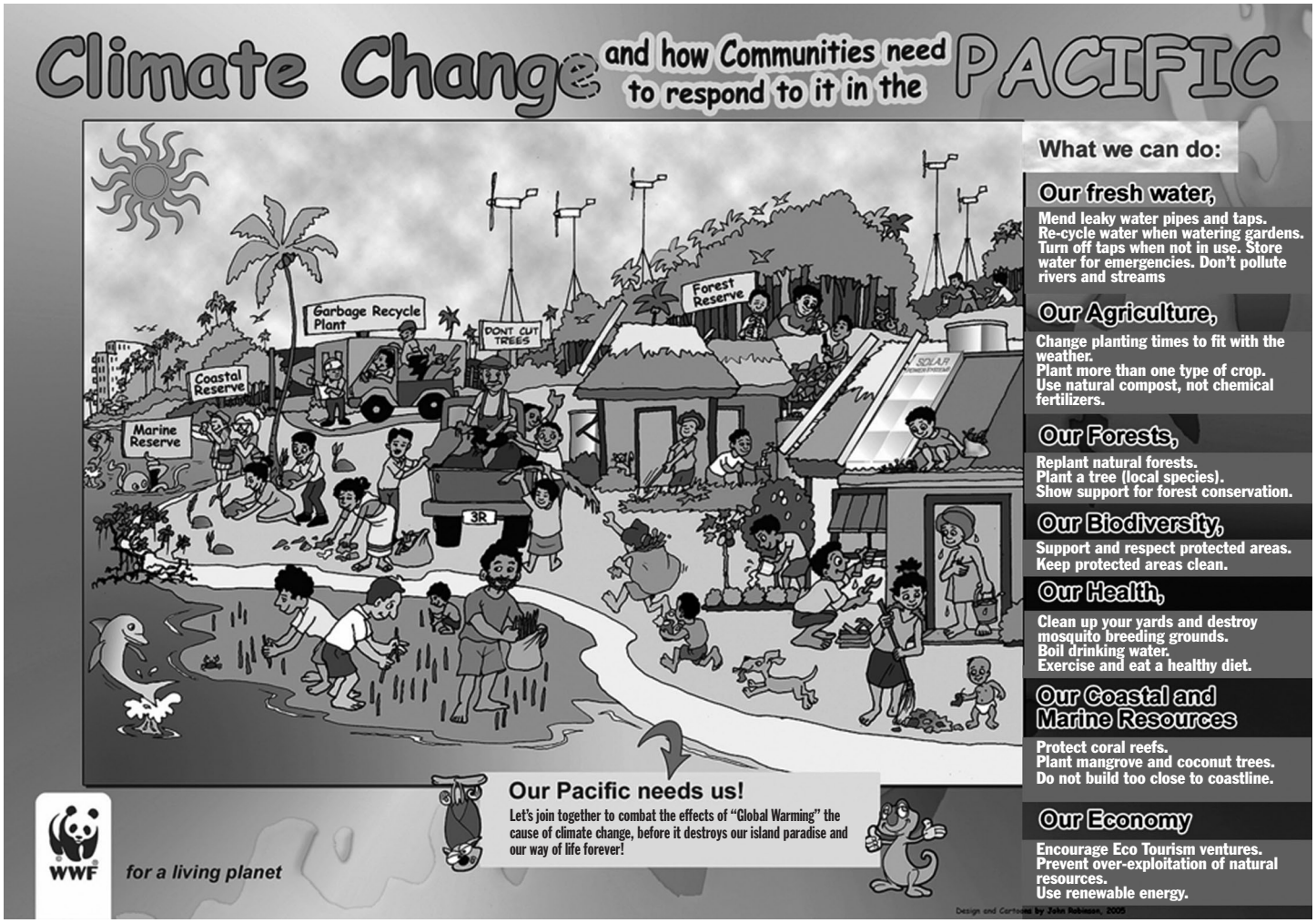
"If nothing is done as a matter of urgency, Kiribati, like other small island states and low-lying coastal areas and other ecosystems will continue to suffer in silence the ongoing and increasingly unbearable impacts of climate change and sea level rise".

Government of Kiribati 2000.

"If we are talking about our island States submerging in ten years time, we simply have to find somewhere else to go"

President of Kiribati, Anote Tong, at the Pacific islands Forum, October 2006.

Impacts of Climate Change on the way people live



Yvonne Coppola

It is clear from the facts we already have about climate change, and the projections of what is probably going to occur in the near future, that our planet is facing some serious problems. It is also clear that the greatest impact of climate change will be felt in the developing countries and by poor people.

