United Nations Climate Change Scoping Study

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Opportunities to Scale up Climate Change Support to Pacific Island Countries

Overview:

The purpose of this abbreviated "Summary Report" is to provide the UN System and external stakeholders with the key results from a broad-based Climate Change "Scoping Study" to identify options for the UN System to scale up climate change support to Pacific Island Countries. The report contains a series of recommendations proposing potential focal areas for future UN System Climate Change programming work and collaborative opportunities. Specific feedback on the Inter Agency Climate Change Centre (IACCC) concept note and other development support mechanisms is provided. The scoping study was commissioned by the UN System in the Pacific with funding by UNDP.

CLIMATE CHANGE SCOPING STUDY CONTEXT

1. It is widely recognised that small Pacific Island Countries (PICs) are on the global fore-front of climate change with increasing evidence that the impacts of climate change are already affecting some PICs. The findings outlined in the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 4AR) indicate that changing precipitation patterns, intensification of extreme weather events, ocean acidification, increasing air and ocean temperatures and sea-level rise all threaten to seriously undermine development in many PICs (Table 1). In the case of some PICs these impacts are likely to lead to the displacement and dislocation of Pacific Island peoples, customs and cultures.

Table 1 *- Climate Change Projections for Pacific Region (relative to 1961 to 1990 period; source IPCC 4AR)*

Climate Change Projections
• Surface air temperature increases of 1.0 to 4.17ºC in the northern Pacific by 2070-2100
• Surface air temperature increases of 0.99 to 3.11ºC in the southern Pacific by 2070-2100
• Increases to sea surface temperature of 1.0 to 3.0ºC by 2070-2100
• Acidification of ocean waters by 0.3 to 0.4 units by 2100
• Sea-level rise of 0.19 to 0.58 m by 2100
• Rainfall increases or decreases from -2.7% to +25.8% in the northern Pacific by 2070-2100
• Rainfall increases or decreases from -14% to +14.6% in the southern Pacific by 2070-2100
• Possible increased frequency and/or intensity of extreme weather events including droughts, floods and tropical cyclones which may exhibit increased peak wind speeds and higher mean and peak rainfall

2. The consensus view from the recent *International Scientific Congress on Climate Change* held in Copenhagen this year (10-12 March 2009) offers little solace with respect to the aforementioned climate change projections. Findings assessed at the Copenhagen Congress suggest that Earth is presently tracking towards the worst-case impact scenarios outlined in the IPCC 4AR, and that these scenarios may be overly conservative. If present greenhouse gas emission trends continue, scientists now consider that the Pacific region could experience mean sea-level increases of as much as 1m by the turn of the century. Furthermore, they suggest that "*…for many key parameters, the climate system is already moving beyond the patterns of natural variability within which our society and economy have developed and thrived… [and that there] …is a significant risk that many of the trends will accelerate, leading to an increasing risk of abrupt or irreversible climatic shifts*." (Copenhagen Climate Change Council, April 2009).

3. Through their *2008 Niue Declaration on Climate Change* endorsed at the 39th Pacific Island Forum (PIF) meeting, Pacific leaders reiterated their deep concern for the "*…serious current impacts of and growing threat posed by climate change to the economic, social, cultural and environmental well-being and security of Pacific Island Countries*…" They also noted the need for the international community to work together for common solutions. At the global level, the United Nations Secretary-General, Mr. Ban Ki Moon, has recently reemphasised the UN's strong commitment to supporting PICs with "*…mitigation, adaptation and disaster risk reduction, taking into account the special vulnerability* [they] *face*" (Niue Pacific Island Forum Leaders Meeting, 19 October 2008). More recently at Poznan COP 14 meeting (December 2008), the Secretary General stressed the need for all countries to "… *keep climate change at the top of national agendas*…"

4. Within the dual context of a growing concern for the Pacific's vulnerability to climate change and an increasing need for a coordinated approach to tackle this complex issue, a broad consultation process ("scoping study"), involving over 50 stakeholders, was undertaken to inform the United Nations Country Teams in Fiji, Samoa and Papua New Guinea and senior management within the UN System on options to scale up support to PICs on climate change.

