

Chapter 8

Vulnerability to natural disasters and the potential impacts of climate change

8.1 Volume I of this report drew attention to Pacific islands states' vulnerability to natural disasters, suggesting that many Pacific island states are subjected to periodic disruption, and in some cases widespread devastation, from natural disasters. The small size and remoteness of Pacific island states makes them particularly vulnerable to the effects of extreme weather, including cyclones, earthquakes, tsunamis, tidal waves, floods and droughts.¹ Cyclones, which are especially damaging to low-lying atoll, are the most prominent and wide-spread natural disaster in the Pacific.² The recent 8.3 magnitude Pacific earthquake, which was followed by tsunamis that affected Samoa and Tonga in September 2009, is another reminder of the vulnerability of low lying islands states. In this instance, coastal inundation resulted in approximately 150 deaths and the destruction of thousands of homes.³

8.2 Volume I also cited studies identifying how the lower lying small island states are among the most vulnerable countries to the adverse effects of climate change. It cited the Garnaut Climate Change Review that suggested that small rises in sea level have been associated with saline intrusion into gardens and household water supplies. It also provided examples of village communities that have been displaced as a result of the destruction caused by king tides.

8.3 This chapter examines the security implications of both natural disasters and climate change. It begins by examining the nature of these threats before turning to examine the capacity of states to deal with these challenges. In so doing, it explores what Australia is doing to assist Pacific island states respond to natural disasters through the Asia Pacific Civil–Military Centre for Excellence and the Deployable Civilian Capacity.

1 See for example, Ministerial Conference on Environment and Development in Asia and the Pacific 2000, 'Review of the state of the environment of the pacific islands', Kitakyushu, Japan 31 August–5 September 2000.

2 According to a 2006 study by the World Bank, since 1950, natural disasters have affected more than 3.4 million people and caused 1,747 reported fatalities in the Pacific islands region, *Not if but when, adapting to natural hazards in the Pacific Islands Region*, 2006, p. 1.

3 At the Pacific Island Leaders Forum 2009, Prime Minister Kevin Rudd, suggested that given that 50 per cent of the populations of the Pacific Island countries lie within 1.5 kilometres of their coastlines 'the effect of coastal inundation is potentially huge', 'Transcript of address at the close of the Pacific Islands Forum', Cairns, 7 August 2009, <http://www.pm.gov.au/node/6115> (accessed 19 October 2009).

Responding to natural disasters

8.4 In identifying the limited capacity of Papua New Guinea to respond to natural disasters, the High Commissioner to PNG, Mr Chris Moraitis, noted three recent events: the Oro diaster of 2007, where approximately 100 people were killed by floods; the king tide which destroyed homes and flooded businesses in dozens of villages and towns in northern PNG in December 2008; and the mudslide that killed at least 10 people at the Barrick goldmine in December 2008.⁴ When asked about PNG's capacity to respond to natural disasters, Mr Moraitis claimed that 'the natural disaster system requires a lot of work and assistance'. Speaking of the king tides that affected PNG in early 2009, Mr Moraitis suggested that disaster relief in PNG is hampered by remoteness and difficult terrain, poor access to affected areas, poor roads and infrastructure and fragile communications:

They hit parts of Papua New Guinea and obviously the critical time is the first 24 hours. You hear various rumours—2,000 villagers have been affected or 200, and what do you mean by 'affected'? It was hard to discern what had happened in [New Ireland and Manus]...On one island, Tench Island, people had to be evacuated. Fortuitously, there was a PNGDF vessel in Kavieng, which was deployed to help them. We had a C130 doing training up there at the time, and we diverted that to a real-life scenario: delivering humanitarian aid in Kavieng and in Manus. But information is a problem.⁵

8.5 The Department of Defence informed the committee that Pacific island states are constrained in their ability to deal with natural disasters as they have 'poorly developed security structures and emergency response mechanisms'.⁶ Recent events in the Pacific, such as the tsunami that affected Samoa and Tonga, further highlight how the emergency response and recovery of Pacific island states is exacerbated by remoteness, poor communications, and in some instances, inadequate warning systems to alert people to get to higher ground. Because of these constraints, DFAT suggested that Pacific island states and the international community look to Australia to 'take the lead' in assisting Pacific states manage the affects of natural disasters.⁷

8.6 Since the Indian Ocean tsunami of 2004, there has been heightened awareness of the region's exposure to the affects of earthquake and tsunami. The Pacific is supported by the Hawaii-based Pacific Tsunami Warning Centre (PTWC) which monitors seismological and tidal stations throughout the Pacific and provides tsunami

4 *Committee Hansard*, 19 March 2009, p. 14.