Close to home the changes will have a dramatic effect on the Island nations of the Pacific.

"The Pacific is one of the most vulnerable regions in the world to the impacts of climate change. These impacts are likely to pose significant challenges to sustainable development and will affect the region's environment, society and economy"

NZAID 2006.

How does climate change impact on our lives in the Pacific?

1. Land use.

The subsistence agriculture of the villages (where 80% of Pacific peoples live) will be affected by sea level rise and village people will find their gardens are less productive. Gardens will have to be established on higher , and often less fertile, ground

Low lying atolls in countries like Tuvalu and Kiribati will disappear altogether. The Tuvalu government is already anticipating the time when all people, (11,000) may need to be moved off the atolls because their land becomes unusable.

2. Fresh water

Most Pacific countries, especially the smaller ones, rely on rainwater for drinking and other uses, and there is an increased probability of cyclones destroying water storage tanks. Storm surges will leave behind water that is unfit for drinking. The loss of sources of fresh water combined with increased urbanisation will force Pacific countries to use expensive options – e.g. reservoirs and desalination plants.

Sea level rises, already experienced in places like Tuvalu and Kiribati, have meant that the water from their wells can only be used for washing or watering. (The salt concentration is too high for drinking.)

3. Agriculture

It is through agriculture that Pacific nations hope to improve their economic performance and most of the Island nations' agricultural activity takes place on the coastal plains. This land will

become less productive and crop damage and crop disease will be more prevalent. Banana and coconut plantations are often destroyed by cyclones, and increased cyclone activity will allow less time for plantations to recover.

Taro, a vital subsistence crop for many Pacific peoples, has a very low tolerance to salt water. This has already had an impact in Tuvalu where taro pits have been ruined by inundation of salt water.

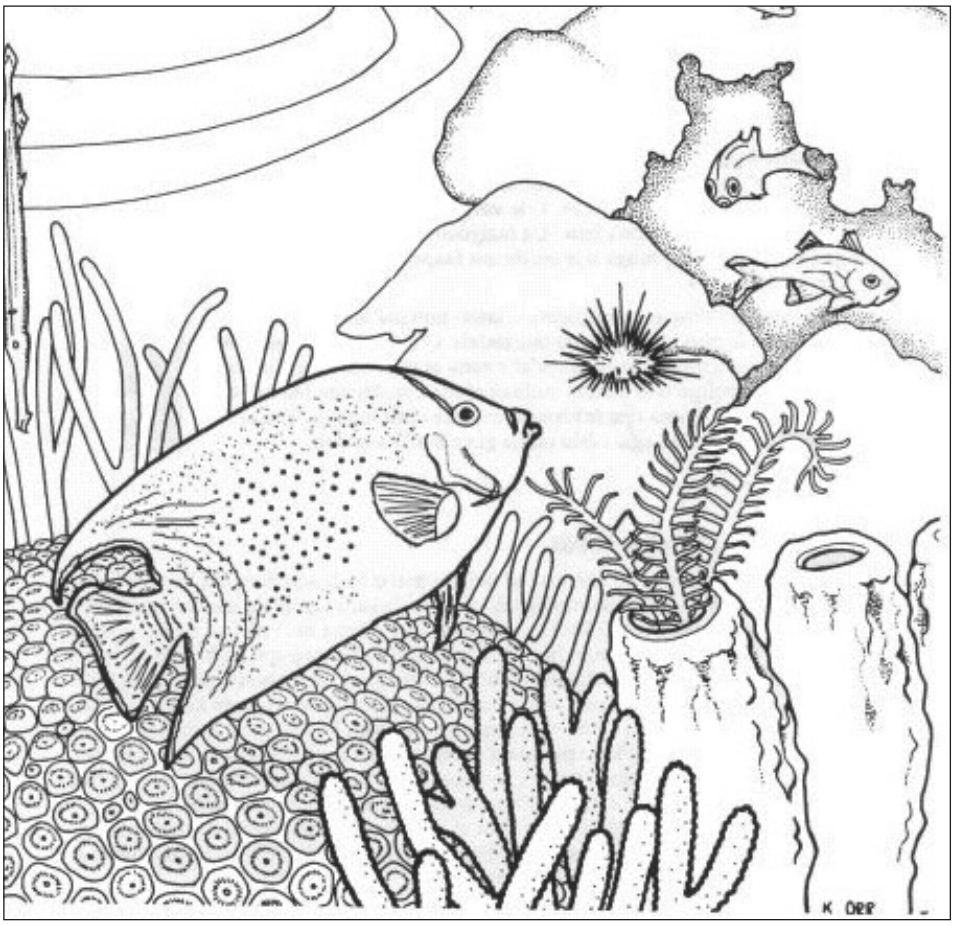
We have already seen the effects of El Niño in 1997/98 when drought wiped out two thirds of Fiji's new sugar cane plantings. Tonga's squash exports were reduced by half. Papua New Guinea required emergency food aid for those in the isolated highlands and low-lying islands. More than 30 atolls in the Federated States of Micronesia ran out of drinking water. Large areas of Samoan natural forest were destroyed by fire, sparked by dry conditions.