5. The timing and focus of the scoping study was primarily driven by the development of a "concept note" on the establishment of a *United Nations Inter Agency Climate Change Centre* (IACCC) which was distributed at the *39th Pacific Island Forum Leaders Meeting* in August 2008 and presented along with other UN System climate change-related initiatives to PIC Governments and development partners at the *Pacific Climate Change Round Table* in October 2008. The concept note outlined the vision for an IACCC that would: (i) provide coordinated United Nations technical advice on climate change-related policy, (ii) support knowledge management in the field of climate change, (iii) assist countries with the design and implementation of adaptation and mitigation programme proposals, (iv) provide technical advice on the development of all United Nations initiatives, and (v) establish and maintain regional partnerships on climate change. The development of the IACCC concept note was a joint initiative between the Fiji, Samoa and Papua New Guinea United Nations Country Teams facilitated by the United Nation's Outcome Group on "Sustainable Environmental Management" under the United Nation's Sub-Regional Development Assistance Framework (UNDAF) (2008-2012) covering the work of 17 United Nations agencies

serving 14 PICs[1]. The proposed establishment of the *United Nations Inter Agency Climate Change Centre* was seen as an opportunity for the UN System in the Pacific region to progress the 'Delivering as One' UN agenda by improving coordination and aid effectiveness amongst United Nations agencies in the area of climate change adaptation and mitigation.

6. PIC stakeholders were appreciative of the opportunity to contribute their viewpoints on climate change priorities. The study also enabled the UN System to strengthen networks and goodwill, and to update regional stakeholders on UN System climate change initiatives. The following findings and recommendations represent an independent assessment by the author which aims to consolidate varied stakeholder feedback from the consultation process (November 2008 to March 2009).

KEY FINDINGS AND RECOMMENDATIONS

Future Focal Areas for Climate Change Support

7. Building on the initial work of the UNDAF Outcome Group on Sustainable Environmental Management, a mapping exercise was carried out as a precursor to the scoping study to identify the numerous climate change-focused initiatives being carried out by the UN System and other stakeholders in the region. The development of a "Climate Change Gap Analysis Matrix" outlining these initiatives has helped to identify areas of opportunity that may form the basis for future UN System joint programming and implementation involving multiple UN agencies and external development partners.

8. The Climate Change Gap Analysis Matrix indicates that PIC Governments, bilateral and multilateral donors, CSOs and international financial institutions are undertaking a substantive number (>270) of climate change-related initiatives in the region. Major stakeholders in the region include: the 15 PIC Governments; CROP agencies; the Governments of Australia, Canada, Italy, Germany, Japan and New Zealand; various Civil Society Organisations; the Asian Development Bank and the World Bank; the European Union; the GEF and the UN System.

9. Work being carried out by the UN System in the Pacific (and by other non-resident United Nations organisations at the global level) is perceived by Pacific stakeholders as a vitally important component of the Pacific's overall efforts to combat and adapt to climate change. The United Nations is providing substantive support in numerous fields including: environmental management, biodiversity conservation governance, human rights, gender equity, health, education, food security, water security, disaster risk management, poverty reduction and sustainable energy. Many of the United Nation's initiatives link directly to building national and regional capacity, and ultimately resilience to climate change.

10. In light of PIC's negligible contribution to global greenhouse gas (GHG) emissions and their high vulnerability to the present and pending impacts of climate change, PICs voiced a strong desire to see future climate change support to the region focus more strongly upon *on-the-ground adaptation measures* and those mitigation activities that have short as-well-as long-term sustainable development outcomes (e.g. food security and energy conservation respectively). Further focus should also be directed at adaptative measures that generate clear mitigation outcomes (e.g. coastal protection via mangrove reestablishment) and those that help achieve the Millennium Development Goals.

Sustainable Financing for Climate Change

11. Despite the perceived influx of climate change-tagged funding into the region, PICs widely identify "access to funding" as the major barrier they are facing with respect to combating climate change. The UN System is called to support PICs in their endeavours to leverage co-financing for GEF and other funding sources. Furthermore, it is an area where the United Nations is recommended to collaborate more strongly with CROP agencies and particularly SPREP which, as reiterated in the Niue Declaration on Climate Change (2008: 2), is mandated to work in cooperation with development partners to increase "*…Pacific Island countries' capacity to manage their engagement in the United Nations Framework Convention on Climate Change; and to secure new and additional financial and technical resources to do this work …*". Existing joint UN/CROP initiatives such as the recently initiated $US 13.25 million *Pacific Adaptation to Climate Change Project* (PACC), the *Water, Sanitation and Hygiene Programme (WASH),* and the *Food Security and Sustainable Livelihoods Programme* certainly demonstrate the value of a collaborative approach to funding mobilisation in the Pacific.

