Financing Adaptation in Pacific Island Countries: Prospects for the Post-2012 Climate Change Regime

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Abstract

This article explores the issues surrounding the development of the post-2012 international climate change regime with respect to financing for adaptation in Pacific Island countries. It is argued that adaptation to the adverse impacts of climate change represents a realistic, rational and necessary policy option for Pacific islands, and that international law has an important, and thus far under-realised, role to play. The current negotiations to design a new international legal agreement on climate change will be crucial to securing long-term and reliable funding for adaptation measures in particularly vulnerable countries, including Pacific island countries.

Introduction

Climate change casts a shadow over the long-term social, economic and environmental wellbeing of Pacific island countries ('PICs').[1] While mitigation, through deep cuts in global greenhouse gas ('GHG') emissions, offers the only long-term solution, PICs must also begin to adapt to the adverse impacts of climate change. Faced with the reality of rising sea levels, more extreme weather conditions and changing rainfall patterns, PICs have little choice but to implement a range of practical adaptation measures. Yet with limited financial resources of their own, PICs are critically dependent on international support.

The international climate change regime – as codified in the *United Nations Framework Convention on Climate Change* ('*UNFCCC*')[2] and its *Kyoto Protocol*[3] – obligates developed countries to provide funds to assist developing countries in adapting to the adverse impacts of climate change. However, to date only limited support has been provided and it has become clear that the multilateral funding mechanisms established under the *UNFCCC* and *Kyoto Protocol* are inadequate.

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1 This includes 14 independent countries: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

2 *United Nations Framework Convention on Climate Change*, opened for signature on 9 May 1992, 1771 UNTS 107 (entered into force 24 March 1994).

3 *Kyoto Protocol to the United Nations Framework Convention on Climate Change,* opened for signature 11 December 2007, 37 ILM 22 (entered into force 16 February 2005).

With the impending expiry of the *Kyoto Protocol's* first commitment period in 2012, the international community has launched negotiations to formulate a new accord on climate change. The most important outcome of these negotiations will be a new and more ambitious set of commitments for reducing GHG emissions. However, these negotiations also present an important opportunity to strengthen adaptation provisions. To meet the needs of the world's most vulnerable countries, including those in the Pacific, this must include significant progress on adaptation financing.

The central thesis put forward in this article is divided into three key parts. First, it is argued that adaptation represents a realistic, rational and necessary policy option for PICs in response to climate change. Secondly, it is argued that international law has an important, and thus far under-realised, role to play in supporting adaptation in PICs. Finally, it is argued that current negotiations to design a new international legal agreement must include strengthened provisions to fund adaptation measures in particularly vulnerable countries, including PICs.

1. Climate Change and Adaption in Pacific Island Countries

The process of global climate change, including its causes and impacts, is well-documented.[4] Average temperatures across the Pacific Islands region have increased by 0.6-1.0°C since 1910, while sea levels have risen by approximately 1.6 mm/yr over the last 50 years.[5] These trends have been accompanied by changed rainfall patterns and the increased frequency of extreme events, including flooding, droughts and storm surges.[6] According to the Intergovernmental Panel on Climate Change ('*IPCC*'), further changes in the earth's climate are now inevitable.[7] Average temperatures in the Pacific Islands region are projected to increase by 0.99-3.11°C by the end of this century, with sea levels projected to rise by 0.19-0.58 meters in the same period.[8] Average annual rainfall is projected to vary by up to 10 per cent, while the IPCC also notes a 'strong possibility' of 'more persistent and devastating tropical cyclones' for the region.[9]

While the exact nature and extent of climate change impacts will vary within and between PICs, it is possible to identify some common challenges. Sectors where impacts

4 Intergovernmental Panel on Climate Change ('*IPCC*'), *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (2007); and IPCC, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (2007).

5 Nubuo Mimura, Leonard Nurse, Roger McLean, John Agard, Lino Briguglio, Penehuro Lefale, Rolf Payet &Graham Sem, 'Small Islands' in IPCC, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (2007) at 687–716.

6 John Hay, Nubuo Mimura, John Campbell, Solomone Fifita, Kanayathu Koshy, Roger F McLean, Taito Nakalevu, Patrick Nunn & Neil de Wet, *Climate Variability and Change and Sea-level Rise in the Pacific Islands Region: A Resource Book for Policy and Decision Makers, Educators and Other Stakeholders* (2002); John Hay, Richard Warrick, Chris Cheatham, Teresa Manarangi-Trott, Joseph Konno & Peter Hartley, *Climate Proofing: A Risk-based Approach to Adaptation* (2005); Wairarapa Young, *Climate Risk Profile for Samoa* (Unpublished Manuscript).

7 *IPCC*, above n4.

8 Mimura et al, above n5 at 694.

9 Id at 694.

are expected to be most severe include: (i) water resources; (ii) coastal systems and resources; (iii) agriculture, fisheries and food security; (iv) biodiversity; (v) human settlements and well-being; (vi) economic, financial and socio-cultural impacts; and (vii) infrastructure and transport.[10] Sea level rise is particularly alarming, and for low-lying countries such as Kiribati, Tuvalu and the Marshall Islands, it 'may, at some threshold, pose risks to their sovereignty or existence'.[11] Indeed, in some areas the impacts of sea level rise are already being felt, with reports of coastal communities shifting to more viable locations.[12]

A. Adaptation Needs in PICs

While PICs continue to push for stronger global mitigation efforts, adaptation to the adverse impacts of climate change has emerged as a clear priority for the region.[13] This is justified on several grounds. First, Pacific islands are already experiencing the impacts of climate change, which can no longer be viewed as long-term threats, but rather as immediate risks that need to be dealt with. Secondly, the latest science indicates that further changes are now inevitable, which means adaptation is essential. Thirdly, there are legitimate doubts about whether global mitigation efforts will be sufficient to avoid dangerous climate change. For particularly vulnerable countries such as PICs, adaptation is a practical necessity for dealing with current risks and a pragmatic policy option to plan for future impacts.

As outlined in the Pacific Islands Framework for Action on Climate Change, the objective of adaptation in PICs is for 'people, their livelihoods and the environment [to be] resilient to the risks and impacts of climate change'.[14] In a practical sense, this will be achieved through the implementation of adaptation measures aimed at reducing the vulnerability of highly exposed sectors and areas. Details of the various adaptation options for PICs are provided in national and regional reports, with a brief summary presented in Table 1.[15]

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10 Ibid. See also John Hay, *Vulnerability & Adaptation: Evaluation and Regional Synthesis of National Assessments of Vulnerability and Adaptation to Climate Change* (2000); Hay et al, above n6; and Eileen Shea, *Preparing for a Changing Climate: The Potential Consequences of Climate Variability and Change* (2001).

11 Neil Adger, Shardul Agrawala, Monirul Qader Mirza, Cecilia Conde, Karen O'Brien, Juan Pulhin, Roger Pulwarty, Barry Smit & Kiyoshi Takahashi, 'Assessment of Adaptation Practices, Options, Constraints and Capacity' in IPCC, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* at 17, 28.

12 John Vidal, 'Pacific Atlantis: First Climate Change Refugees', *The Guardian* (25 November 2005) <www.guardian.co.uk/environment/2005/nov/25/science.climatechange> accessed 25 January 2008.

13 *Forum Communique*, Thirty-eighth Pacific Islands Forum, Nuku'alofa, Tonga, (16-17 October 2007) <www.forumsec.org/pages.cfm/> accessed 20 December 2007; Pacific Islands Forum, *Pacific Islands Framework for Action on Climate Change* (2005) <www.sprep.org/publication/pub_detail.asp?id=438> accessed 25 January 2008.

14 Pacific Islands Forum, above n13.

15 *Non-Annex I National Communications*, UNFCCC Secretariat <http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php> accessed 25 January 2008; Hay et al, above n6; Shea, above n10.