4. Health.

Disease prevalence will increase as warmer, wetter conditions favour the breeding of disease-carrying insects, such as mosquitoes and aquatic pathogens such as Giardia.

- Water provides the habitat for mosquitoes and warmer temperature allows breeding in areas that were previously too cold. In the Pacific, malaria is confined to the Western Pacific (Papua New Guinea, Solomons and Vanuatu) but it could reach the Eastern Pacific (e.g. Fiji). World-wide, 3 million people die from malaria every year and most are children under five.
- Giardia is a parasite that can be found in contaminated water. It is highly contagious and is the cause of death in young children through diarrhorea. It is the storm surges that bring about this type of contamination to water supplies.

As staple food production is threatened there will be an increased reliance on imported foods which are often less healthy substitutes and more expensive. People's health will suffer. This can already be seen in urban areas where people have had to change to a "tinned fish and rice" diet.



5. Forests

Forests are natural regulators of the amount of CO_2 in the atmosphere. They also provide food, building materials and medicines for island people as well as timber for export. Papua New Guinea has the third largest block of unbroken tropical forests in the world and climate change puts this under threat.

In 1997 over 165,000 hectares of forest burned in Indonesia as a result of the El Niño related extended dry season. Papua New Guinea also experienced similar fires, but on a smaller scale.

6. Biodiversity and Marine resources.

The islands of the Pacific have a rich biodiversity due to the unique habitats provided by coral reefs, forests, mangroves and wetlands. Perhaps the most obvious effect of climate change on the ecosystem is coral bleaching, caused by increasing ocean temperatures. Coral lives at an optimum temperature of between 18 and 28 degrees. A slight change causes coral bleaching and if temperatures do not return to the normal range the coral dies. This in turn affects the habitat of reef fish, invertebrates and other marine animals which rely on the reef for food and habitat. Some migratory species of fish, such as tuna, will move to ocean conditions more suited to their survival.

Sea level rise and rising temperatures will also affect mangroves.Recent research modelling suggests that the Pacific could lose its mangrove areas by the end of the century. Mangroves are important nurseries for fish and act to filter coastal pollution. They also prevent coastal erosion.

In conclusion, most of the changes mentioned above will bring about increased poverty in Pacific states. Climate change and poverty are inextricably linked.

CLIMATE CHANGE IS A POVERTY ISSUE

Climate Change - future scenarios

Scientists and others have taken the known facts and endeavoured to tell us what will happen in the near future if the present conditions prevail or get worse.

Some of the probabilities are as follows:

Globally

- Global temperatures are expected to rise between 1.4 and 5.8 degrees by 2100.

These rises in average global temperature, due to increased greenhouse gas concentration, could cause sea levels around the world to rise for three reasons:

1. Warming the water of the oceans will cause it to expand
2. The melting of the ice glaciers and ice shelfs will increase the amount of water in the oceans.
3. If ice and land break up and fall into the ocean it will displace water, like dropping ice cubes into a glass of water.

- Global sea levels are expected to rise between 0.09 to 0.88 metres by the year 2100. Rises will continue for hundreds of years even if action is taken now to hold CO_2 concentrations at their current levels.
- CO_2 emissions are acidifying the oceans. If by 2100, emimisions are not cut back to ensure they do not increase by more than 200%, damage to life in the southern ocean will be irreversible.

PERSPECTIVES

"I urge governments, development and environmental organizations to work together to find sustainable solutions to avert a catastrophe that will exacerbate human suffering to a magnitude that perhaps the world has not yet seen"

Archbishop Desmond Tutu.