12. PIC Governments have requested the UN System to continue its move away from *ad hoc*, short-term, project-based development assistance to a more programmatic and collaborative approach that delivers both short and long-term development outcomes at the community level (*e.g. food, water and energy security, and disaster risk management*). This will require an integrated, participatory approach to help build capacity and empower communities to plan and implement sustainable development initiatives to combat the socio-economic and environmental impacts of climate change. There is also a widespread demand from PIC Governments for longer-term funding cycles that will help facilitate improved national and community planning activities, and the development and retention of human resource capacity within the region. The

[1] These UN agencies include: FAO, UNAIDS, UNDP, UNDSS, UNEP, UNESCAP, UNESCO, UNFPA, UNICEF, UNIFEM, UNILO, UNISDR, UNOCHA, UNOHCHR, UNV, WHO, and WMO. The PICs include: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Niue, Nauru, Palau, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu.

United Nation's Sub-Regional Development Assistance Framework (UNDAF) (2008-2012) and the UN Country Programme (UNCP) for Papua New Guinea (2008-2012) have been developed and recently implemented to address many of these concerns. The sub-regional *Community Centred Sustainable Development Programme,* which is presently being developed as a joint UN initiative, aims to address climate change as a cross-cutting issue, and is notably based upon an integrated and community-level approach. Furthermore, the UN System may need to consider the increasing shift of bilateral donors and international financial institutions in the Pacific towards *Sector Wide Approach* and *Budget Support* funding mechanisms.

13. There is a perception amongst PIC stakeholders that some project application, management and reporting procedures are cumbersome and overly demanding on the existing capacities within the region. The financing of community-level climate change adaptation initiatives (e.g. FAO Telefood Programme, GEF Small Grants Programme, UNESCO Participatory Programme) represents an important opportunity to further streamline and improve these procedures, and to realize "concrete" adaptation measures on the ground. The strengthening of PIC capacities to fulfill project planning, monitoring and evaluation requirements will be of critical importance at both the community and national levels.

Climate Change Knowledge Management

14. It is recommended that the UN System look to partner with CROP agencies and other development partners to expand the SPREP "Web-Based Climate Change Portal" which is looking to address some substantive regional gaps pertaining to climate change knowledge management. An AusAID/NZAID funded project is presently being implemented to assess the potential role and scope of the SPREP Portal which will need to be strongly tailored for the Pacific context. The UN System can value add in several areas of its comparative advantage (e.g. *media training, global case studies, regional advocacy in global arenas, curricula development, provision of global knowledge and expertise networks,*) and it will be important to link regional websites to existing global resources such as the new *Climate Community Knowledge-Sharing Platform* (www.undpcc.org), the UN System's gateway to climate change (www.un.org/climatechange), and the *Adaptation Learning Mechanism* website (www.adaptationlearning.net).

15. Scoping study feedback further indicates that the UN System has an important role to play in the development of "Pacific-tailored" knowledge management tools, guidelines, regulations, codes and legislation that are based on best practices and lessons-learned from existing regional and global climate change initiatives. Demand for practical mainstreaming tools appears to be strong at both the community and national levels. South-South to harness

Climate Change Adaptation Opportunities

16. There is a widespread request from PICs for development partners to put more focus on supporting the implementation of holistic community-level (and community-driven) climate change adaptation and sustainable development measures. Such initiatives are required to generate case-studies and lessons-learned upon which other communities/villages can model their own plans and initiatives that address their development visions and priorities. Adaptation efforts should primarily concentrate on those adaptation measures that provide tangible short-term outcomes (e.g. food and water security, *energy conservation and disaster risk management etc*) which also serve to build longer-term community resilience to climate change. Any such activities should consider drawing upon volunteerism as a mechanism to engage communities and mobilize resources to implement climate change adaptation measures.