Table 1: Examples of adaptation measures in PICs[16]

Vulnerable Sectors	Climate Change Risks	Adaptation Options
Agriculture and Food Security	- Reduced rainfall - Higher temperatures - Salt water inundation - Increased frequency of droughts	- Diversification of agricultural crops - Selection of drought/heat/salt tolerant species - Introduction of new technologies to cope with climate stresses
Water Resources	- Reduced rainfall - Saltwater intrusion into groundwater	- Increased water storage capacities - Water efficiency measures - Improved management of water catchments - Desalination facilities
Human Health and Well–being	- Cyclones - Flooding - Changing rainfall patterns	- Mosquito control measures - Disease outbreak response plans - Improved early warning systems - Disaster preparedness programmes
Coastal communities/ Infrastructure	- Coastal erosion - Storm surge - Cyclones	- Relocation of vulnerable communities/infrastructure - Protection/rehabilitation of natural defence systems (mangroves, coastal vegetation and coral reefs) - Artificial defence mechanisms (sea walls, wave breakers etc) - Design upgrades for new infrastructure - Management of non–climate stresses (sand mining, pollution, over–fishing etc)

As Hay et al point out, while practical measures targeting specific climate risks are required, adaptation must also occur within the broader development context.[17] If development helps to improve social and economic conditions, then ultimately this will help to enhance adaptive capacity. However, the failure to 'climate proof' development could exacerbate the risks of climate change, thus resulting in 'maladaptation'.[18] A key

16 Adapted from Hay, above n10.

17 Hay et al, above n6.

18 Nicholas Stern, *The Economics of Climate Change: The Stern Review* (2007) at 433.

challenge for PICs in the coming decades will be to ensure that adaptation objectives are integrated with national and sectoral development strategies. A failure to do so would not only undermine the effectiveness of adaptation strategies, but would also put at risk national development objectives.

B. The Cost of Adaptation

Despite the many uncertainties involved, several attempts have been made to estimate the global costs of adaptation in developing countries. The World Bank estimates that by 2050 annual adaptation costs in developing countries will reach US$10-40 billion.[19] Building on this estimate, and drawing from national and community level data, Oxfam International has raised the figure to at least US$50 billion a year.[20] Meanwhile, Watkins predicts that about US$86 billion will be needed each year by 2015.[21]

In indication of the cost of adaptation in the Pacific region is provided by the national adaptation programmes of action ('NAPAs') prepared by Samoa, Kiribati, Tuvalu and Vanuatu. The total cost of implementing urgent and immediate adaptation needs in these four countries is estimated to be approximately US$34.5 million.[22] Employing a similar approach to Oxfam International, the NAPA data can be scaled up to provide a figure for the whole region.[23] This is done using the estimated average costs per person, per dollar of GDP and per square kilometre of land in the four countries that have prepared NAPAs.[24] Using GDP as the scaling parameter, the total estimated cost of implementing urgent and immediate adaptation needs in all PICs is US$293.65 million. Based on population, the figure rises to US$304.79 million, and based on land area is even higher (US$530.26 million).[25] In other words, the estimated cost range of urgent and immediate adaptation measures in PICs is US$290-530 million.[26] These figures are expected to be much higher when longer-term adaptation needs are taken into consideration.

19 World Bank, *Clean Energy and Development: Towards an Investment Framework* (2006) <http://siteresources.worldbank.org/DEVCOMMINT/Documentation/20890696/DC2006-0002(E)-CleanEnergy.pdf> accessed 20 January 2008.

20 Oxfam International, *Adapting to Climate Change: What's Needed in Poor Countries and Who Should Pay?* (2007) <www.oxfam.org/en/policy/briefingpapers/bp104_climate_change_0705> accessed 10 January 2008.

21 Kevin Watkins, *Human Development Report 2007/08: Fighting Climate Change: Human Solidarity in a Divided World* (2007) <http://hdr.undp.org/en/> accessed 16 December 2007.

22 Governments of Samoa, Tuvalu, Vanuatu and Kiribati, *National Adaptation Programme of Action* (2005-2007) <http://unfccc.int/national_reports/napa/items/2719.php> accessed 10 January 2008.

23 Oxfam International, above n20.

24 The four LDCs were broken into two groupings: low-lying and elevated islands. The combined cost of implementing the NAPAs for the two low-lying nations (Kiribati and Tuvalu) is approximately US$20.67 million, which represents an average cost of about US$201 per person, US$0.3 per dollar of GDP and US$24,695 per square kilometre of land. For the two high islands (Vanuatu and Samoa) the combined cost of NAPA implementation is approximately US$13.82 million, which equates to roughly US$34 per person, US$0.02 per dollar of GDP and US$913 per square kilometre of land.

25 GDP, population and land area data was taken from Secretariat of the Pacific Community, *Pocket Statistical Summary* (2005) <www.spc.int/prism> accessed 2 January 2008.

26 These are the total estimated costs for all 14 PICs, including the data from the four completed NAPAs.

2. Adaption Provisions in the Climate Regime

The key focus of the international climate regime is mitigation: reducing GHG emissions to avoid dangerous climate change. However, the regime also includes specific provisions for developed countries to provide funding and support for adaptation in developing countries.

A. UNFCCC

The *UNFCCC* requires all Parties to '[f]ormulate, implement, publish and regularly update … measures to facilitate adequate adaptation to climate change'.[27] In line with the principle of differentiated responsibilities and capabilities, article 4(3) of the convention requires that developed countries cover 'the agreed full incremental costs' of implementing these measures in developing countries.[28] Significantly, however, the convention does not specify particular types of adaptation measures, nor does is it clarify what is meant by 'adequate adaptation'.

Article 4(4) of the *UNFCCC* commits developed countries to providing assistance to 'developing country parties that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation'.[29] However, the convention does not specify which countries are 'particularly vulnerable', nor the extent of the financial assistance that is to be provided. Thus, as Verheyen notes, while these financial obligations are 'mandatory' and provide 'developing countries with a legal basis to claim funds from developed States', the convention provides no further guidance on how this provision should be operationalised.[30]

Article 4(8) of the *UNFCCC* requires that all countries 'give full consideration to what actions are necessary under the convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change'. While Parties are only required to consider these issues, this provision does lay the foundation for more substantive commitments in the future. From the perspective of PICs, article 4(8) is also important because it makes specific reference to small island countries, countries with low-lying areas, countries prone to natural disasters, countries vulnerable to drought, and countries with fragile ecosystems.

Article 4(9) of the *UNFCCC* adds 'least developed countries' (LDCs) as an additional category of countries that have 'specific needs and special situations'.[31] While the Convention only requires Parties to 'take full account' of the interests of LDCs, it does emphasise 'funding and transfer of technology' as priority needs. Although somewhat

27 *UNFCCC,* art 4(1)(b).
28 *UNFCCC*, art 4(3).
29 *UNFCCC*, art 4(4).
30 Roda Verheyen, 'Adaptation to the Impacts of Anthropogenic Climate Change – The International Legal Framework' (2002) 11 *Review of European Community and International Environmental Law* 129 at 134, 136.
31 *UNFCCC*, art 4(9).

ambiguous, this article provides a foundation for adaptation funding in LDCs. There are currently five PICs on the UN LDC list.[32]

B. *Kyoto Protocol*

The main focus of the *Kyoto Protocol* is to set legally binding commitments for developed countries to reduce GHG emissions, but it also has a number of provisions relevant to adaptation funding. Most importantly, this includes the requirement that a share of proceeds from the Clean Development Mechanism ('CDM') be used to assist particularly vulnerable developing countries to 'meet the costs of adaptation'.[33] As discussed below, this led to the establishment of the Adaptation Fund, which is by far the most promising vehicle for financing adaptation in existence.

Additional provisions for adaptation are included in articles 3(14) and 10 of the Protocol, which require Parties to consider issues of funding, insurance and transfer of technology 'to minimize the adverse effects of climate change', and formulate and implement programmes 'to facilitate adequate adaptation to climate change'.[34] As well as reaffirming existing commitments made under the UNFCCC, these provisions are important because they provide an additional avenue to pursue stronger commitments for adaptation in the post-2012 climate change agreement.

To summarise, the climate regime outlines a broad, yet poorly defined, framework of commitments with respect to funding for adaptation. Both the Convention and the Protocol include provisions for developed countries to fund adaptation measures in developing countries. However, the scope, extent and practical implications of these commitments are not clear-cut. Indeed, the 'rather ambiguous language' and 'loaded' terminology allows for a range of interpretations.[35] This reflects the general fragility of the consensus underpinning the UNFCCC at the time of its formation, as well as the specific uncertainties relating to the impacts of climate change and appropriate adaptation options. Nevertheless, as discussed in the proceeding section, these legal provisions have given rise to a multilateral framework for financing adaptation in developing countries.