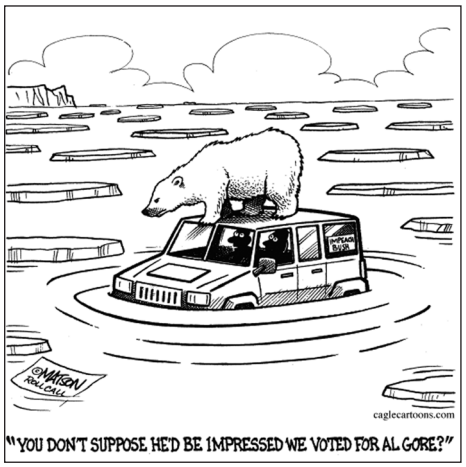
Damage to coral reefs, fisheries and tourism will have serious economic impacts.

- A rise in average temperature of 3 degrees would reduce rice yields by 50%.
- The effects of climate change are already being felt everywhere. Nonetheless, it is the poor in the poorest countries of the world who have already begun to feel its effects most. Poor countries and poor communities lack the resources to tackle the increasing disruption and disasters they are certainly going to face. They will be especially vulnerable because:

1. They are heavily reliant on natural resources, particularly agriculture and fishing.
2. They have only a small number of economic sectors
3. They live in disaster prone areas – low-lying coastal areas and small island states.
4. They have little institutional capacity to cope with disasters
5. They have poor infrastructure, housing, water supply, and communications.
6. They have limited resources for rehabilitation

In the Pacific

- Most of the arable land in the Pacific, which is already under intense pressure, is low-lying and thus will be subject to damaging salt water seepage as the sea level rises.
- Rapid climate change will affect the availability of fresh water, especially on low-lying islands where most people rely on rain water.
- The prevalence of diseases will increase as warmer wetter conditions favour the breeding of disease-carrying insects such as mosquitoes.
- The increased fluctuations of the El Niño will increase the need for desalination plants on both Tuvalu



and Kiribati for drinkable fresh water. (Plants already exist on a small scale)

- El Niño will significantly alter the seasonal tuna catches for most Pacific Island nations, a significant export earner for all Pacific nations.
- Coastal erosion is already widespread in the Pacific but will become worse. Storm surges, caused by climate change, will add to the long -term erosion.
- In most Pacific Islands population is increasing. Add to this the decreasing availability of arable land and there is going to be a huge impact on the availability of suitable local food. Thus prices at the markets will increase and there could be food shortages.

PERSPECTIVES

"It is not sufficient to have debt cancelled, aid raised to 0.7% of GDP and fair trade if you also have global warming and environmental degradation... we have to mobilise to make sure that climate change is on the same front burner in people's minds as the other issues"

Mary Robinson, former UN High Commissioner for Human Rights.

Excuses used to prevent us facing changes

Professor Ralph Chapman from Victoria University, in a paper to the conference on "Climate Change and Governance" in Wellington in March 2006, analysed some excuses we have being telling ourselves for the last twenty years and which have effectively blocked action for change. They are:

ONE. Information overload.

Because there is too much information out there we can't make a definite decision to do anything. We will wait for the 'clincher' evidence before we are convinced the issue is important. Chapman quotes the Chair of General Electric, "There's no time to wait because tomorrow is now".

TWO. Competing priorities.

Climate change is important but other issues are more important right now. Chapman quotes Sir David King, Britain's top scientist, who said when comparing the severity of two problems like terrorism and climate change, "When two problems become so pressing, there's actually a good case for addressing both".

THREE. Others should act.

This story has appeal for us. It says that while big cuts may be necessary, other countries are in a better position than us to make them. We can buy 'emission reductions' from others more cheaply.

Chapman says that economists are attracted to this argument but it relies on other countries' actions to reduce emissions. It is also a defeatist approach, says Chapman who goes on to say, "It will do little to tackle the underlying and more important objective of influencing what other countries do, or indeed making a useful contribution ourselves."

FOUR. Technology will save us.

This argument says that technology will save us from having to change our lifestyles or needing to radically adapt our economy.

Chapman replies that there is some merit in technological optimism – e.g the cost of generating a kWh of electricity from wind has fallen from US$1 in 1978 to five cents in 1998. "But some technologies solve problems but also create problems of their own e.g. the development of the automobile, so we need to tread carefully."

FIVE. We can rely on the private sector.

Chapman replies, "While the private sector is vital to mitigating climate change, we cannot rely solely on it in the absence of clear government action. The private sector needs the government to set the framework conditions." Chapman quotes Oystein Dahle, "Socialism collapsed because it did not allow prices to tell the economic truth. Capitalism may collapse because it does not allow prices to tell the ecological truth". Chapman goes on to say it is up to Government to set the framework, and a robust and well-considered framework, within which the private sector can act.

SIX. Action is just too costly.