17. Other areas of adaptation that provide opportunities for future UN System focus include; (i) *the impact of climate change on population health and vector borne diseases, (ii) assessing vulnerability and building resilience within the tourism sector, (iii) the linking and mainstreaming of disaster risk reduction and disaster risk management initiatives into existing and future climate change adaptation initiatives, (iv) facilitating capacity building through South-South Cooperation, and (v) the development of research initiatives, and policy and negotiation frameworks designed to address the social and cultural impacts of climate change-induced displacement of PIC communities. Such work will need to closely focus on the differential impact of climate change on potentially vulnerable groups such as women, children, and people living with disabilities and HIV and AIDS.*

Climate Change Mitigation Opportunities

18. Although PICs contribution to global greenhouse gas emissions is negligible (0.01%), the fields of energy efficiency, renewable energy and sustainable transport should remain high priority areas for relevant United Nations agencies as they represent "triple win" opportunities for PICs to simultaneously attain short to moderate-term sustainable development outcomes, build resilience to climate change and petroleum market volatility, and to contribute to global greenhouse gas abatement efforts. UN System efforts to strengthen national capacities and policy frameworks, and building awareness in the area of sustainable energy will play a vital role in removing existing barriers within the region.

19. Further climate change mitigation opportunities for the UN System focus include; (i) *mainstreaming energy efficiency practices including passive building technologies and energy conservation, (ii) renewable energy initiatives that address funding gaps for infrastructure-based programmes for rural and off-grid power development, and piloting innovative*

renewable energy technologies, (iii) the development of longer-term integrated projects that focus on the linkages between renewable energy, livelihoods and poverty reduction, (iv) initiatives to improve sustainable transport focusing on recycling initiatives for automotive special wastes, public awareness, bio-fuels and improved public transport systems, and (v) supporting PIC countries to assess, and where appropriate to participate in United Nations REDD (Reduced emissions from Deforestation and Degradation) pilot programmes.

POTENTIAL AREAS FOR COLLABORATION

20. The results of this scoping study have helped identify potential areas for collaboration between United Nations agencies and development partners. Areas of potential collaboration are provided below along with a few suggested key potential partners (Table 2).

***Table 2** – Examples of Potential Partnership Opportunities for United Nations Agencies and Pacific Stakeholders to Address Climate Change Gaps*

Partnership Opportunities	Potential Partners
Development Partners Climate Change Coordination Platform: Assisting in the development of an aligned approach to climate change amongst development partners and providing support to the Pacific Climate Change Round Table and other regional mechanisms	**United Nations Agencies:** Multiple UN agencies, ADB, WB **Potential Partnerships:** AusAID, CROP agencies, CSOs, EU, IUCN, JICA, NZAID, PIC Governments and other stakeholders
Climate Change-Induced Displacement of Pacific Island Communities: Developing policy and negotiation frameworks for vulnerable communities within the context of population growth, urbanization and the need for regional solutions	**United Nations Agencies:** UNDP, UNESCAP, UNFPA, UNHCR, UNICEF, UNOHCHR **Potential Partnerships:** AUSAID, CROP agencies, International Organisation for Migration, NZAID, Pacific Conference of Churches, PIC Governments, Pacific Humanitarian Team (coordinated by UNOCHA), PIFS
Community Climate Change Adaptation Pilots: As a basis for the development of case-studies, lessons learned and tools for building community resilience to climate change	**United Nations Agencies:** FAO, UNESCO, UNDP, UNICEF, UNISDR, UNV, WB, WHO **Potential Partnerships:** AUSAID, CSOs, CROP agencies, NZAID, PIC Governments
Climate Change Impacts on Health: Developing base-lines and adaptation measures to plan for and mitigate the impacts of climate change on population health	**United Nations Agencies:** UNAIDs, UNICEF, WHO **Potential Partnerships:** AUSAID, CROP agencies, Fiji School of Medicine, NZAID, PIC Governments
Climate Change Knowledge Management and Awareness Raising: Improving the understanding of climate change at the community level and through the mainstreaming of climate change into school curricula	**United Nations Agencies:** UNILO, UNDP, UNESCO, UNDP, UNESCO, UNISDR, UNV, WMO **Potential Partnerships:** AUSAID, NZAID, PIC Governments, SPC, SPREP, SOPAC, USP
United Nations Reduced Emissions from Deforestation and Degradation (REDD) Program Support: Supporting PICs to assess and where possible participate in the piloting of the United Nation's REDD programme	**United Nations Agencies:** FAO, GTZ, UNDP, UNEP, SPC, SPREP **Potential Partnerships:** AUSAID, Conservation International, FAO, GTZ, NZAID, PIC Governments, SPC, SPREP
Building Resilience to Climate Change through Adaptation and Disaster Risk Reduction at the Community Level: Integrating disaster risk management into community level adaptation initiatives through volunteerism and community driven initiatives	**United Nations Agencies:** UNOCHA, UNDP, UNICEF, UNISDR, UNV, WHO, WMO **Potential Partnerships:** AUSAID, CSOs, CROP agencies, ICRC, NZAID, PIC Governments, Pacific Humanitarian Team (coordinated by UNOCHA)
Assessing Vulnerability and Strengthening Tourism Sector Resilience to Climate Change: Mainstreaming climate change into the tourism sector	**United Nations Agencies:** UNILO, UNDP, WTO **Potential Partnerships:** AUSAID, CROP agencies, CSOs, NZAID, PIC Governments, South Pacific Tourism Organisation
Energy Efficiency Advocacy and Awareness Raising: Focusing on win-win mitigation initiatives that reduce poverty, greenhouse gases and reliance on imported fossil fuels	**United Nations Agencies:** ADB, UNDP, UNESCO, UNIDO, UNV **Potential Partnerships:** AUSAID, EU, NZAID, PIC Governments, SPC, SPREP,
Linking Food and Water Security: Delivering tangible short-term development outcomes and long-term resilience to climate change through improved food and water security	**United Nations Agencies:** FAO, IFAD, UNDP, UNICEF, UNV, WB, WHO **Potential Partnerships:** AUSAID, CROP agencies, NZAID
Linking the Impacts of Climate change on Pacific Livelihoods: Assessing the impacts of climate change on PIC livelihoods and major industries	**United Nations Agencies:** ADB, UNILO, UNDP, UNESCO, UNESCAP, UNIDO, WB **Potential Partnerships:** AUSAID CROP agencies, PIC Governments, Private Sector Partners