5 *Committee Hansard*, 19 March 2009, p. 14.

6 *Submission 18*, p. 1. Mr Moraitis explained that PNG does have a National Disaster Centre, which coordinates disaster responses, and that Australia works with the Centre in times of need.

7 *Committee Hansard*, 21 November 2008, p. 3.

warning information to national authorities throughout the Pacific.⁸ However, in the case of the September 2009 Pacific earthquake, Samoa's proximity to the epicentre of the quake significantly reduced the alert time. Media reports suggested that the earthquake struck 190 kilometres southwest of American Samoa at 6.48am Samoan time and by the time the alert was issued from Hawaii, 18 minutes later, the tsunami had already reached Samoa.⁹

8.7 The Aitutaki Declaration on Regional Security Cooperation (1997) seeks to enhance regional cooperation specifically in relation to environmental disasters and transnational crime issues. The committee notes that following the Indian Ocean Tsunami of 2004, Pacific Island Leaders endorsed the Pacific Regional Framework for Action for Building the Resilience of Nations and Communities to Disasters, 2005–2015. They called upon regional organisations to assist member countries develop and implement national action plans consistent with this framework. The Pacific Plan (2005) also acknowledges the need to develop and implement policies and plans for the mitigation and management of natural disasters.¹⁰

8.8 Following the Indian Ocean tsunami, the Australia Government provided funding of \$68.9 million over four years to upgrade the Australian Tsunami Alert System to an operational early warning system.¹¹ The Australian Tsunami Warning System (ATWS) is a national effort involving the Australian Bureau of Meteorology, Geoscience Australia and Emergency Management Australia to provide a comprehensive tsunami warning system capable of delivering timely and effective tsunami warnings to the Australian population by 2009. The project also supports international efforts to establish an Indian Ocean tsunami warning system, and contributes to the facilitation of tsunami warnings for the southwest Pacific.¹² Part of the funding is being utilised to provide technical assistance to help build the capacity of scientists, technicians, and emergency managers in the southwest Pacific. The ATWS has also produced tsunami awareness materials for the Australian population through: warning signs, emergency preparedness, community awareness publications, action plans and hazard disaster reduction. The committee also notes at the 2005

8 The PTWC is comprised of 26 participating international Member States which include Australia, New Zealand, Fiji, the Cook Islands and Western Samoa. 'Tsunami Warning System', <http://www.geophys.washington.edu/tsunami/general/warning/warning.html> (accessed 15 April 2009).

9 Adam Morton, 'No time to alert islands of danger', *Age*, 1 October 2009.

10 The Pacific Plan: For Strengthening Regional Cooperation and Integration, p. 7, http://www.forumsec.org/UserFiles/File/Pacific_Plan_Nov_2007_version.pdf (accessed 13 July 2009).

11 Australian Tsunami Warning System, http://www.ema.gov.au/www/emaweb/emaweb.nsf/Page/FundingandGrants_Projects_Australia_nTsunamiWarningSystem (accessed 6 October 2009).

12 See http://www.bom.gov.au/tsunami/about_atws.shtml (accessed 15 April 2009).

Pacific Forum in Madang, Australia announced an additional \$2 million to assist with natural disaster preparedness and response in the region.¹³

8.9 The committee draws attention to evidence taken by the House of Representatives Standing Committee on Climate Change, Water, Environment and the Arts. It noted that the Remote Indigenous Communities Advisory Committee had set a number of strategic objectives in helping remote communities manage the effects of extreme weather. A number of these objectives could well inform Australia's policy on emergency and disaster relief assistance to the region particularly in minimising the damaging effects. The objectives include developing knowledge and skills to enhance emergency management and building the capacity of communities to improve safety through sustainable emergency management.¹⁴

8.10 In the following section, the committee examines Australia's capacity to respond to natural disasters that may afflict PNG and the southwest Pacific.