3. Framework for Adaptation Funding

Building on the provisions provided by the UNFCCC and Protocol, ongoing negotiations have produced a framework for multilateral financial assistance for adaptation in developing countries. This section provides a brief snapshot of this framework.

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32 Five PICs are classified as least developed countries: Kiribati, Samoa, Solomon Islands, Tuvalu and Vanuatu. See <www.un.org/special-rep/ohrlls/ldc/list.htm>.

33 *Kyoto Protocol*, art 12(8). Article 12 of the *Kyoto Protocol* establishes the Clean Development Mechanism (CDM), which allows Annex I parties to claim credit for emission reduction activities they undertake in non-Annex I countries.

34 *Kyoto Protocol*, arts 3(14) and 10.

35 Verheyen, above n30; M J Mace, 'Funding for Adaptation to Climate Change: UNFCCC and GEF Developments since COP-7' (2005) 14 *Review of European Community and International Environmental Law* 225 at 226.

A. *Global Environment Facility Trust Fund*

Article 11 of the Convention establishes a financial mechanism to facilitate multilateral financial support for developing countries, including for adaptation. The Global Environment Facility ('GEF') has been designated as the operating entity of the financial mechanism.[36] In 1995 – a year after the UNFCCC came into force – Parties agreed to a three-stage approach for funding adaptation activities through the GEF Trust Fund. Stage I would focus on planning, studies of possible climate change impacts, identification of particularly vulnerable countries, development of policy options, and the provision of capacity building. Stage II would constitute further capacity building to prepare for adaptation. Finally, it was envisioned that Stage III would include measures to 'facilitate adequate adaptation'.[37]

The GEF has primarily supported Stage I and II measures as part of its broader funding programme for the preparation of developing countries' national communications, as mandated under Article 12 of the UNFCCC.[38] It was not until its seventh session in Marrakesh that the Conference of the Parties to the UNFCCC ('COP') signalled a shift in focus towards practical adaptation measures (Stage III).[39] In response, the GEF established the temporary Strategic Priority on Adaptation (SPA) to 'address local adaptation needs and generate global environmental benefits in the GEF focal areas'.[40] By the time the SPA finishes in June 2008, it is expected to have dispersed US$50 million globally.[41]

B. *Least Developed Country Fund*

As its name implies, the Least Developed Country Fund ('LDCF') was established to support activities in LDCs, drawing on financial contributions from developed countries in line with their obligations under Article 4(9) of the UNFCCC. The GEF, as the operating entity for the LDCF, is tasked with ensuring that LDCs have 'expedited access' to financial support, including for the preparation and implementation of national adaptation programmes of action covering urgent and immediate adaptation priorities.[42]

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36 *Memorandum of Understanding between the Conference of the Parties and the Council of the Global Environment Facility*, Decision 12/CP.2, UNFCCC Conference of the Parties, 2nd Sess, UN Doc FCCC/CP/1996/15/Add.1 (1996).

37 UNFCCC Conference of the Parties, *Initial Guidance on Policies, Programme Priorities and Eligibility Criteria to the Operating Entity or Entities of the Financial Mechanism*, Decision 11/CP.1, 1st Sess, UN Doc FCCC/CP/1995/7/Add.1 (1995).

38 Ibid; UNFCCC Conference of the Parties, *Additional Guidance to the Operating Entity of the Financial Mechanism*, Decision 2/CP.4, 4th Sess, UN Doc FCCC/CP/1998/16/Add.1 (1998).

39 UNFCCC Conference of the Parties, *Implementation of Article 4, paragraphs 8 and 9, of the Convention (Decision 3/CP.3 and Article 2, paragraph 3, and Article 3, paragraph 14, of the Kyoto Protocol)*, Decision 5/CP.7, 7th Sess, UN Doc FCCC/CP/2001/13/Add.1 (2001).

40 Global Environment Facility, *Operational Guidelines for the Strategic Priority 'Piloting an Operational Approach to Adaptation' (SPA)*, GEF Council, 27th Sess, GEF Doc GEF/C.27/Inf.10 (2005).

41 UNFCCC Conference of the Parties, *Report of the Global Environment Facility to the Conference of the Parties*, 13th Sess, UN Doc, FCCC/CP/2007/3 (2007).

42 UNFCCC Conference of the Parties, *Guidance to an Entity Entrusted with the Operation of the Financial Mechanism of the Convention, for the Operation of the Least Developed Countries Fund*, Decision 27/CP.7, 7th Sess, UN Doc, FCCC/CP/2001/13/Add.4 (2001).

As at May 2008 a total of 33 LDCs had completed their NAPAs with funding from the LDCF.[43] Attention has now shifted to the implementation of NAPAs and the GEF Council has adopted a programming paper outlining how this will be funded under the LDCF. Importantly, this includes provisions designed to 'expedite and simplify project approval' and to allow for full-cost financing of projects up to a certain level.[44] Large projects still require co-financing, but under more generous ratios than the GEF Trust Fund.[45] Another significant feature of the LDCF is that funding is not constrained by any requirements to achieve global environmental benefits, which is a key condition for GEF Trust Fund projects. This better reflects the localised nature of climate change adaptation. As at March 2008 the LDCF contained US$169 million.[46]

C. *Special Climate Change Fund*

The Special Climate Change Fund ('SCCF') was established by the COP in 2001 to fund projects in four areas: adaptation; transfer of technologies; energy, transport, industry and waste management; and activities to assist developing countries in diversifying their economies.[47] As with the LDCF, the GEF has been appointed as the operating entity of the SCCF. Initially, the COP identified adaptation as the 'top priority' for SCCF support, with technology transfer noted as a second area for support.[48] It was not until 2006 that countries agreed to proceed with the remaining SCCF programs, including the program on economic diversification.[49] According to Mace, this delay partly reflected the 'serious donor discomfort' with the idea of funding activities to assist fossil fuel dependent countries with economic diversification.[50] In recognition of these concerns, the GEF allows donors to quarantine their contributions to the SCCF for use in 'specific programs'.[51] Donors have responded by pledging more than US$75 million to the program on adaptation and close to US$14 million to the program on technology transfer.[52] As at March 2008 no funds had been pledged to the other SCCF programs,

43 UNFCCC Secretariat, *National Adaptation Programmes of Action,* <http://unfccc.int/adaptation/napas/items/2679.php> accessed 28 May 2008.

44 UNFCCC Conference of the Parties, *Further Guidance for the Operation of the Least Developed Country Fund*, Decision 6/CP.9, 9th Sess, UN Doc FCCC/CP/2003/6/Add.1; UNFCCC Conference of the Parties, *Further Guidance for the Operation of the Least Developed Country Fund*, Decision 3/CP.11, 11th Sess, UN Doc FCCC/CP/2005/5/Add.1 (2005); Global Environment Facility, *Programming Paper for Funding the Implementation of NAPAs Under the LDC Trust Fund*, GEF Council Meeting, 28th Sess, GEF Document GEF/C.28/18 (2006).

45 Leonard Nurse & Rawleston Moore, 'Adaptation to Global Climate Change: An Urgent Requirement for Small Island Developing States' (2005) 14 *Review of European Community and International Environmental Law* 100.

46 Global Environment Facility, *Financing Adaptation Action* (2007).

47 UNFCCC Conference of the Parties, above n39.

48 UNFCCC Conference of the Parties, *Further Guidance to an Entity Entrusted with the Operation of the Financial Mechanism of the Convention, for the Operation of the Special Climate Change Fund*, Decision 5/CP.9, 9th Sess, UN Doc FCCC/CP/2003/6/Add.1 (2003).

49 UFCCC Conference of the Parties, *Further Guidance to an Entity Entrusted with the Operation of the Financial Mechanism of the Convention, for the Operation of the Special Climate Change Fund*, Decision 1/CP.12, Sess 12, UN Doc FCCC/CP/2006/5/Add.1 (2006).

50 Mace, above n35 at 236.

51 Global Environment Facility, *Programming to Implement the Guidance for the Special Climate Change Fund Adopted by the Conference of the Parties to the United Nations Framework Convention on Climate Change at its Ninth Session*, GEF Council, 24th Session, GEF Doc GEF/C.24/12 (2004).

which means for practical purposes the fund remains dedicated to adaptation and technology transfer.