OPTIONS FOR DELIVERING CLIMATE CHANGE SUPPORT

21. Consolidated feedback from stakeholders suggest the following key findings and recommendations pertaining to potential aid delivery mechanisms to support PICs in their efforts to combat climate change:

i. ***Inter Agency Climate Change Centre (IACCC).*** While there is strong stakeholder agreement that the existing regional approach to climate change needs to be more collaborative, programmatic and effectively coordinated, there is limited support for the establishment of a physical United Nations Climate Change Centre. The majority of stakeholders stated their preference to see the UN System channel resources into supporting and improving the capacity and performance of existing regional organisations and coordination mechanisms such as *Secretariat for the Pacific Environment Programm*e (SPREP) and the *Pacific Climate Change Round Table* respectively. Stakeholder feedback indicated that the low level of support for the proposed IACCC may be attributable to the lack of a full pre-feasibility consultation process and limited circulation of the IACCC concept note. These factors appear to have contributed to the view by stakeholders that the IACCC would inherently comprise a large physical centre that could potentially duplicate and/or undermine the roles and mandates of existing CROP agencies. Clearly this was contrary to the intent of the IACCC which was envisaged to mobilize additional climate change funding for the Pacific, improve knowledge management and create opportunities for a more cohesive, programmatic approach to climate change by the UN System in the Pacific.

ii. ***United Nations Development Assistance Framework***. Internal UN stakeholder feedback indicates that the UN System should consider the establishment of a "*Climate Change Cross-Cutting Group"* under the United Nations Sub-Regional Development Assistance Framework (UNDAF) for the Pacific. This Group could serve to: (i) help coordinate UN System climate change initiatives within the Fiji and Samoa United Nations Country Teams, linking closely with the Papua New Guinea United Nations Country Team, PIC Governments, non-resident UN agencies and CROP agencies, (ii) ensure that climate change is systematically mainstreamed into all UN System policies and programming work, and within all activities under the four UNDAF Outcome Groups, (iii) provide support to the Pacific Climate Change Round Table mechanism, and (iv) potentially dovetail with the proposed Australian/SPREP "Climate Change Platform" to help improve overall stakeholder coordination and programme alignment. An important role of the Climate Change Cross-Cutting Group could be to streamline and strengthen communication links with UN System organisations such as UNEP and the UNFCCC to ensure that the Pacific's collective voice is heard strong and clear within global climate change fora. The Climate Change Cross-Cutting Group should be well resourced and have clearly defined (and achievable) outputs, and effective management and reporting structures that do not place unnecessary process-orientated workloads on the lead UN agencies and members.