Developing an integrated response capacity

8.11 As noted above, Pacific island states are constrained in their ability to deal with natural disasters; they have poorly developed emergency response mechanisms and still look to Australia in times of need for assistance in responding to natural disasters. In Chapter 4, the committee considered the Asia Pacific Civil–Military Centre of Excellence and outlined the way that it integrates defence and civilian agencies that specialise in law enforcement, development assistance, humanitarian relief, health, correctional services, and municipal services (such as water and infrastructure), education, and political and administrative governance. The centre seeks to improve the effectiveness of Australian civilian and military collaboration to prevent, mitigate and respond to conflicts and natural disasters in the Asia–Pacific region.¹⁵

8.12 In addition to the initiative of the Centre for Excellence, the Australian Government has recently announced that it would develop a rapid deployment corps of civilian experts to assist in international disaster relief, stabilisation and post-conflict reconstruction efforts. The committee heard that an inter-agency task force has been formed, led by AusAID, but involving representatives from the Department of Defence, the AFP, the Department of the Prime Minister and Cabinet, the Australian Government Solicitor and the Attorney-General's Department. The Centre

13 Pacific Islands Forum 2005, *Forum Communiqué*, Item 24, p. 5.

14 House of Representatives Standing Committee on Climate Change, Water, Environment and the Arts, *Managing our coastal zone in a changing climate: The time to act is now*, October 2009, paragraph 3.131.

15 Australian Government, Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, pp. 23, 54. Another important role for the Centre of Excellence is to enhance Defence's interoperability and coordination with the Australian Federal Police. The White Paper also acknowledges that Defence forces must be deployed in support of regional humanitarian assistance and disaster relief.

of Excellence is separately providing support to this initiative in terms of expert advice. The Deployable Civilian Capacity (DCC) will enable:

...rapid and early delivery of stabilisation and recovery assistance to countries that experience conflict or natural disaster. The program will be sufficiently adaptable to allow Australia to tailor its response to a particular event or emergency and will improve Australia's integration into multilateral reconstruction and stabilisation operations.¹⁶



Preparing for the cyclone season and planning disaster management (image courtesy AusAID).

8.13 It is intended that the DCC will build on Australia's experiences in East Timor and Solomon Islands. In cooperation with other agencies, AusAID will identify, train, rapidly deploy and sustain civilian technical expertise in a range of situations and environments. Civilians will be selected for their expertise and drawn from within Commonwealth, state and local governments and from the non-government and private sector.¹⁷ AusAID informed the committee that the initiative is still in the policy formation phase but that it will rest within AusAID and will become part of AusAID's normal deployment architecture. Further:

16 *Committee Hansard*, 19 June 2009, p. 25. \$1.5 million of funding for the task force had been provided in the 2008–09 Budget, *Committee Hansard*, 19 June 2009, p. 43.

17 AusAID, 'Developing a Deployable Civilian Capacity for Australia', http://www.ausaid.gov.au/hottopics/topic.cfm?ID=4340_2958_671_9343_142 (accessed 3 September 2009).

What it will be designed to do is provide technical experts for post-conflict and post-disaster environments to start the stabilisation and reconstruction phase—if you like, the rebuilding phase—immediately after the conflict or crisis...this will be another arm to provide financial experts to go in and start talking with the host government about how they can quickly start restructuring their institutions. We could be providing judges, for instance, or we could be providing financial experts.¹⁸

8.14 It is intended that the DCC will complement the Centre of Excellence and will work towards integrating Australia's response to events such as RAMSI, the Australian-led peace enforcement mission in Timor-Leste, the Bali bombings or other humanitarian disasters such as the 2004 tsunami, the floods caused by cyclone Guba in PNG in 2007 and the tsunami that affected Samoa in 2009. Deployed civilians will work alongside ADF and AFP, the UN or civilians experts from other countries.¹⁹

8.15 At the East Asian Summit, held in Thailand in October 2009, Prime Minister Kevin Rudd further outlined the initiative, suggesting it would include a new registry of civilian experts including people with medical, engineering and constructions experience. The registry would include 500 people, and \$52 million has been made available to support the initiative. It is expected to be fully operational by 2011.²⁰

8.16 Examples of principal areas of technical expertise required for the Australian Civilian Corps include: security, justice and reconciliation, machinery of government, essential services, economic stability, community and social capacity building and operational management. Specialists will remain in their regular employment until accepting a deployment; when deployed, specialists will be engaged as Commonwealth employees.²¹

Committee view

8.17 The recent natural disasters in the region act as a reminder that it is essential that Pacific states do as much as they can to prevent or reduce the effects of such disasters. In Volume I, the committee noted that the natural environment can be made more robust, for example, by preserving mangroves as a way of protecting against coastal erosion and through protecting forests and coastal ecosystems. This is also true of the physical environment where it may be possible to build resilience in housing and critical infrastructure. As far as is possible, assistance should focus on

18 *Committee Hansard*, 19 June 2009, pp. 39–40.