An important feature of the SCCF's adaptation program is that it does not require that projects achieve global environmental benefits. Instead, SCCF resources are to fund the 'additional costs of achieving sustainable development imposed on vulnerable countries by the impacts of climate change'.[53] Another similarity with the LDCF is the inclusion of a sliding scale to 'expedite the processing of financing under the SCCF'.[54] However, unlike the LDCF, there is no provision for full-cost financing and no procedures for accelerated approval of projects.

D. Adaptation Fund

The Adaptation Fund was originally established along with the LDCF and SCCF in 2001. However, after protracted negotiations, it was not until 2007 that countries agreed to operationalise the Adaptation Fund.[55] Adopting a model different from the other funds, a separate Adaptation Fund Board has been established as the operating entity, with the GEF providing secretariat services on an interim basis.[56] This decision represents a compromise between countries that support the GEF becoming the fully-fledged operating entity of the fund and those concerned about the GEF's credentials with regards to supporting adaptation in developing countries.[57] Significantly, from the perspective of PICs, the composition of the Adaptation Fund Board includes one representative from a small island developing state and one representative from an LDC.

A key task of the Adaptation Fund Board will be to design strategic priorities, policies and guidelines for the Adaptation Fund, which must be approved by the Meeting of the Parties to the *Kyoto Protocol*.[58] Such details are inherently controversial and extremely important, considering that money flowing into the Adaptation Fund could reach US$80-300 million per year for the period 2008-2012.[59]

4. Adaptation Funding in the Pacific

Since the UNFCCC entered into force in 1994, the GEF has distributed approximately US$5.18 million to PICs for adaptation activities (Table 2). From the GEF Trust Fund this includes US$1.96 million for national vulnerability and adaptation assessments and US$0.22 million for the Pacific component of a global assessment project.[60] A total of

52 Global Environment Facility, *Status Report on the Climate Change Funds as of March 4, 2008*, LDCF/SCCF Council Meeting, GEF Doc GEF/LDCF.SCCF.4/Inf.2 (2008).

53 Global Environment Facility, *Programming to Implement the Guidance for the Special Climate Change Fund Adopted by the Conference of the Parties to the United Nations Framework Convention on Climate Change at its Ninth Session*, GEF Council, 24th Session, GEF Doc GEF/C.24/12 (2004).

54 Ibid.

55 Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol, *Adaptation Fund*, Decision 1/CMP.3, 3rd Sess, UN Doc FCCC/KP/CMP/2007/9/Add.1 (2007).

56 The World Bank has been appointed as the trustee of the funds, also on an interim basis.

57 Interview with Pacific Island Delegate One (Anonymous) (16 January 2008).

58 *Adaptation Fund*, above n55.

59 Climate Change Secretariat, *Investment and Financial Flows to Address Climate Change* (2007) at 154.

US$1 million has been provided from the LDCF to support the region's five LDCs in preparing national adaptation programmes of action.[61] The remainder of the adaptation funding received by PICs (US$2 million) has come from the SPA and has gone towards practical adaptation measures.[62] Kiribati has been the main beneficiary of adaptation funding, receiving approximately 44 per cent of the regional total.

Table 2: Funding disbursed by the GEF for adaptation activities in PICs (US$ millions)

	Vulnerability & Adaptation Assessments		Implementation Activities	Total
Country	GEF Trust Fund	LDCF	GEF Trust Fund	
Samoa	0.34	0.20	0.06	0.40
Fiji	0.25	0.00	0.04	0.29
Vanuatu	0.34	0.20	0.00	0.34
Solomon Islands	0.34	0.20	0.00	0.34
Tuvalu	0.34	0.20	0.00	0.34
Marshall Islands	0.14	0.00	0.00	0.14
Kiribati	0.34	0.20	1.90	2.24
PNG	0.14	0.00	0.002	0.14
FSM	0.14	0.00	0.00	0.14
Cook Islands	0.25	0.00	0.00	0.25
Tonga	0.14	0.00	0.00	0.14
Niue	0.14	0.00	0.00	0.14
Palau	0.14	0.00	0.00	0.14
Nauru	0.14	0.00	0.00	0.14
Total	2.18	1.00	2.00	5.18

60 This includes approximately US$65,000 for each PIC for vulnerability, adaptation assessments and initial national communications (US$910,000 total); approximately US$75,000 each for vulnerability and adaptation assessments for PICs' second round of national communications (US$1.05 million total); and US$0.22 million for activities in Fiji and the Cook Islands as part of the Assessment of Impacts of and Adaptation to Climate Change in Multiple Regions and Sectors (AIACC) project. Data from the GEF project database <http://gefonline.org/home.cfm> accessed 11 January 2008. Values are of the total GEF grant, which may be more than the actual amount received by countries. AIACC project data from Neil Leary & Jyoti Kulkarni, *Draft Final Report of the AIACC Project* (2007) United Nations Environment Programme <http://aiaccproject.org> accessed 11 January 2008.

61 US$200,000 for each of the five Pacific LDCs for NAPA preparation (US$1 million regional total). Data from the GEF project database <http://gefonline.org/home.cfm> accessed 11 January 2008.

62 This includes the US$1.899 million for the Kiribati Adaptation Project (Phase II) and US$101,791 provided to community adaptation projects in PICs through the Community Based Adaptation project. See <http://gefonline.org/home.cfm> and <htp://sgp.undp.org/index.cfm?module=Projects&page=AdvancedSearch> accessed 11 January 2008.

In addition to the funds already disbursed, approximately US$31.30 million is earmarked for PICs in the coming years (Table 3). Close to half of this funding (US$15.35 million) is from the LDCF for implementing adaptation measures in the region's five LDCs.[63] The remainder ($US15.95 million) will come from the SCCF to implement the Pacific Adaptation to Climate Change project in 13 PICs as well as a tourism sector adaptation project in Fiji.[64]

Table 3: Planned GEF funding for adaptation activities in PICs (US$ millions)

Country	LDCF	SCCF	Total
Samoa	2.00	1.14	3.14
Fiji	0.00	2.27	2.27
Vanuatu	3.00	1.14	4.14
Solomon Islands	3.50	1.14	4.64
Tuvalu	3.35	1.14	4.49
Marshall Islands	0.00	1.14	1.14
Kiribati	3.50	0.00	3.50
PNG	0.00	1.14	1.14
FSM	0.00	1.14	1.14
Cook Islands	0.00	1.14	1.14
Tonga	0.00	1.14	1.14
Niue	0.00	1.14	1.14
Palau	0.00	1.14	1.14
Nauru	0.00	1.14	1.14
Total	15.35	15.95	31.30

A. Effectiveness of GEF Support

While it is beyond the scope of this article to provide a detailed evaluation of the effectiveness of multilateral support for adaptation measures in PICs, a number of important observations can be made.

(i) Contribution to Adaptation Needs in PICs

Funding for adaptation in PICs has been biased towards vulnerability assessments, with very little spent on practical adaptation measures (see Table 2). An additional US$31.30 million for implementation activities is in the GEF 'pipeline', representing a substantial shift from assessments to actual adaptation. However, by the time these funds are fully approved, more than a decade would have passed since PICs first began assessing their vulnerability to climate change. This delay is noted as a key weakness in the multilateral framework intended to support adaptation in PICs.[65]

63 Global Environment Facility, *GEF Pacific Alliance for Sustainability Program Framework* (2008); Global Environment Facility, *Progress Report on the Least Developed Country Fund (LDCF) and the Special Climate Change Fund (SCCF)*, LDCF/SCCF Council Meeting, 25 April, 2008, GEF Doc: GEF/LDCF.SCCF.4/Inf.3 (2008).

64 Ibid.

For PICs, GEF funding for vulnerability and adaptation assessments provided the first opportunity for a detailed analysis of the likely impacts of climate change. According to Hay this 'was critical to the identification of vulnerable countries, vulnerable sectors and systems within those countries and for the Pacific islands region as a whole'.[66] While doubts have been raised about their long-term value, it is generally agreed that these assessments have provided an important foundation for subsequent climate change work in PICs.[67]

While there has been no systematic assessment of the NAPA process in PICs, the NAPA exercise was generally viewed as a useful process.[68] Importantly, the NAPAs include an estimate of the cost of implementing urgent and immediate adaptation needs. Alarmingly, however, it has been claimed that external pressure was applied to PICs to under-estimate the cost of adaptation measures, suggesting that adaptation costs may be substantially higher than indicated in the NAPAs.[69] Concerns have also been raised about the limited integration of the NAPAs into broader development planning processes, which may undermine their overall effectiveness.[70]

(ii) Access to GEF Funds

All PICs have received a similar amount of funding for vulnerability and adaptation assessments, but, to date, the majority of funds for implementation measures have been spent in Kiribati alone. While the planned funding is more evenly distributed, there is a bias towards the region's LDCs, due to their eligibility for funding under the LDCF. While it is not doubted that LDCs are particularly vulnerable to the adverse impacts of climate change, there also needs to be sufficient funding for the other PICs. The bulk of the other planned funding will be channelled through a single regional project submitted under the SCCF, with each participating country receiving a fraction.