iii. ***Climate Change Coordination.*** Close consideration should also be given to the idea mooted by the Secretariat of the Pacific Environment Programme (SPREP), for the placement there of a "United Nations Liaison Officer" to help align the work of UN System and CROP agencies, PICs and bilateral and multilateral development partners in the region. This Liaison Officer could be co-located and potentially dovetail into the proposed AusAID/CROP "Climate Change Platform", provide support to the Pacific Climate Change Round Table mechanism, and help integrate UN System interests and resources into knowledge management systems being developed by SPREP and other development partners. The Pacific Climate Change Round Table represents an established mechanism for the UN System, CROP agencies and other development partners, to come together to coordinate activities, share resources and expertise to support PICs in addressing climate change. It is therefore logical to strengthen the Pacific Climate Change Round Table as a formal stakeholder coordinating mechanism for the implementation of the *Pacific Islands Framework for Action on Climate Change* (PIFACC) that maintains strong linkages with the *Pacific Platform for Disaster Risk Management* and the *Pacific Regional Disaster Risk Management Framework for Action: 2005 - 2015* allowing for the discussion and coordination of climate change adaptation and disaster risk reduction activities at regional, national and community levels. Under such an approach development partner activities on climate change in the Pacific can be fully mapped-out, discussed and coordinated. Further substantive resourcing, clear division of labour, and a strongly collaborative approach amongst stakeholders including PIC Governments, CROPS, development partners and the UN System will be essential to ensure that the Pacific Climate Change Round Table is adequately equipped to meet the demanding role expected of it.

CONCLUSIONS

22. With burgeoning development activity in the field of climate change adaptation, this report is timely and demonstrates the commitment of the UN System to consult with PICs and other development partners to ensure that it adds value to the Pacific's efforts to address climate change. Stakeholder feedback clearly indicates that the UN System plays a vital role in tackling both the root causes and impacts of climate change in the Pacific. It is actively engaged in a multitude of development initiatives throughout the Pacific which aim to build the region's resilience to the multi-sector impacts of climate change and to improve the lives of Pacific Island communities. While stakeholder feedback indicates that there is widespread support for a greater level of UN System engagement on climate change in the Pacific, there was strong consensus that the UN System should look to closely partner with, and build the capacity of, existing regional organisations which are considered to hold the regional and political mandate to lead on climate change.

23. Although stakeholders widely agreed that there is a need to improve coordination, access to technical expertise and knowledge management within the UN System (and more broadly within the Pacific region) stakeholder feedback indicated a comparatively low level of support for the establishment of a physical UN System *Inter Agency Climate Change Centre* (IACCC) in the region. Furthermore, there is also a strong call from stakeholders to see the UN System continue its shift away from short-term, *ad hoc* project work to a more collaborative and programmatic approach to climate change, such as the United Nation's Sub-Regional Development Assistance Framework (UNDAF) (2008-2012) and the UN Country Programme (UNCP) for Papua New Guinea (2008-2012). This approach is seen to have the potential to introduce longer-term development initiatives that can contribute to the building and retention of indigenous capacity within the region.

24. While there is a multitude of climate change activities being carried out in the Pacific region, there is a strong call from PICs for development partners to implement "concrete" adaptation measures at the community level that focus on initiatives that deliver both short-term development outcomes and longer term resilience to climate change (e.g. food and water security, disaster risk management). Furthermore, there is a call for a holistic community-based approach to climate change adaptation and for the development of information tools and case-studies that can be used widely within the Pacific region by PIC Governments and communities alike. There is also strong justification for the continued UN System focus on sustainable energy initiatives that reduce PIC reliance on imported fuel products, and improve energy access to rural and vulnerable PIC communities. The impacts of climate change on the tourism, health and the agricultural sectors will also require the joint support of multiple development partners in the region. Furthermore, the integration of disaster risk management and disaster risk reduction into climate change adaptation initiatives, and the development of policy frameworks and contingency planning for communities facing displacement from rising sea-levels and exacerbating environmental conditions, warrant decisive and increased support from the UN System.