19 AusAID, 'New Australian Civilian Corps to assist in disaster and conflict zones', http://www.ausaid.gov.au/hottopics/topic.cfm?ID=7115_4988_8043_4374_974 (accessed 27 October 2009).

20 AusAID, 'New Australian Civilian Corps to assist in disaster and conflict zones', http://www.ausaid.gov.au/hottopics/topic.cfm?ID=7115_4988_8043_4374_974 (accessed 27 October 2009).

21 AusAID, 'What is the Australian Civilian Corps?' <http://www.ausaid.gov.au/acc/> (accessed 27 October 2009).

preventative as well as reactive strategies. Improving public awareness about the behaviour of tsunamis and earth movements is also important in reducing the loss of life.

8.18 The committee welcomes the development of initiatives to assist Australia respond to crises in the region such as the Asia Pacific Civil–Military Centre for Excellence and the Deployable Civilian Capacity. Yet, in continuing with the themes of interaction and coordination raised throughout this report, the committee would like to see a close relationship develop between these initiatives. The committee considers it imperative that the Centre of Excellence and the DCC represent an integrated and coordinated national approach and a coherent whole-of-government and civilian response, to conflict and disaster management.

8.19 In addition to these initiatives, the committee has also considered the AFP and their training facility at Majura and bilateral capacity building projects that are undertaken by the AFP, through the Policing Partnerships for Development, and by the ADF through the Defence Cooperation Program. Again, the committee would like to see more interaction between these initiatives and a clearer and more integrated whole-of-government vision. The committee has previously made a series of recommendations aimed at improving AFP-Defence pre-deployment training and interoperability in its report into Australia's involvement in peacekeeping operations.²²

8.20 Because the DCC is still being developed by an inter-agency task force, the committee received limited information about how it would operate into the future. While the committee supports the initiative, it is also mindful of the many difficulties providing assistance in conflict, post-conflict and emergency situations, such as the limited capacity of Pacific island countries to organise and manage donor assistance. The committee's findings from its peacekeeping inquiry and those contained in Volume I of this current inquiry suggest strongly that the DCC must be an integral part of the range of agencies engaged in providing assistance to the region. Further, that it should be closely associated with the work of key institutions, such as the Centre of Excellence, in building regional capacity to manage crises or emergencies including promoting better cooperation and coordination between donors (see Recommendation 22 in Volume I).

Recommendation 7

8.21 The committee recommends that the Australian Government, through the Asia Pacific Civil–Military Centre of Excellence and the Deployable Civilian Capacity (DCC) give priority to assisting Pacific island states develop their emergency response capacity. Experts from the Centre of Excellence, and attached to the DCC, could raise awareness of tsunami and cyclone behaviour, assist develop emergency response plans and work with Pacific Islanders to develop more resilient critical infrastructure.

22 See Senate Standing Committee on Foreign Affairs, Defence and Trade, *Australia's involvement in peacekeeping operations*, August 2008, Recommendation 10, p 157.

Recommendation 8

8.22 The committee recommends that as the Asia Pacific Civil–Military Centre for Excellence and the Deployable Civilian Capacity (DCC) develop, the Australian Government take steps to ensure that they operate as an integrated and coordinated whole-of-government and civilian response to conflict and disaster management.

Potential impacts of climate change

8.23 A number of witnesses also highlighted concerns about the damaging effects of changes in climate in the Pacific region. The attachment to AusAID's submission, *Pacific Economic Survey 2008*, stated that climate change is 'the biggest long-term threat' facing the region:

The most recent assessment by the International Panel on Climate Change (IPCC, 2007) highlighted the special vulnerability of small island states to climate change, including changing rainfall patterns and temperature increases, the potential for an increase in extreme weather events, and, in the longer term, rising sea levels.²³

8.24 This was reiterated at the Fortieth Pacific Islands Forum Meeting in Cairns, August 2009, where leaders identified climate change as 'the great challenge of our time' and adopted the Pacific Leaders Call for Action on Climate Change.²⁴

8.25 While the region may emit very low levels of CO₂, Pacific island states are extremely vulnerable to the effects of climate change.²⁵ In fact, nations of the Pacific islands are among the nations most vulnerable. Pacific island states, especially the low

23 *Pacific Economic Survey 2008: connecting the region*, p. 4.
http://www.ausaid.gov.au/publications/pdf/pacific_economic_survey08.pdf (accessed 16 October 2009).