The uneven distribution of GEF funding within the Pacific region, along with its bias towards assessments, is symptomatic of broader challenges PICs face in accessing funds from the GEF. Indeed, it is noted that small island developing states in the Pacific region have received proportionally less GEF support than other regions.[71] Key reasons for this limited access to GEF support include: limited capacity at the national level to design GEF projects; limited access to co-financing; difficulties balancing local needs with global environmental benefits; and the lengthy delays in the GEF project cycle.[72]

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65 Interview with Pacific Island Delegate Two (Anonymous) (16 January 2008); Interview with Espen Ronneberg (22 Jan 2008).

66 John Hay, above n10 at 5.

67 Interview with Pacific Island Delegate One (Anonymous), above n57; Interview with Pacific Island Delegate Three (Anonymous) (17 January 2008); Interview with Pasha Curruthers, Climate Change Technical Adviser, Cook Islands' National Environment Service (2008).

68 Interview with Pacific Island Delegate One (Anonymous), above n57.

69 Interview with Pipi Peniamina Leavai, former Principal Climate Change Officer, Ministry of Natural Resources and Environment, Government of Samoa (22 January 2008).

70 Watkins, above n21.

71 Global Environment Facility, above n63.

72 Ibid.

The GEF has established special procedures for the LDCF and SCCF, with the aim of simplifying and accelerating access to funds. However, the limited experience in PICs to date suggests that serious delays remain. In Samoa, for example, it took close to 12 months to get preliminary endorsement from the GEF to fund one of its NAPA concepts under the LDCF, and it is anticipated that more than two years will have elapsed before the project actually begins.[73] Even longer delays have been experienced with the regional adaptation project submitted under the SCCF.[74] While this delay is partly attributable to the GEF implementing agency rather than GEF itself, it does reflect poorly on the overall GEF project cycle.

Recognising the problems faced by PICs in accessing its funds, the GEF Secretariat has launched the Pacific Alliance for Sustainability ('GEF-PAS') to formulate a regional program of GEF-funded activities.[75] However, it is too early to determine whether GEF-PAS will improve access to funding, or deliver more effective outcomes. Moreover, there is some uncertainty about how GEF-PAS will relate to the LDCF, SCCF and Adaptation Fund, which have different governance arrangements to the GEF Trust Fund.

B. *Adequacy of Current Funding Arrangements*

As detailed above, in the short-term approximately US$290-530 million is required for urgent and immediate adaptation needs in the Pacific islands region, with substantially more needed in the longer-term. However, for the foreseeable future only US$31.30 million is available from the multilateral funding framework provided by the climate change regime. This amounts to a shortfall of at least several hundred million dollars in the short-term. The following paragraphs assess the prospects for additional funding through the current arrangements.

(i) GEF Trust Fund

The GEF Trust Fund may continue to be a source of funding for vulnerability and adaptation assessments as part of future national communications prepared by PICs. However, the Trust Fund's only vehicle for supporting practical adaptation measures is the SPA, which is expected to end by June 2008. While the GEF has plans to integrate the SPA into its core programmes, its emphasis on global environmental benefits makes it of limited practical value for PICs seeking funds for local adaptation needs.[76]

(ii) LDCF

Based on existing financial contributions from developed countries, the LDCF contains approximately US$169 million to be distributed to 48 LDCs.[77] While it is hoped that donors will contribute more to the LDCF, this is far from certain. Moreover, even if

73 This claim is based on the author's own experience of working for the Government of Samoa.

74 Ibid.

75 Global Environment Facility, above n63.

76 UNFCCC Conference of the Parties, *Report of the GEF to the Thirteenth Session of the Conference of the Parties to United Nations Framework Convention on Climate Change: Note by the Secretariat*, 13th Sess, UN Doc FCCC/CP/2007/3 (2007).

77 LDCF/SCCF Council, *Status Report on the Climate Change Funds as of September 30, 2007,* 3rd Sess, GEF Doc GEF/LDCF.SCCF.3/Inf.2 (2007).

additional funds are made available it is unlikely to be enough to cover the estimated US$1-2 billion required globally to implement NAPAs in all LDCs.[78] Moreover, unless the LDCF is expanded, it is unlikely that PICs will receive any additional support from this source than that which is already allocated. Thus, for the time being, the LDCF should not be viewed as a reliable source of funding for LDCs in the Pacific region.

(iii) SCCF

According to the GEF, based on approved and pipeline projects, the SCCF is already overcommitted.[79] For this reason, the GEF has decided to close the SCCF until further pledges are made.[80] However, there is speculation that the flow of funds into the SCCF has already peaked and that donors are unlikely to commit much additional money to this fund. Indeed, even though the GEF guidelines allow for contributions to the SCCF to be quarantined for adaptation projects, this may not have been enough to assuage donor concerns about donating to a fund that also supports projects in oil-rich countries. Moreover, there is a perception that donor countries are delaying further pledges to the SCCF until the Adaptation Fund is fully operational, as they view this as a longer-term source of funding for adaptation.[81]

(iv) Adaptation Fund

Based on projections of CDM activity, it is estimated that financial flows into the Adaptation Fund will be in the range of US$80-300 million for the 2008-2012 period.[82] Assuming that the post-2012 agreement retains the current rules, US$100-500 million could flow into the fund annually by 2030, rising to US$1-5 billion annually if demand for CDM emission credits is high.[83] Thus, even under the best-case scenario, the Adaptation Fund is unlikely to cover the tens of billions of dollars needed for adaptation in developing countries.

While the size of the Adaptation Fund is crucial, just as important for PICs is the way the fund is administered. Until the operational guidelines are formulated, it is impossible to predict how this fund may support adaptation in PICs. As discussed below, the inclusion of a dedicated programme for small island developing states would greatly improve the accessibility of adaptation funds for PICs.

C. Bilateral Support

While the main focus of this article is on the multilateral support provided through the financial mechanism, article 11 of the Convention also refers to bilateral donors as an additional source of funding for developing countries. Indeed several developed countries have reported providing funding for adaptation activities in the Pacific islands

78 Oxfam, above n20 at 21.
79 Global Environment Facility, above n52.
80 Ibid.
81 Interview with Pacific Island Delegate Three, above n67.
82 Climate Change Secretariat, above n59.
83 Ibid.

region.[84] Yet it has been suggested that this funding does not qualify as 'new and additional' funding as required under article 4(3) of the Convention.[85] Furthermore, regional donors have been criticised for claiming that particular initiatives contribute to adaptation, when in fact this is not the central purpose of the funding.[86]

Without further time, resources and access to information it is difficult to ascertain whether the concerns about the nature of the bilateral support provided to PICs are well founded, or to what proportion of bilateral support they might apply. Thus, while a significant level of bilateral funding has been reported, further research is required to evaluate the true nature of this support and the extent to which it has contributed to adaptation in PICs. Given the extreme vulnerability of PICs to the adverse impacts of climate change, it is important to avoid building a false impression of the magnitude of the assistance provided.

5. Prospects for the Post-2012 Climate Regime

During recent years, momentum has been building for a stronger international legal framework to deal with climate change. This has principally been driven by the impending expiry of the current *Kyoto Protocol* arrangements, which set emission reduction targets for Annex I Parties to be achieved between 2008-2012 (the first commitment period). However, more fundamental concerns about the long-term effectiveness of the *Kyoto Protocol* have also played an important role in focussing international attention on future options to address climate change. In particular, as one of the world's top two sources of GHG emissions, the United States' opposition to the Protocol is a major barrier to multilateral climate efforts.[87] Strategies for mitigating climate change must also find new ways to deal with the rapidly growing emissions in large developing countries, such as China and India. From a practical perspective, the effectiveness of the climate regime will remain extremely limited unless it is expanded beyond the narrow scope provided by the *Kyoto Protocol*.

