



RECLAIMING PARADISE

FACING AN UNCERTAIN FUTURE, PACIFIC ISLANDERS ARE TAKING STEPS TO DEAL WITH THE IMPACTS OF A CHANGING CLIMATE. STORY: JEREMY KENNETT



Back in 1975, things were simpler in the Pacific islands. Phosphate mining was still king in Nauru, with exports of the valuable fertiliser giving its people one of the highest per capita incomes in the world.

Samoa was well into its second decade of self-rule, after becoming the first nation in the Pacific to declare independence in 1962.

Fiji was also a newly independent nation with all the hopes its new status carried.

And on the idyllic beaches of Micronesia, the biggest worry seemed to be for tourists watching out for falling coconuts.

But on the other side of the globe, scientists were just starting to identify a problem more than 100 years in the making – a problem that left unchecked could spell the very end of human habitation in the Pacific.

On 8 August 1975, climate science pioneer Professor Wallace S Broecker published a paper in academic journal

Science entitled ‘Climatic change: are we on the brink of a pronounced global warming?’

Professor Broecker contended the amount of carbon dioxide in the atmosphere had been rising rapidly since the Industrial Revolution of the early 1800s and would soon lead to large shifts in average temperatures.

“We normally have cyclone seasons, now we don’t have cyclone season anymore, it comes anytime.”

While Professor Broecker’s analysis is now part of mainstream climate science, at the time he said there was not enough evidence to predict what the consequences would be for agriculture and sea level rises.

Now those consequences are emerging, particularly on Australia’s doorstep, as Pacific islanders deal with the realities of a rapidly changing climate. They are at the



coalface, so to speak, working to adapt to sea level rises, coastal erosion and ever increasing natural disasters.

With so many small states scattered across the vast Pacific Ocean it's unwise to generalise about the impacts of climate change. What is already a problem for Micronesia may not yet be an issue in the Solomon Islands.

While the very viability of low lying coral atolls could be endangered if sea levels continue to rise, for volcanic island nations with higher ground the issues are more about adapting to life with less.

Yet the clear message from a recent regional climate change workshop organised jointly by the Australian parliament and the Inter-Parliamentary Union was that, regardless of geography, all Pacific island nations face some form of threat and they shouldn't be left to deal with the consequences on their own.

As a mixture of volcanic and coral islands, the Kingdom of Tonga has more highlands than most in the Pacific. But rapidly changing weather patterns has still left its people constantly under threat.

Tongan Environment and Climate Change Minister Lord Ma'afu says climate change is becoming as big a threat as the cyclones and floods that have historically plagued the nation.

"At present natural disaster is foremost, and second is climate change," he says. "But eventually climate change will be up there at the same level with natural disasters."

Climate change is also making the cyclones that strike Tonga more dangerous and unpredictable.

"We normally have cyclone seasons, now we don't have cyclone season anymore, it comes anytime, and it's not a surprise to the people anymore."



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Increasing frequency and severity of tropical storms is a major issue right across the Pacific, from sub-tropical Tonga in the south to the vast archipelago of the Philippine islands in the north.

Covering a chain of more than 7,000 islands, the Philippines is no stranger to natural disasters, from earthquakes to floods to frequent volcanic eruptions.

However Filipino congressman Dr Danilo Fernandez says typhoons are becoming the most serious threat as the impacts of climate change begin to make themselves felt.

"Climate change is really being felt by our country," Dr Fernandez says. "We are seeing a lot of typhoons, up to 20 typhoons are hitting the country each year."

'Super typhoons' are also becoming more common, leaving widespread devastation in their wake.

"There are not only the economic losses, but also the deaths incurred. We lost 958 people and 84 missing and 84 injured," Dr Fernandez says.

"Over the last 20 years this is not happening to the Philippines, but now we have really felt the climate change and every typhoon that hits our country is more and more devastating."



Tonga is replanting mangroves along its coastline and changing planning laws to limit coastal erosion.

Beyond the human cost and damage to homes and infrastructure, the floods caused by typhoon activity are also threatening the Philippines agricultural areas.

“The problem is you have typhoons, the floods stay in the area then the crops and agricultural lands are being damaged, and this causes problems with food security especially in the far flung areas of the country.”

The slow but inexorable sea level rises in small nations like Tuvalu and Micronesia are certainly less dramatic than the super typhoons and cyclones lashing their larger neighbours. But the long-term impacts on food security in these countries could be even more damaging.

Micronesia Vice-Speaker Berney Martin says the impact of even the small sea level rises seen so far has been significant.