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Climate Change Bibliography

1. ADB (2009). "Climate Change Implementation Plan: Pacific Islands Region [2009-2015]". Mainstreaming Climate Change in ADB's Operations. Consultation Draft.
2. ADB (2003a). "Islands and Climate Change". DVD from ADB (Asian Development Bank),
3. Manila, the Philippines.
4. AusAID/DCC (2009) Information Sheet. International Climate Change Adaptation Initiative (ICCAI) & Workshop Notes. Novotel Brisbane, Australia 17-20 March 2009.
5. Barnett, J. (2007). "Food Security and Climate Change in the South Pacific." Pacific Ecologist Winter 2007: 32-36.
6. Caldeira, K. and M.E. Wickett. (2003). "Anthropogenic carbon and ocean pH". Nature, 425, 365.
7. Cazenave, A. and R.S. Nerem. (2004). "Present-day sea level change: observations and causes". Reviews of Geophysics, 42, RG3001.
8. CICERO (2008). "Project Design Outline for a Dynamic Assessment of Vulnerability and Adaptation to Climate Change in Small Island Developing States". Prepared by the Center for International Climate and Environmental Research, Oslo (CICERO), and UNEP/GRID. Arendal, with funding from the Norwegian Ministry of Foreign Affairs.
9. Connell, J. (2001). "An atoll state in peril". Tiempo, issue 42.
10. Easterling, W. E. et al. (2007). "Food, fibre and forest products". Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. O. F. C. M.L. Parry, J.P. Palutikof, P.J. van der Linden and C.E. Hanson. Cambridge, Cambridge University Press: 273-313.
11. European Commission (2007). "Building a Global Climate Change Alliance between the European Union and poor developing countries most vulnerable to climate change." Communication from the Commission to the Council and the European Parliament. Brussels, Commission of the European Communities.
12. FAO (2008). "Climate Change and Food Security in Pacific Island Countries". Rome, 266 pp.
13. FAO (2007). "An Assessment of the Impact of Climate Change on Agriculture and Food Security in the Pacific: a case study in Vanuatu." Unpublished consultancy report prepared for Food and Agricultural Organization (FAO) SAPA. February 2008. Samoa, Pacific Environment Consultants Limited.
14. FAO (2007). "Food Security and Sustainable Livelihood in the Pacific Island Countries". Report Brief for Food Security and Sustainable Livelihood Programme (FSSLP) in the Pacific Island Countries. Apia.