84 Australian Government, Greenhouse Office, *Australia's Fourth National Communication on Climate Change* (2005); Ministry for the Environment, *New Zealand's Fourth National Communication Under the United Nations Framework Convention on Climate Change* (2006); Commission of the European Communities, *Fourth National Communication from the European Community Under the Framework Convention on Climate Change* (2006) <http://unfccc.int/national_reports/annex_i_natcom/submitted_natcom/items/3625.php> accessed 18 December 2008. The total value of support for this period (2000-2004) is estimated to be more than US$17 million (approximately US$12.13 million from Australia; US$3.24 million from New Zealand; and US$1.89 million from the European Community).

85 Interview with Pacific Island Delegate One, above n57; Interview with Pacific Island Delegate Two, above n65.

86 Interview with Pacific Island Delegate Two, above n65.

87 See John Vidal & David Adam, 'China overtakes US as world's biggest CO_2 emitter', *The Guardian* (19th June 2007) <www.guardian.co.uk/environment/2007/jun/19/china.usnews> accessed 10 June 2008. Figures released by the Netherlands Environmental Assessment Agency show that in 2006 China overtook the US as the world's largest source of GHG emissions.

A. Framework and Scope for the Post-2012 Negotiations

The international community has established a two-track negotiating process to formulate the post-2012 climate change regime. The first of these negotiating pathways was launched in 2005 through the establishment of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the *Kyoto Protocol* ('AWG').[88] The intended outcome of the AWG negotiations is for Parties to the *Kyoto Protocol* to agree to new targets for the second commitment period.[89] With respect to adaptation, the AWG is crucial for two key reasons. Firstly, if the AWG agrees to strong targets for reducing emissions, this will help to mitigate climate change and thus limit the extent of adaptation required. Secondly, as discussed in more detail below, the rules agreed to during the AWG negotiations may substantially increase funding for adaptation in developing countries in the post-2012 period.

After beginning as an informal 'dialogue', the second negotiating track was officially launched in December 2007, when the COP adopted the Bali Action Plan.[90] These negotiations will occur through the Ad Hoc Working Group on Long-term Cooperative Action under the Convention ('AWG-LCA'). The AWG-LCA negotiations got underway in March 2008, with countries aiming to 'reach an agreed outcome' for adoption at the 15th session of the COP in Copenhagen in 2009.[91] While it has been widely reported that the AWG-LCA will produce a new framework for international co-operation on climate change, one Pacific Island delegate has rather pessimistically pointed out that the 'agreed outcome' could be something substantially weaker.[92] Moreover, while the action plan does provide a set of building blocks for negotiation, its wording is ambiguous and non-prescriptive. It is known what broad topics will be considered by the AWG-LCA, but the form and substance of the outcome remains unknown.

The Bali Action Plan lists a broad range of topics to be addressed during the AWG-LCA negotiations, including several specifically related to adaptation. Paragraph 1(c) calls for 'enhanced action on adaptation' and makes specific reference to five key considerations: implementation of adaptation actions; risk management, including insurance; disaster reduction strategies; economic diversification; and strengthening the

88 Conference of the Parties Serving as the Meeting of the Parties, *Consideration of Commitments for Subsequent Periods for Parties Included in Annex I to the Convention Under Article 3, paragraph 9, of the Kyoto Protocol*, Decision 1/CMP.1, 1st Sess, UN Doc FCCC/KP/CMP/2005/8/Add.1 (2005).

89 Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol, *Report of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol on its first session, held at Bonn from 17 to 25 May 2006*, 1st Sess, UN Doc FCCC/KP/AWG/2006/2 (2006).

90 UNFCCC Conference of the Parties, *Bali Action Plan*, Decision 1/CP.13, 13th Sess, UN Doc FCCC/CP/2007/6/Add.1 (2007).

91 Ibid.

92 Thomas Fuller & Andrew Revkin, 'Climate Plan Looks Beyond Bush's Tenure' *The New York Times* (16 December 2007) <www.nytimes.com/2007/12/16/world/16climate.html> accessed 5 January 2008; 'Bali Talks End with Surprise Deal' *The Sydney Morning Herald* (15 December 2007) <www.smh.com.au/news/environment/bali-talks-end-with-surprise-deal/2007/12/15/1197568323923.html> accessed 5 January 2008; Shaun Tandon 'US Knocks 2009 Climate Treaty' *The Courier Mail* (16 December 2007) <www.news.com.au/couriermail/story/0,23739,22932597-952,00.html> accessed 5 January 2008; Interview with Pacific Island Delegate One, above n57.

'catalytic role of the Convention'.[93] Importantly for PICs, the Bali roadmap makes specific reference to LDCs and small island developing states as countries particularly vulnerable to climate change.

Possibly the most important provision in the Bali roadmap relating to adaptation is paragraph 1(e), which calls for '[e]nhanced action on the provision of financial resources and investment to support action on mitigation and adaptation'. While the action plan does not include specific guarantees, it emphasises the importance of improving 'access to adequate, predictable and sustainable financial resources and financial and technical support' as well as highlighting the need for the 'provision of new and additional resources'.[94]

B. The Case for Strengthening Adaptation Provisions

While it is promising that adaptation has been given a degree of prominence on the agenda of climate change negotiations, this does not guarantee that significant progress will be made. It is crucial that the case for stronger adaptation provisions in the post-2012 climate regime continue to be made.

As shown above, the climate regime provides a legal commitment from developed countries to fund adaptation in developing countries, especially those most vulnerable to the adverse impacts of climate change. However, action to date, while not insubstantial, has been far from impressive. The experiences of PICs mirror broader experiences with the international framework provided by the climate regime. As was noted during the pre-AWG-LCA Dialogue sessions, 'adaptation needs will be much higher than that which current level [sic] of voluntary funding can be expected to sustain'.[95] During the Dialogue it was also noted that '[t]he main challenges facing the implementation of adaptation in the future remains those of the sustainability, sufficiency and predictability of both national and international long term support'.[96] Moreover, it is noted that '[t]here is also a need for more streamlined, innovative and transparent access to funding, and awareness of the different requirements and modalities of the different sources'.[97] Schipper agrees that 'the existing provisions, even with the various funds adopted through the Marrakesh Accords … are not considered sufficient'.[98]

As well as highlighting the deficiencies in the international framework for adaptation, the experiences to date raise legitimate and more fundamental questions about how best to support the adaptation needs of developing countries, and in particular whether the *UNFCCC* is the most appropriate framework for adaptation. Indeed, as Schipper argues, '[i]n many places, vulnerability to climate is determined by factors that are far beyond the scope of the *UNFCCC* or any global treaty … many of these determinants of vulnerability are … part of larger socio-economic and cultural building blocks of

93 *Bali Action Plan,* above n90.

94 Ibid.

95 UN Climate Change Secretariat, *Addressing Action on Adaptation*, Dialogue Working Paper 4 (2007).

96 Ibid.

97 Ibid.

98 Lisa Schipper, 'Conceptual History of Adaptation in the UNFCCC Process' (2006) 15 *Review of European Community and International Environmental Law* 82 at 90.

nations'.[99] Yet the practical necessity to integrate adaptation with the broader international development agenda does not negate the need for an international legal framework. Rather than approaching this matter from an either/or perspective, as Levina points out, '[t]he question that policy makers need to answer is what aspects of adaptation can and should be addressed by the *UNFCCC* and what aspects are already and/or should be addressed by other agencies'.[100]

The provision of funding for adaptation is not about rich countries providing charity to the poor and vulnerable. While it can be argued that it is in the security and economic interests of developed countries to fund adaptation, this also is not the key reason why a legal regime is needed. The key underlying justification for a strong, legally mandated, international framework is that developed countries are directly responsible for the impacts of climate change. By extension, therefore, developed countries must bear responsibility for funding the costs of adaptation. Goodwill and strategic imperatives will be integral to building international consensus on the need to support adaptation, but any commitments made by developed countries must also be built on an acceptance of this legal responsibility. As discussed in previous sections of this article, this acceptance of responsibility is already a key feature of the *UNFCCC* and *Kyoto Protocol*. The aim of future negotiations should be to build on this legal foundation in order to strengthen the funding and support that is available to vulnerable countries.

6. Specific Provisions for the Post-2012 Framework

There have been a wide variety of proposals for the post-2012 regime.[101] For the most part these have focussed on questions related to mitigation.[102] However, a number of important proposals have been put forward to strengthen the adaptation provisions in the post-2012 framework. Several of those relating specifically to adaptation funding are explored below.