The argument goes, " Emission cuts are too costly, and it's not clear what approach is cheapest. There is no advantage moving ahead of others".

Chapman says that the only sensible way to assess overall benefits versus costs is to take into account both ethical and self-interest considerations and consider New Zealand's contribution to a global effort. "In terms of the global effort New Zealand is now extremely unlikely to move ahead of others. Our emissions track has been relentlessly upwards, while others such as the U.K. and much of northern Europe have been pushing their emissions track into stabilisation mode. We are now among the slow movers".

Is there not a 7th excuse "This is not a spiritual issue".

What's your answer?

Can you recall some excuses you have made yourself or have heard others make?

What can be done? and What is being done?

Sean Weaver, lecturer in Environmental Studies at Victoria University says that we need to take action on three fronts:

1. **Setting and meeting targets for emissions reduction and growing our carbon stocks is the 'mitigation' agenda.**
2. **Building strategies to cope with the changing climate is the 'adaptation' agenda.**
3. **Convincing and helping other countries to do the same is the 'global' community agenda.**

Using these three categories let's look at the Pacific.

Mitigation

For the Pacific Island communities, mitigation options fall into three broad categories: fuel substitution, energy efficiency and forestry.

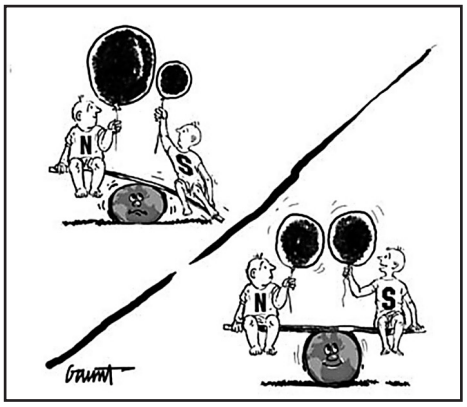
- Most electricity in Pacific nations is generated from expensive diesel fuel. Generators often break down or need replacement. (Recently the generators on Niue broke down and replacements had to be flown in from New Zealand at considerable expense.) The Pacific Islands forum is negotiating for bulk purchase of fuel for smaller island states and also looking at renewable energy possibilities.
- Some buses in Vanuatu are now running on coconut oil rather than diesel.
- In the Cook Islands work is being done on a hot water heater which gets its heat from the air and not just the sun.
- Solosolu village in Samoa has a village re-planting programme and they have decided to replant in indigenous plants and trees.

Adaptation

As the impact of climate change escalates, Pacific Island countries are being faced with increasing costs of adapting to climate variability and sea level rises, even though the problem is largely caused by others! For some countries, there will be no choice – adapt or disappear!

Most Pacific countries are still building sufficient institutional capacity to handle climate change but despite that there are already examples of some villages taking the initiative in making changes.

- Several families in the village of Sao'oluafata on the island of Upolu in Samoa have lost their dwellings to coastal erosion. They have replanted their shorelines with vegetation and they are now planning to build a sea wall. The cost of the sea wall was reduced when the village community agreed to provide the labour and much of the raw materials.
- In Vanuatu the Lateu community decided to relocate most of their dwellings because of erosion. The community and the Church of Melanesia absorbed the cost by doing most of the work.
- In the Lau group of islands in Fiji, WWF has been working with four villages on Kabara, where the problem is to ensure access to clean rain water. WWF provided funding for community water tanks to increase storage capacity. Also, the people agreed to no longer use a poisonous plant to catch fish in the lagoon, which was adding to the bleaching of the coral.



The costs of adaptation will be beyond many countries. For example, the World Bank estimates that to protect the atoll of Tarawa, the capital of Kiribati, will cost US$2 million for a sea wall.

The U.K. government is pushing the World Bank to set aside a fund of US$20 million to assist developing countries adapt to the adverse effects of climate change.

At the recent international climate change conference in Nairobi, the All Africa Conference of Churches and Caritas International urged industrialised countries to compensate poor countries for the damage caused by high carbon emissions. If that occurred then such compensation could be used to fund both mitigation and adaptation costs.

Global community

The Kyoto agreement is the major instrument for a global response to climate change. (See the website www.unfccc.int/resources for more details)

The Kyoto protocol is the outcome of international concern about climate change and recognition that such a global problem requires a global solution. The United Nations took the initiative and 185 countries have signed an international

PERSPECTIVES

"I am deeply concerned about what is happening to our Pacific ocean, to our islands and to our people. I come from a small island in the Fiji group and because of that, the memories of seasonal planting, harvesting and fishing I feel deep in my bones, I relish the moments that I was able to immerse myself into the rhythm of life in my small birth island. But I fear that perhaps one day I will no longer feel it because my birth island may be partly submerged under water and many of my people have joined the swelling number of 'climate refugees' in the region. I pray that that day will not come to pass"

Petero Mataca, Archbishop of Suva.

agreement known as the "United Nations Framework Convention on Climate Change" (UNFCCC). This agreement was concluded in 1992. The objective of the convention is for all countries to reduce their human-induced greenhouse gas emissions so that they do not reach dangerous levels.