24 Fortieth Pacific Islands Forum Meeting, Forum Communiqué, paragraph 4,
<http://www.forumsec.org.fj/pages.cfm/newsroom/press-statements/2009/final-communiqué-of-40th-pacific-islands-forum-cairns.html> (accessed 29 September 2009).

25 The Department of Climate Change noted that Pacific island states contribute 0.04 per cent of the total global emissions. *Submission 71*, p. 4. According to 2005 figures listing total global greenhouse gas emissions, Pacific island nations were ranked as extremely low emitters of CO₂. Of the 186 nations listed, Pacific island states were ranked accordingly: *Papua New Guinea* 126 (with 0.01% of total world emissions); *Fiji* 142 (with 0.00% of world total emissions); *Solomon islands* 173 (with 0.00% of world total emissions); *Samoa* 174 (with 0.00% of world total emissions); *Nauru* 175 (with 0.00% of world total emissions); *Tonga* 178 (with 0.00% of world total emissions); *Palau* 179 (with 0.00% of world total emissions); *Vanuatu* 182 (with 0.00% of world total emissions); *Cook islands* 184 (with 0.00% of world total emissions); *Kiribati* 185 (with 0.00% of world total emissions); *Niue* 186 (with 0.00% of world total emissions). Data from other Pacific island states was unavailable. Ranked by tonnes of CO₂ emitted per person, states were rated as follows: Papua New Guinea 147, Fiji 114, Solomon Islands 157, Samoa 144, Nauru 35, Tonga 135, Palau 69, Vanuatu 155, Cook Islands 95, Kiribati 163, Niue 121. World Resources Institute, Climate Analysis Indicators Tool (CAIT) Version 6.0, 2009.

lying atolls, are vulnerable to the effects of climate change, including rising sea levels and more extreme weather events.²⁶ The Prime Minister of Samoa, the Honourable Tuila'epa Lupesoliai Sailele Malielegaoi recently stated:

Climate change is not a future phenomenon. It is real and already occurring in Pacific countries and low-lying islands elsewhere. It is no longer a question of when, but rather the severity of the magnitude of the impacts and the full cost to society...Sadly, the human and financial costs will be borne disproportionately by small island developing states.²⁷

8.26 The direct impact of climate change for Pacific island states include: temperature rise, rainfall decline, changes in the ocean temperature, coral bleaching and acidification, loss of territory from sea-level rise, salt water intrusion and reduced water supply. The climate sensitive areas that will be affected include: agriculture and subsistence living, infrastructure, transport and health as well as ecosystems that are critical to both fishing and tourism. New pests and invasive species may also be introduced and will affect food security.²⁸ (CSIRO also suggested that Australian territories such as Saibai Island in the Torres Strait are at 'extreme risk of inundation, complete loss of traditional cultural heritage, of territory and of island-based livelihoods'.²⁹) Rising temperatures will also increase vector-borne diseases such as malaria and dengue fever, diseases which would have significant ramifications for Pacific island health sectors.

8.27 The smallness of Pacific island states increases their exposure to external hazards and undermines their capacity to deal with them. Poverty and disadvantage also increase vulnerability. The poor are more likely to live in areas that are vulnerable to natural disasters and often lack the capacity to cope. The Department of Climate Change (DCC) submitted:

Pacific Island Countries are comprised of low-lying coral atolls and reef and volcanic islands. The limited size, physical infrastructure, low adaptive capacity and isolation of these countries increase their susceptibility to natural disasters and particularly increase their vulnerability to the impacts of climate change. The projected impacts of climate change have the potential to exacerbate existing challenges in Pacific Island Countries particularly the pursuit of sustainable development due to the environmental, social and economic implications of these impacts.³⁰

26 Prime Minister Kevin Rudd, 'Transcript of address at the close of the Pacific Islands Forum', Cairns, 7 August 2009 <http://www.pm.gov.au/node/6115> (accessed 19 October 2009).

27 The Honourable Tuila'epa Lupesoliai Sailele Malielegaoi, Prime Minister of the Independent State of Samoa, Sixty-Fourth Session of the United Nations General Assembly, 26 September 2009 (accessed 7 October 2009).

28 For example, since 1994 Samoa's Taro crop has been decimated by a fungal blight which has decimated plants. Taro was Samoa's largest export, generating more than half of all export revenue in 1993 but since 1994 taro exports have accounted for less than 1% of export revenue.

29 *Submission 50*, p. 8.

30 *Submission 71*, p. 2.