(i) Revenue from Flexibility Mechanisms

One option for raising additional funds for adaptation is to require that a share of proceeds from each of the *Kyoto Protocol's* flexibility mechanisms be paid into the Adaptation Fund.[103] Currently only the CDM is covered by such an arrangement, whereby two per cent of proceeds must be paid into the Adaptation Fund. Extending

99 Id at 92.

100 Ellina Levina, *Adaptation to Climate Change: International Agreements for Local Needs* (2007) <www.oecd.org/document/58/0,3343,en_2649_34359_36738106_1_1_1_1,00.html> accessed 16 January 2008.

101 See Daniel Bodansky, *International Climate Efforts Beyond 2012: A Survey of Approaches* (2004) <www.pewclimate.org/policy_center/reports> accessed 5 January 2008; Yasuko Kameyama, 'The Future Climate Regime: A Regional Comparison of Proposals' (2004) 4 *International Environmental Agreements* 307.

102 See, eg, Alex Michaelowa, Sonja Butzengeiger & Martina Jung, 'Graduation and Deepening: An Ambitious Post-2012 Climate Policy Scenario' (2005) 5 *International Environmental Agreements* 25; Michel Den Elzen, Marcel Berk, Paul Lucas, Patrick Criqui & Alan Kitous, 'Multi-Stage: A Rule-Based Evolution of Future Commitments Under the Climate Change Convention' (2006) 6 *International Environmental Agreements* 1; Anita Halvorsse, 'Common, but Differentiated Commitments in the Future Climate Change Regime: Amending the *Kyoto Protocol* to Include Annex C and the Annex C Mitigation Fund' (2007) 18 *Colorado Journal of International Environmental Law and Policy* 247.

this to the other two flexibility mechanisms (joint implementation and emissions trading) would substantially increase the flow of funds for adaptation. Based on data for 2006 it is estimated that revenue flowing into the Adaptation Fund could be increased by 10-25 per cent.[104]

The negotiations within the AWG will be particularly important for extending the share of proceeds rule to the *Kyoto Protocol's* other flexibility mechanism. If the AWG negotiations lead to an amendment of the Protocol, then it will be necessary to include a specific clause stating that a share of proceeds from emission trading and joint implementation activities is to be paid into the Adaptation Fund to support vulnerable countries to adapt to the adverse impacts of climate change. Making specific reference to the Adaptation Fund will be particularly important so as to avoid further protracted negotiations about how the share of proceeds should be managed. If the AWG negotiations lead to a completely new agreement to replace the *Kyoto Protocol*, there may be opportunities to formulate a more substantial article relating to the Adaptation Fund. It is conceivable that the negotiations within the AWG or AWG-LCA could also establish new flexibility mechanisms, which would provide opportunities to apply the share of proceeds concept further.

(ii) International Aviation and Maritime Transport

Emissions from international aviation and maritime transport are currently excluded from the climate change regime, but are projected to rise significantly over the coming decades.[105] Two options that have been proposed to address this source of emissions also provide an opportunity to raise new funds for adaptation.[106] The first option is to set a limit on the emissions allowed from this sector, and auction allowances to international marine and air transport operators, while the second option is to apply a levy to international air transportation. As well as creating an incentive for companies to cut GHG emissions, both options generate new revenue, which could be directed towards adaptation. It is estimated that annual revenue from the first option could reach US$35 billion by 2030.[107] Based on a levy of US$6.5 per passenger per flight, option two could generate approximately US$13 billion annually.[108]

From an adaptation perspective a number of issues will be particularly important during negotiations to establish either of these options. First and foremost, it will be necessary to ensure the revenue, or at least a share of it, is directed towards adaptation activities. There are strong arguments in favour of investing the revenue in mitigation activities to maximise the emission savings. However, by invoking the polluter-pays

103 Christine Loh et al, *Climate Change Negotiations: An Asian Stir Fry of Options* (2007) <www.civic-exchange.org> accessed 10 January 2008; Climate Change Secretariat, above n59; UNFCCC Conference of the Parties, *International Blueprint on Adaptation: Submission from Tuvalu*, 13th Sess, UN Doc FCCC/CP/2007/MISC.2 (2007).

104 Climate Change Secretariat, above n59 at 203.

105 Ibid.

106 Climate Change Secretariat, above n59; UNFCCC Conference of the Parties, above n100.

107 Climate Change Secretariat, above n59.

108 Ibid.

principle, PICs and other vulnerable countries could argue that directing the revenue to adaptation establishes a direct link between GHG emissions and the damage caused by these climate changing gases.[109]

Secondly, it will also be important to reach agreement on how to distribute funding for adaptation activities. Under the 'burden sharing mechanism' proposed by Tuvalu in its *International Blueprint on Adaptation*, the revenue would be distributed between the SCCF (30 per cent), the Adaptation Fund (40 per cent) and the LDCF (30 per cent).[110] However, there may be a case for pooling revenue into a single fund to minimise transaction costs.

Finally, another consideration is the effects the proposed mitigation options will have on Pacific Island economies. Most PICs, especially the smallest among them, are heavily dependent on imported goods and are therefore extremely vulnerable to any increase in the costs of international transportation. While the two options explored above would help to raise funds for adaptation, this may come at the expense of weakened economic conditions, which in turn could further limit the adaptive capacity of these island nations. To overcome this risk, Tuvalu has proposed that all international air and sea transport to and from small island developing states be exempted from mitigation requirements.[111] Whether or not this is a workable solution remains uncertain, but the point it makes is clear: international negotiations must not add to the economic vulnerability of PICs.

(iii) Funding from the US

As discussed above, the Adaptation Fund represents the most promising existing source of funds for adaptation in the developing world, including PICs. The potential of this fund could be even greater if its revenue base is expanded along the lines discussed above. However, the exclusion of the US from the *Kyoto Protocol* places an important limit on the flow of funds into the Adaptation Fund. Assuming that the US will eventually make commitments to cut GHG emissions, it is likely that this will include some form of carbon trading. Indeed, within the US several domestic carbon trading initiatives are already underway. Yet as long as the US stays outside of the *Kyoto Protocol*, the Adaptation Fund cannot benefit from a share of proceeds from the US carbon trading market. Furthermore, according to Mace, this means 'the Adaptation Fund does not reflect an equitable sharing of the burden of adaptation among developed countries'.[112]

There are several options for the post-2012 regime to ensure a share of the proceeds from US carbon trading is directed towards adaptation. First, a new UNFCCC-based adaptation fund could be established to administer and disburse the funds from this source. Secondly, the share of proceeds could be directed to the SCCF and LDCF, which are established under the convention. Finally, even though the US is outside of the *Kyoto*

109 United Nations General Assembly, *Report of the United Nations Conference on Environment and Development: Annex 1: Rio Declaration on Environment and Development*, UN Doc A/CONF.151/26 (Vol. I) (1992). The 'polluter pays' principle states that a 'polluter should, in principle, bear the cost of pollution'.

110 UNFCCC Conference of the Parties, above n100.

111 Ibid.

112 Mace, above n35 at 241.

Protocol, the post-2012 accord could include new rules to allow the share of proceeds to be paid into the Adaptation Fund from US carbon trading activities. With a view to supporting adaptation in PICs, the third option is clearly the best arrangement, as it would avoid the risk of duplication and increased transaction costs associated with establishing a new fund. Paying the share of proceeds into the SCCF, as suggested in option two, is also problematic because of ongoing donor concerns with this fund. Using the LDCF means the funds would only be available to LDCs. Moreover, as discussed above, the management arrangements for the Adaptation Fund have the potential to better meet the needs of developing countries, including PICs.

(iv) Agreement on Funding Levels

Market-based flexibility mechanisms will undoubtedly play a crucial role in raising funds for adaptation. However, the extent of their contribution is not guaranteed and will ultimately depend on a range of market forces. As the early experiences with the European emissions trading scheme show, the price of carbon is difficult to predict and can drop to very low levels.[113] If adaptation funding is tied to a share of proceeds from carbon trading, it too will rise and fall with the market. This is at odds with adaptation needs of developing countries, which depend on access to reliable and sustained funding.