The member countries of UNFCCC agreed that there needed to be stronger regulations to try and achieve the goals of the Framework agreement. This led to the Kyoto protocol, with legally binding measures. It requires the 35 leading industrialised nations to cut their emissions to 5% below their 1990 levels by 2012. The protocol also allows for emission trading, whereby one country can trade its emission credit with another country that is not reaching its target.

Developing countries like Pacific Island nations are not bound to have emission-reduction targets but instead can participate in the Kyoto protocol through a 'clean development mechanism'. This mechanism allows for industrialised countries, like New Zealand, to pay for a project that will reduce emissions in poorer nations, and then the industrialised country is awarded credits that can be applied to meeting their own emission targets. For example, this mechanism enables countries like N.Z. to assist Pacific countries to develop more efficient ways of energy production and NZAID is involved.

Did you know that New Zealand, unfortunately, is going backwards in achieving its target?

Ponder these difficulties.

1. Governments are limited in what they can do because they no longer control the key economic levers. They are left hoping that market mechanisms will bring about the necessary changes. There are very few companies that would take the lead – until being proactive improves their profits.
2. It is even more difficult for Pacific Island nations to take decisive action to reduce human-induced gas emissions. Small nations and small populations do not produce a huge amount of green house gases. But what about inefficient diesel generators – what about slash and burn agriculture – what about lazy waste disposal?
3. Another problem that agencies face in some Pacific countries is balancing the religious beliefs people have concerning climate change with the views of a scientific community. Many, for example, believe all disasters are acts of God and judge politicians on how they respond with relief and rehabilitation, rather than encouraging their government to instigate proactive and preventative adaptation measures.

Gary Braasch, 2005

Tuvaluan kids hang out as an extra high tide floods their neighbourhood.

It is often argued that taking action to combat climate change is a good investment.

But it is not just an economic argument, it is a moral and a spiritual argument about countries working together for a more certain common future where values we have spent the past few centuries building are not destroyed. We cannot leave this to the market, as the capitalist system does not always take into account the concerns of the environment when it is seeking to make a profit. Nor can we leave it to the politicians who often have to compromise to stay in power.

PERSPECTIVES

"We believe that caring for the earth is a spiritual commitment. People and other species have the right to life unthreatened by human greed and destructiveness. Listen to the scientists and the cry of the earth and address the reality of climate change with the extreme urgency that it demands. We believe that the whole earth community deserves to benefit from the bounties of creation. Faith communities are addressing climate change because it is a spiritual and ethical issue of justice, equity, solidarity sufficiency and sustainability"

World Council of Churches, November 2006.

Oh dear, What can I do?

If you attended the movie "An Inconvenient Truth" you would have received a one-page flyer indicating ten things that you can do to address the problem.

1. Change a light – use the new energy saving fluorescent light bulbs.
2. Drive less. Walk, bike or car pool. Use pubic transport.
3. Recycle more. You can save more than 1000kg of CO_2 per year by recycling just half of your household waste.
4. Check your tyres. Keeping your car tyres at the right pressure improves gas consumption by 3%.
5. Use less hot water. Wash your clothes in warm or cold water.
6. Avoid products with all that packaging.
7. For air- conditioned buildings, move the thermostat down 2 degrees in winter and up 2 degrees in summer.
8. Plant a tree. A single tree will absorb about 1 tonne of CO_2 over its lifetime.
9. Turn off electronic devices. E.g. T.V., DVD, Computer etc.
10. Be part of the solution.

PERSPECTIVES

"It is no longer a question of whether the earth's climate will change, but rather when, where and by how much"

Robert T Watson, Chair of the U.N. Inter-Governmental Panel on Climate Change (IPCC).

by Dr Floor Anthoni Seafriends Marine Conservation Centre, Leigh

Here is another idea – pay for the Carbon Dioxide you produce

Obviously it is practically impossible for an individual or household to move instantly to a way of life that generates no carbon dioxide. But there are things that a well motivated family or business might do to mitigate the effects of the carbon dioxide their activities generate.