8.28 In a recent submission to the Secretary General of the United Nations, Kiribati made clear the security implications of climate change. Claiming that water security was at the heart of all of Kiribati's challenges, the submission identified the way the nation's water security has been affected by climate change. It mentioned: drought; rising sea levels and salt water intrusion; the affect of coastal erosion on existing water catchments; higher air temperatures leading to increased evaporation; coastal flooding and the effects of sea water flowing into inland natural ponds and leaving salt deposits in the soil. Water shortages have also been exacerbated by infrastructure problems. In most of the southern islands, for example, the solar pump water systems are inoperable due to problems with servicing and maintenance.³¹

8.29 The Kiribati submission outlines the way water scarcity affects social stability and may ultimately lead to conflict. In one instance, neighbouring villages on the islands of Onotoa and Tabiteua have marked their borders and prevented outsiders from drawing water from their community wells. In another, the government has decided against installing reverse osmosis devices in meeting halls and churches on the island of Aranuka for fear of creating local disputes.³² Scarcity of fresh water has also caused disputes between land owners. On the island of Tabiteuea, there have been suggestions that if landowners, who live near local water supply, fail to assist in a project to build a seawall, they will have their lands taken away from them. The submission also draws a connection between drought, rising sea levels, salt water inundation and the affects on food security.³³

International responses to climate change

8.30 While some security challenges can largely be addressed by unilateral state action, others, like climate change, require broader regional or multilateral action. In 1992, most countries of the world joined the international treaty known as the UN Framework Convention on Climate Change 1992 (UNFCCC), a precursor to the Kyoto Protocol.³⁴ During 2007, the UNFCCC convened a series of workshops on adaptation on small island states. The priority projects identified by the UNFCCC

31 UN Department of Economic and Social Affairs, Climate change and its possible security implications, 'Security implications of climate change in Kiribati', August 2009, http://www.un.org/esa/dsd/resources/res_pdfs/ga-64/cc-inputs/Kribati_CCIS.pdf, p. 3 (accessed 7 October 2009).

32 UN Department of Economic and Social Affairs, Climate change and its possible security implications, 'Security implications of climate change in Kiribati', August 2009, http://www.un.org/esa/dsd/resources/res_pdfs/ga-64/cc-inputs/Kribati_CCIS.pdf, p. 4 (accessed 7 October 2009).

33 UN Department of Economic and Social Affairs, Climate change and its possible security implications, 'Security implications of climate change in Kiribati', August 2009, http://www.un.org/esa/dsd/resources/res_pdfs/ga-64/cc-inputs/Kribati_CCIS.pdf, p. 6 (accessed 7 October 2009).

34 The UNFCCC did not contain any targets for reducing GHG emissions. By contrast, the major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialised countries and the European community.

adaptation process were: water management; increasing crop diversity; the introduction of more tolerant crops; coast zone development; reforestation; planting mangroves, vegetation buffers and establishing flood shelters; integrating climate change programs into development assistance; and increasing Pacific representation at official and multilateral organisations.

8.31 The UN has also established a National Adaptation Programme of Action (NAPA) to assist underdeveloped countries identify the urgent and immediate threats from climate change. NAPA agreements are specifically designed to develop a plan of action for those nations that have the least capacity to deal with the impact of climate change.³⁵ States receive funding from the Global Environment Facility (GEF) to develop their adaptation programme which assists states develop their resilience and capacity to adapt to climate variability and extremes. Five NAPAs have been completed for Pacific island states: Kiribati, Samoa, Tuvalu, Solomon Islands and Vanuatu.

Niue Declaration on Climate Change

8.32 During the 39th Pacific Leaders' Forum in Niue in August 2008, Pacific island leaders reaffirmed their commitment to addressing climate change. Their declaration identified a framework for Action on Climate Change which placed emphasis on the need to develop Pacific-tailored approaches. These included:

- Committing the members of the Pacific Islands Forum to continue to advocate and support the recognition, in all international fora, of the urgent social, economic and security threats caused by the adverse impacts of climate change and sea level rise to our territorial integrity and continued existence as viable dynamic communities; and of the potential for climate change to impact on intranational and international security;
- Strengthening meteorological services, consolidating and distributing information on climate change, strengthening adaptation and mitigation measures, and increasing Pacific island countries' capacity to manage their engagement in the United Nations Framework Convention on Climate Change;
- Encouraging the Pacific's development partners to increase their technical and financial support for climate change action on adaptation, mitigation and, if necessary, relocation; and
- Encouraging development partners to increase investment in and support for Pacific Island Countries' efforts to move towards alternative and renewable

35 National Adaptation Programme of Action, <http://www.napa-pana.org/> (accessed 16 February 2009).

energy sources, which reduce the emissions of our region and improve energy efficiency, as well as help to address the growing unaffordability of fuel.³⁶

8.33 While the agreement included a commitment to reduce emissions through developing renewable energy supply, the agreement promotes strategies for adaptation over strategies of mitigation. Because Pacific island states emit so little greenhouse gas and because the effects of climate change are already being felt, adaptation becomes the priority response.