To ensure adequate funds are available for adaptation in vulnerable countries, it is essential that developed countries commit to a certain level of funding. Whether this funding is raised through market mechanisms, levies, or as a contribution from government budgets is not as relevant as ensuring that the required levels are guaranteed. In order for guarantees to be made, three key questions will need to be addressed. First, how much funding is required to meet the adaptation needs of developing countries? Secondly, how should responsibility for providing this funding be distributed between developed countries? Finally, when will adaptation funding be needed? It is unrealistic to expect the international community to agree on answers to these questions during the AWG and AWG-LCA negotiations. Instead, these negotiations should establish a commission of inquiry with a view to reaching agreement of specific targets for adaptation funding within five years. In the interim the negotiations should set a voluntary, overall target as a measure of goodwill.

While the current negotiations may not lead to agreement on guaranteed funding levels, they may establish the principles on which future agreement can be reached. First and foremost, levels of adaptation funding should be based on what is needed. It must also be re-affirmed that adaptation funding has to be 'new and additional', and not re-directed overseas development aid.[114] A third principle should be that funding must be 'provided reliably from year to year, so that adaptation can be properly integrated into national planning processes'.[115] Finally, building on the central principle of the UNFCCC, developed countries should agree to provide adaptation funding according to their responsibilities and capabilities.[116]

113 Climate Change Secretariat, above n59.

114 *UNFCCC*, art 4(3).

115 Oxfam International, above n20 at 33.

(v) Small Island Developing States Funding Window

As well as ensuring there is adequate funding available, it is important to ensure it is accessible and aligned with countries' needs. A key outcome from the AWG and AWG-LCA negotiations must be to establish appropriate arrangements for all sources of adaptation funding, with the aim of ensuring financial support is available to the most vulnerable. For PICs and other small island developing states, one way to achieve this is to establish a dedicated funding window for these states in the Adaptation Fund and any new funds that might be established.

7. Opportunities and Challenges for PICs

During the course of the AWG and AWG-LCA negotiations PICs will be faced with a range of opportunities and challenges that will influence their ability to achieve positive outcomes for adaptation. Several of these are identified and discussed below.

A. National Capacities

The AWG and AWG-LCA negotiations will place a significant burden on PICs. While funding is made available for PICs to attend these negotiations, most governments simply do not have enough staff to spare.[117] With national environment budgets already stretched and a wide range of pressing domestic concerns, it is hard for governments to justify sending delegates to every negotiating session.[118] As such it is not uncommon for the Pacific Islands region to be severely under-represented during climate change negotiations. While there is strong support from organisations such as the Foundation for International Environmental Law and Development ('FIELD'), this is no substitute for national representation.

B. Regional Politics

According to a number of Pacific Island representatives, tensions within the Pacific region are likely to cause significant challenges during the negotiations.[119] In particular, disagreement on how to address the issue of avoided deforestation is causing serious rifts between certain PICs. Papua New Guinea ('PNG') has been at the forefront of efforts within the climate negotiations to seek financial compensation for protecting existing forests. This has been vigorously opposed by a number of other PICs, fearing that it would create a potential loophole for countries to claim emission reductions when no savings are being made.[120] In response, PNG has actively opposed a number of other PICs on issues related to adaptation.[121] Unless these differences can be resolved, it is unlikely that the Pacific will be able to speak with a common voice on adaptation.

116 Ibid.

117 These are the author's own observations.

118 Interview with Pacific Island Delegate One, above n57.

119 Interview with Pacific Island Delegate One, above n57; Interview with Pacific Island Delegate Three, above n67.

120 Interview with Pacific Island Delegate One, above n57.

121 Ibid.

The election of a Labor government in Australia introduces a new unknown into the regional climate change politics equation. Climate change has been a bone of contention between Pacific Islands and Australia for some time, with the previous Howard government criticised for using its economic and political might within the region to limit regional action on the issue.[122] The Rudd government moved quickly to ratify the *Kyoto Protocol* and has promised new support for adaptation in the Pacific islands region.[123] However, it remains to be seen whether Pacific islands will be allowed more freedom to form a strong regional voice without interference from Australia. One interviewee has expressed serious doubts, arguing that Australia's stranglehold on regional politics will continue to be a barrier.[124]

The lack of regional coordination on climate change issues has the potential to be another significant obstacle to PICs achieving common objectives during the AWG and AWG-LCA negotiations. Traditionally, the Secretariat of the Pacific Regional Environment Programme ('SPREP') has been responsible for regional climate change issues. However, SPREP has found it difficult to play a strong leadership role in relation to the international climate change negotiations. The influence of Australia – a member of SPREP's council and its single biggest donor – has been noted as a major reason for this.[125] More mundane issues relate to the lack of funding and staff turnover. Another major issue is the ongoing 'turf-warfare' between SPREP and other regional organisations relating to the division or responsibilities. This has become particularly frustrating on adaptation issues, with organisations competing for regional responsibility for adaptation in vulnerable sectors such as water, agriculture, forests and health.[126]

C. *Negotiating Alliances*

In addition to forming a strong regional partnership, there is potential for PICs to form a number of other alliances during the AWG and AWG-LCA negotiations. In particular, there is a lot to be gained from maintaining and strengthening the Alliance of Small Island States ('AOSIS'). Although AOSIS countries are not united in all their circumstances or views, they do share a common vulnerability to the adverse impacts. AOSIS has been noted as an effective negotiating bloc during previous climate change negotiations and has the potential to continue this role in the current negotiations.[127]

A number of interviewees also noted the importance of PICs forming a stronger alliance with LDCs, as together they represent the countries most vulnerable to climate change.[128] This alliance could be facilitated by the five Pacific LDCs, which are already part of the LDC negotiating bloc. A key focus of this alliance would be to push for

122 Ibid.

123 Australian Labor Party, *Assisting Our South Pacific Island Neighbours Prepare For Climate Change* (2007)<www.alp.org.au/media/0707/msCCida240.php> accessed 2 December 2007.

124 Interview with Pacific Island Delegate One, above n57.

125 Ibid.

126 These are the author's own observations.

127 Pamela Chasek, 'Margins of Power: Coalition Building and Coalition Maintenance of the South Pacific Island States and the Alliance of Small Island States' (2005) 14 *Review of European Community & International Environmental Law* 125.

separate funding windows for LDCs and small island developing states in any new adaptation funding mechanisms that may be formed.

Several Pacific island representatives have also noted the importance of forming a closer alliance with the European Union ('EU').[129] While there are some differences on how adaptation should be funded, there is broad consensus between PICs and European countries on the need for stronger adaptation provisions in the post-2012 agreement. The EU's strong position on the need for deep cuts in global emissions makes such an alliance more palatable to PICs.

8. Conclusion

The *UNFCCC* and *Kyoto Protocol* provide an important legal framework to support adaptation in developing countries. However, as the experience in the Pacific Islands region shows, the potential of this regime is currently under-realised. Although not insubstantial, the financial support provided to PICs through multilateral funding mechanisms has contributed little to practical, ground-level adaptation activities. Moreover, funding planned for the coming years is only a fraction of what is needed to assist PICs to adapt to the adverse impacts of climate change. It is clear that the current funding mechanisms, including the GEF Trust Fund, the LDCF, SCCF and Adaptation Fund, will not be adequate to cover the short- or long-term costs of adaptation in developing countries.

The recently launched negotiations to formulate a new international agreement on climate change in the post-2012 period present an important opportunity for PICs and other vulnerable developing countries to push for new and stronger adaptation funding provisions. While an international solution is urgently needed through deep cuts to GHG emissions, the international climate change negotiations must also deliver an expanded revenue base for adaptation funds. In addition, the post-2012 climate change accord needs to pave the way for binding guarantees from developed countries to cover the full costs of climate change adaptation in developing countries. Without these guarantees, there is a risk that adaptation funding will be limited to unreliable flows from market-based mitigation activities.

While the climate change negotiations provide an important opportunity to formulate a stronger framework for financing adaptation in developing countries, there are also a number of significant barriers that PICs face. These include limited national capacity and a range of political factors at the regional level. Overcoming these barriers will be crucial in allowing PICs to speak with a common voice on adaptation during the climate change negotiations. As well as finding regional coherence, PICs will also benefit from fostering existing and new alliances within the negotiating forum.

128 Interview with Pacific Island Delegate Two, above n65; Interview with Espen Ronneberg, above n65; Interview with Pasha Curruthers, above n67,

129 Interview with Pacific Island Delegate Two, above n65; Interview with Pasha Curruthers, above n67.