Landcare Research has one such scheme. It is called CarboNZero. At its heart is a web site (www.carbonzero.co.nz) that enables you to calculate the amount of carbon dioxide you generate from your travel, energy use and waste production and how much it would cost to off-set that amount. It even provides an on-line system for you to pay! Landcare uses this offset payment to buy carbon credits through verified schemes such as regeneration of native forests, and renewable energy generation.

The scheme is aimed at both businesses and households and includes such interesting innovations as calculators for conferences and events, travellers and tourists. The site also has lots of information on how to reduce your energy use.

One criticism of the scheme is that some of the offset options are distant in time from the carbon dioxide you generate now. For example, you pay this month for the carbon dioxide you generated last month but the native forest will take a long time to grow the wood you pay for. Anyway isn't that really only temporary storage?

Another criticism is that it enables those that can afford it to buy their way out of responsibility – I've paid for my carbon generation so I have done my bit. The costs are surprisingly reasonable – when I

Find out more about carbon credits, carbon trading and carbon caps.

It seems that carbon trading will be the way that N.Z. will go.

Is this satisfactory?

Will it adequately address the issue of rapid climate change?

Will it have any effect on our Pacific neighbours?

did the calculation for my household of two adults and two teenage children it showed we needed to pay $16.61 per month.

Provided that carbon off-sets are seen as an interim measure, a gesture showing a commitment to supporting action to reduce climate change must be better than driving a V8 and not giving a toss. Certainly the web site is worth a look, and it actively encourages people to reduce their climate change impacts before buying off-sets.

PERSPECTIVES

The Intergovernmental Panel on Climate Change (IPCC) established by the United Nations Environmental Programme (UNEP) and the World Meteorological Office (WMO) in 1988, has become the 'gold standard' of the scientific community. It sifts through all the available evidence to see what is genuinely known about the topic across the world as well assessing climate predictions.

"Global warming is made worse by man-made pollution and the scale of the problem is unprecedented in at least 20,000 years" IPCC

The revent IPCC report released this month has confirmed the urgent need to actively address climate change.

Prayers for the Pacific

Our Pacific islands are yours O Lord,
And all the seas that surround them
You made the palms trees grow
And the birds that fly in the air

When we see your beautiful rising sun
And hear the waves splash on our shores
When we see the new moon rise
We know o Lord how wonderful you are

Watch over our people with justice
Teach us with righteousness
Speak to us daily
Strengthen us to serve you

Bernard Narakobi, Papua New Guinea (adapted)

O God, save our shores from the weapons of death,

Our lands from the things that deny our young ones love and freedom.

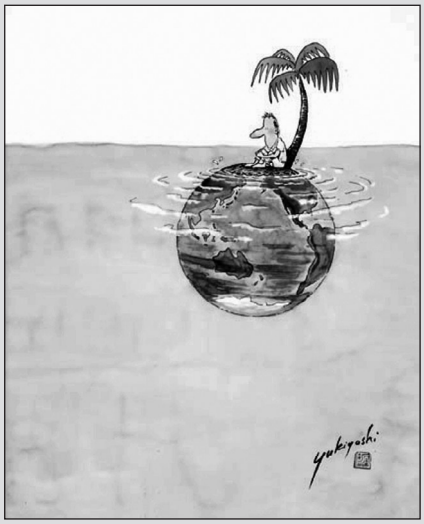
Let the seas of the Pacific ocean carry messages of peace and goodwill.

Let each child swim and breathe the fresh air that is filled by the Spirit

Dr Amanaki Havea Tonga.

Useful websites:

Christian World Service – www.cws.org.nz; Ecumenical Centre for Research – www.ecrea.org.fj; World Council of Churches – www.wcc-coe.com ; Oxfam – www.oxfam.org.nz ; Pacific Islands NGO network – www.piango.org.fj ; Global education centre – www.globaled.org.nz ; Development Resource Centre – www.dev-zone.org.nz ; NZAid – www.nzaid.govt.nz ; Pacific Concerns Resource Centre – www.pcrc.org.fj ; University of the South Pacific – www.usp.ac.f ; Christian Aid, U.K.- www.christian-aid.org.uk ; Friends of the Earth – www.foe.org ; South Pacific Regional Environmental Programme – www.sprep.org.ws ; Victoria University – www.vuw.ac/climatechange ; United nations – www.UNEP.climatechange.net ; BBC – www.news.bbc.co.uk/2/hi/in_depth/sci_tech/2004/climate_change/default.stm ; WWF. www.wwfpacific.org.fj or www.panda.org and, The Intergovernmental Panel on Climate Change. www.ipcc.ch Asia Pacific Network www.apn.gr.jp Climate Action Network www.climatenetwork.org