“The salt water intruded into the taro patches, which is one of the main crops in the islands, and it really destroyed all the taros,” he says.

“Those that were affected are now relying on contributed food from neighbouring islands, and also imported food.”

Salt water has also started to seep up through the ground in Tuvalu, destroying the root and vegetable crops that form the basis of the local diet.

Coastal erosion is also having an impact, allowing waves to sweep right over some parts of the islands, taking away valuable topsoil and threatening to cut main settlements in two.

Tuvalu Transport and Communications Minister Kausea Natano says the effects of climate change are putting at risk the very viability of his country.

“If nothing is done our whole country is under threat,” he says. “Foodstuffs, root crops and vegetation will be destroyed by salt water.”

Neither Tuvalu nor Micronesia has sufficient higher ground to sustain their people if sea levels continue to climb.

“There are a few highlands, but they’re not enough for all the people if they were to move to higher grounds,” Mr Martin says. “Most of them are living on low level coral islands.

“We are hoping that we can obtain technical assistance, and of course a funding source to purchase more food for these people. We are very concerned right now.”

While the situation looks dire, the emerging science of climate adaptation may offer some hope for the future for the Pacific island states most at risk.

CSIRO is leading the way in this new field, which focuses on ways to best adapt to a changing climate, rather than fighting to prevent change happening.

Dr Craig James from CSIRO’s Climate Adaptation Flagship says biodiversity in the Pacific is going to change dramatically as shifts in rainfall patterns, ocean warming and acidification, temperature change and sea level rise all take their toll.

“For their ecosystems there’s going to be changes,” he says. “Most of the Pacific countries rely on fisheries as a major source of protein, and those fisheries are going to be changing because of species responding to warmer oceans.

“So there’s going to be pressure on human use of reef fish for food stock, and that pressure has to be managed so there’s a sustainable yield.”

But Dr James says there will be opportunities among the gloom, as some species and ecosystems thrive under the changing conditions.

“It’s quite likely that things like tuna, the pelagic fish in the open ocean, will actually do pretty well under the sorts of scenarios we’re looking at in terms of ocean change, so there’s clearly an opportunity for sustainable harvest further out from the shore line.

“And there are also really good possibilities for more fresh water aquaculture to provide the sorts of food sources required.”

While Dr James calls for more research into climate adaptation, nations across the Pacific are already putting the theory into practice.

Tonga is replanting mangroves along its coastline and changing planning laws to limit coastal erosion, while the Philippines has passed legislation creating new environmental and emissions standards.

Samoa is taking a whole of government approach, working across ministries and government corporations to battle climate change and reduce emissions from transport and industry.

But while Pacific island nations are trying to adapt, they cannot fight the impacts of climate change alone.

“There are also really good possibilities for more fresh water aquaculture.”

“We need to ensure that big countries assist small island states with their climate change programs, because we are vulnerable people,” says Samoa’s Associate Minister for Infrastructure Tusa Misi Tupuola.

Leading economist and climate change adviser Professor Ross Garnaut says it is time Australia shouldered its share of the responsibility to protect the interests of our Pacific neighbours as strongly as our own.

“This is a problem, like collective security, in which there will be no solution unless each country plays their part,” he says. “Up until now we have demonstrably not played our part.”

But House of Representatives Climate Change Committee chair Tony Zappia says Australia is already assisting its Pacific island neighbours, and will continue to do so in the future.

“It may well be that some of these people will have to, in the long-term, start looking at other nations to migrate to,” he says.

“And if that is the case then certainly Australia would be one of the countries they would be looking to in terms of being a destination for migration.”

And Tonga’s Lord Ma’afu says while there is still no universal agreement on climate change action, the voices of the Pacific island nations are being carried by their larger neighbours.



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FISH FRENZY: Some species will do well in warmer waters



TOPICAL ISLAND: *Pacific nations can't fight the impacts of climate change on their own*



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“I think they’ve been heard, but the end result is ... a bit slow,” he says.

“We’ve said so much, and I think Australia and New Zealand and the countries close to us have realised the problems we’re facing and they are there for us.”

While the simple times might be consigned to the past, this sort of support could be crucial in giving Pacific islanders a better future. •

The regional climate change workshop for Pacific parliaments was made possible by funding from AusAID and the Inter-Parliamentary Union (the international association of parliaments) and was attended by representatives of the following parliaments: Australia, Cook Islands, Federated States of Micronesia, Japan, Marshall Islands, Nauru, Palau, Philippines, Samoa, Solomon Islands, South Africa, Tonga, Tuvalu and Vietnam. The Secretary General of the Inter-Parliamentary Union also participated.

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