8.34 Adaptation costs will be high in small Pacific island states and large amounts of capital will be required to boost their adaptive capacities. The Lowy Institute for International Policy submitted:

Increased investment by Pacific Island governments in adaptation measures funded from national budgets, the Global Environment Facility, AusAID and other donor initiatives will help mitigate negative effects of climate change. Adaptation measures include improved land management techniques, greater use of water tanks and solar energy, coastal conservation, mangrove protection and innovative recycling techniques.³⁷

8.35 The 13th Conference of Parties to the UNFCCC, which was held in Bali in December 2007, established an Adaptation Fund for developing countries to enable them to undertake various projects to cope with the impacts of climate change.

Persons displaced by climate change

8.36 Numerous submitters to the inquiry expressed concern about 'climate change refugees' and the possibility that individuals, communities or even entire states may need to be relocated as a result of climate change. The AFP suggested:

The controversial topic of global warming (both ongoing drought and rising sea levels) is of interest to law enforcement organisations as an issue now (in Tuvalu and to some extent, Kiribati) and for the region in the future in terms of the pressure that might be applied should a need to relocate individuals or whole communities eventuate.³⁸

8.37 CSIRO identified the impact of climate change on regional security with the potential for mass movement of environmental refugees around the region which, they point out, if unplanned 'will lead to great tensions and potential border security and even open conflict concerns'.³⁹

8.38 In a recent address to the UN, the President of the Republic of Kiribati stated:

36 Pacific Islands Forum Secretariat, <http://www.forumsec.org.fj/pages.cfm/newsroom/press-statements/2008/forum-leaders-endorse-niue-declaration-on-climate-change.html?printerfriendly=true> (accessed 16 February 2009).

37 *Submission 14*, pp. 4–5.

38 *Submission 62*, p. 7. Also see ACFID, *Submission 49*, p. 2.

39 *Submission 50*, p. 8.

I have been advocating a combination of pragmatic adaptation strategies for my people. It is our overwhelming desire to maintain our homeland and our sovereignty. However, with the inevitable decline in the ability of our islands to support life, let alone increasing populations, due to rising sea levels, we must also provide opportunities for those of our people who wish to migrate to do so on merit and with dignity. Our approaches will be time relevant, responding to the different levels of threat and impacts of climate change on our islands and our people at a given point in time.⁴⁰

8.39 Associate Professor Jane McAdam, from the University of New South Wales, offered the following assessment of the seriousness of the threat facing nations like Kiribati and Tuvalu:

I think it is a very, very serious threat based on rising sea levels and the scientific projections. Of course, the difficulty is knowing quite when the impacts of those rising sea levels and the knock-on effects that they have are going to reach a tipping point where people are forced to move. We have already got a situation of people moving from outer-lying islands towards the capitals in both of those countries, so there is already some form of internal movement. But there is not much scope for people to move to higher ground. In fact, there is no scope for people to relocate to higher areas. So ultimately—and whether that is in 50 years or 200 years, we do not quite know—it will become necessary for people to relocate altogether.⁴¹

8.40 Beyond this, it is not so much a matter of when land becomes submerged but when land becomes unproductive, when people are no longer able to grow crops or when communities are at risk of increased cases of malaria.

8.41 There is currently no international legal structure that has been devised to protect Pacific islanders displaced by climate change. Associate Professor McAdam suggested that there remained a question of how this would be dealt with in terms of law and policy. Currently, these people do not meet the definition of a refugee under the 1951 refugee convention.⁴²

8.42 Claiming that the only viable future for the people of low-lying atoll states like Kiribati and Tuvalu lies in migration, the Lowy Institute for International Policy recommended that Australia develop 'a staged migration strategy for small island states threatened by climate change or long-term viability':

In the first instance, increased numbers of scholarships should be made available to citizens of Kiribati and Tuvalu to study in Australia, with a provision that they be permitted to seek employment in Australia on

40 Statement by His Excellency Anote Tong, President of the Republic of Kiribati, General Debate of the 64th United Nations General Assembly, 25 September 2009, http://www.un.org/ga/64/generaldebate/pdf/KI_en.pdf (accessed 7 October 2009).