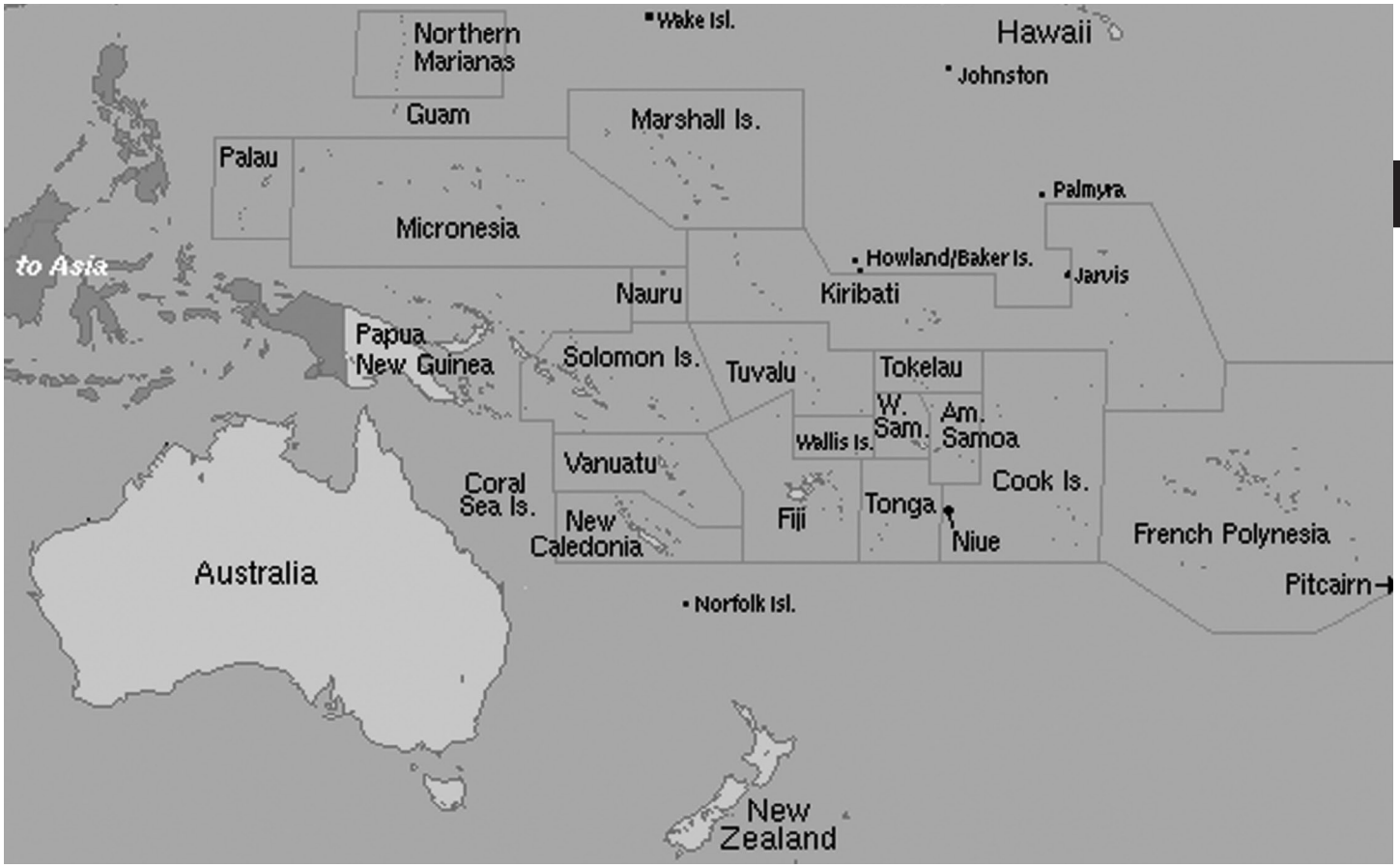


Tokoro Yukiyoshi

If you want to keep in touch with a lobby group advocating for action over climate change go to www.globalclimatecampaign.org.nz

Other references:

Climate Change in the Pacific – published by WWF South Pacific programme, Fiji, 2003



"Treat the earth well. It was not given to you by your parents. It was loaned to you by your children"
Kenyan proverb

The next issue of *Hot Topics : Pacific Paradise Lost?* will be on Health in the Pacific with particular reference to HIV and AIDS.

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