41 *Committee Hansard*, 24 March 2009, p. 38.

42 *Committee Hansard*, 24 March 2009, p. 39.

successful completion of their studies. On obtaining full-time employment, they should be eligible for resident visas and fast tracked family reunion visas.

This approach would have the advantage of providing incentives for young people to study in Australia, encourage an ordered and voluntary rather than forced migration process from Kiribati and Tuvalu, and ultimately lessen pressures on aid and on the welfare system in Australia. Both countries should also be encouraged to use their trust funds to support the capacity of their citizens to integrate into Australian society through education, training and welfare. Offering access to a staged migration process now gives Kiribati and Tuvalu opportunities to plan future development more effectively and seek further migration options in other countries based on the Australian model.⁴³

8.43 This would suggest that it is important that countries of the region develop policy responses and mitigation strategies for persons displaced by climate change.

Australian responses to climate change

8.44 The 2008 Port Moresby Declaration, which announced Australia's commitment to 'a new era of cooperation with the island nations of the Pacific', offers the following assessment of the challenge of climate change:

Australia and the Pacific island nations face a common challenge in climate change. Many of our Pacific neighbours, especially low lying atolls, are particularly vulnerable to the effects of climate change, including devastation from more frequent and severe extreme weather events.⁴⁴

8.45 The Australian Government recognises that Pacific island states are particularly susceptible to the effects of climate change. The government also acknowledges that the institutional capacity of Pacific island states to mitigate or adapt to the effects of climate change and to respond to natural disasters is generally poor. The Department of Climate Change is responsible for developing Australia's Pacific climate change policies and strategies in consultation with AusAID and DFAT. The DCC advocates a strategy of cost-effective mitigation of climate change and adaptation to its impacts.⁴⁵

8.46 Much of Australia's climate change support for Pacific island states focuses on adaptation. At the 39th Pacific Leaders' Forum in Niue (2008), the Australian Government earmarked \$150 million over three years to help develop 'adaptive strategies' in the Pacific. Australia is supporting some mitigation actions through its \$1.5 million Renewable Energy and Energy Efficiency Partnership Project.

43 *Submission 14*, pp. 4–5.

44 Port Moresby Declaration, <http://www.ausaid.gov.au/country/PortMorDec.cfm> (accessed 5 November 2009).

45 *Submission 71*.

Previously, at the Pacific Islands Forum in Madang, 2005, Australia contributed \$6 million for monitoring sea levels across the south Pacific.

Climate Change and the PPDs

8.47 Improving the capacity of Pacific island states to mitigate and adapt to the effects of climate change has been incorporated into the four bilateral partnership agreements: PNG, Solomon Islands, Kiribati and Samoa. Addressing the causes and mitigating the impacts of climate change is nominated as a 'future priority outcome' in the PPD with PNG. The PPD with Solomon Islands identifies addressing climate change adaptation and disaster risk mitigation issues as a 'future priority outcome' which may be included in the partnership.

8.48 The PPD with Kiribati, one of the nations most vulnerable to the effects of climate change, includes the commitment from the Government of Kiribati to the Government of Australia to develop climate change strategies on mitigation, adaptation and relocation (through upskilling and securing overseas employment opportunities). Kiribati's efforts to improve its readiness to deal with the impact of climate change and sea level rise is nominated as a further priority area which may receive Australian support. The PPD with Kiribati also refers to Australia's Pacific Climate Changes Strategy for Kiribati but does not elaborate.

8.49 More substantially, the PPD with Samoa identifies climate change as a 'priority outcome', including a joint commitment to:

- Monitor the impacts of climate change on health, agriculture and food security;
- Develop adaptation measures for vulnerable communities, including coastal infrastructure and development of early warning systems;
- Develop viable options for clean and renewable energy.

8.50 A number of the priority outcomes which may be included in the partnerships in the future could involve: addressing the capacity to mitigate and adapt to the effects of climate change; and strengthening the capacity of states to respond to natural disasters and climate change.

Committee view

8.51 Throughout the second part of this chapter, the committee noted the potential for the effects of climate change to destabilise Pacific communities and identified the security implications of resource scarcity and access to clean water. These are serious concerns and Australia will need to continue to work with Pacific island states to assist them adapt to environmental change.

Recommendation 9

8.52 The committee reiterates the recommendation made in Volume I (recommendation 3), that the Australian Government ensure that environmental matters including climate change be integrated more effectively throughout its aid program to the Pacific.