15. FAO (2008). “An Assessment of the Impact of Climate Change on Agriculture and Food Security in the Pacific: a case study in the Republic of the Marshall Islands”. Unpublished consultancy report prepared for Food and Agricultural Organization (FAO) SAPA. February 2008. Samoa, Pacific Environment Consultants Limited.
16. FAO (2008). “High Food Prices Issue in the Pacific Island Countries.” Apia, FAO Multi-Country Office.
17. Fiji Ministry of Tourism (2006). “Adaptation to Climate Change in the Tourism Sector in the Fiji Islands: Summary Report of the Initial Stakeholder Workshop.” Fiji Ministry of Tourism with the United Nations World Tourism Organisation and the United Nations Environment Programme, Suva, Fiji.
18. Ghina, F. (2003). “Sustainable Development In Small Island Developing States The Case Of The Maldives”. Environment, Development, and Sustainability, 5, 139-165.
19. Gilman E.L. et al (2006). “Adapting to Pacific Island mangrove responses to sea level rise and climate change.” Climate Research, Vol. 32: 161–176.
20. Hay, J. et al. (2003). “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”. Apia, South Pacific Regional Environment Programme.
21. IPCC FAR (2007). “IPCC Fourth Assessment Report.” IPCC (Intergovernmental Panel on Climate Change), Geneva, Switzerland.
22. IUCN (2008). Indigenous and Traditional Peoples and Climate Change. IUCN (International Union for Conservation of Nature), Gland, Switzerland.
23. Koshy, K. (2003). “Integrated Methods and Models for Assessing Coastal Vulnerability and Adaptation to Climate Change in Pacific Island Countries” (Jan-July 2003 Progress Report). Washington, DC, USA and Nairobi, Kenya: Assessments of Impacts and Adaptations to Climate Change (AIACC) in Multiple Regions and Sectors.
24. Lewis, J. (1982). “Natural Disaster Mitigation: Environmental Approaches in Tonga and Algeria”. The Environmentalist, 2(3), 233-246.
25. Lewis, J. (1989). “Sea-level Rise: Some Implications for Tuvalu”. Ambio, 18(8), 458-459.
26. Lewis, J. (1990). “The Vulnerability of Small Island States to Sea Level Rise: The Need for Holistic Strategies”. Disasters, 14(3), 241-248.
27. Mataki, M., K. Koshy, and V. Nair. (2006). “Implementing climate change adaptation in the Pacific islands: adapting to present climate variability and extreme weather events in Navua (Fiji).” AIACC Working Paper No. 34.
28. Mercer, J., D. Dominey-Howes, I. Kelman, and K. Lloyd. (2007). “The Potential for Combining Indigenous and Western Knowledge in Reducing Vulnerability to Environmental Hazards in Small Island Developing States”. Environmental Hazards, 7, 245-256.
29. Mimura, N., Nurse L., McLean, R.F., Agard, J., Briguglio L., Lefale, P., Payet, R. and Sem, G., (2007). “Small Islands”. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. O. F. C. M.L. Parry, J.P. Palutikof, P.J. van der Linden and C.E. Hanson. Cambridge, Cambridge University Press. 687-716.
30. NZCCO. (2001). “Climate Change Impacts on New Zealand.” Ref. ME396. NZCCO (New Zealand Climate Change Office), Ministry for the Environment, Wellington, New Zealand.
31. Nunn, P.D., R. Hunter-Anderson, M.T. Carson, F. Thomas, S. Ulm, and M.J. Rowland. 2007. “Times of Plenty, Times of Less: Last-Millennium Societal Disruption in the Pacific Basin”. Human Ecology, 35, 385-401.
32. Nurse, L., et al. (1998). “Small Island States.” The Regional Impacts of Climate change: An Assessment of Vulnerability. Special Report of IPCC Working Group II. M. Watson, M. Zinyowera and R. Moss. Cambridge, Cambridge University Press -Intergovernmental Panel on Climate Change (IPCC): 331 - 354.
33. NZAID (2008) “Pacific Regional Natural Resources and Disaster Management Programme (2008-2015).” Draft for External Consultation
34. Parks, B.C. and J.T. Roberts (2006). “Globalization, Vulnerability to Climate Change, and Perceived Injustice. Society and Natural Resources.” 19(4), 337-355.
35. Payet, R. (2003). “Assessment of Impacts of Climate Change on Tourism in Small Island States.” Based Upon Field Studies in Seychelles and Comoros (Jan-July 2003 Progress Report). Washington, DC, USA and Nairobi, Kenya: Assessments of Impacts and Adaptations to Climate Change (AIACC) in Multiple Regions and Sectors.
36. Pelling, M. and J.I. Uitto. (2001). “Small Island Developing States: Natural Disaster Vulnerability and Global Change”. Environmental Hazards, 3(2), 49-62.
37. PIFS (2005). “The Pacific Plan: For Strengthening Regional Cooperation and Integration”. Pacific Islands Forum Secretariat.
38. Preston, B. L., Suppiah, R., Macadam, I., and Bathols, J. (2006). “Climate Change in the Asia/Pacific Region: Climate Change Impacts and Risk.” CSIRO Marine and Atmospheric Research.
39. Ralston, H., B. Horstmann, and C. Holl. (2004). “Climate Change Challenges in Tuvalu”. Germanwatch, Bonn, Germany.
40. Royal Society. (2005). “Ocean acidification due to increasing atmospheric carbon dioxide.” Royal Society, London, UK.
41. SPREP (2005) “Pacific Islands Framework for Action on Climate Change (PIFACC).” Apia, Samoa, Secretariat of the Pacific Regional Environment Programme.
42. SPREP (2005/2008). “SPREP Fact-sheet: Pacific Climate Change PF003.” Apia, Samoa, Secretariat of the Pacific Regional Environment Programme.
43. SPREP (2008). “Pacific Climate Change Round-Table Report.” Apia, Samoa, Secretariat of the Pacific Regional Environment Programme.
44. SPREP/USP (2008). “Climate Change and Food Security in Pacific Island Countries.” Apia, Secretariat of the Pacific Regional Environment Programme & University of the South Pacific 17.
45. SPREP (2008) “Action Plan for the Implementation of the Pacific Islands Framework for Action on Climate Change.” Apia, Samoa, Secretariat of the Pacific Regional Environment Programme.
46. Stern, N. (2007). “How Climate Change Will Affect People Around the World.” The Economics of Climate Change: The Stern Review Cambridge, Cambridge University Press. : 65-103.
47. Taeuea, T., N. de Wet, and G. Kenny (eds.) (2000). “Climate Change Vulnerability and Adaptation Assessment for Kiribati.” Kiribati Pacific Island Climate Change Assistance Programme, Government of Kiribati, Tarawa, Kiribati and International Global Change Institute, Waikato University, Hamilton, New Zealand.
48. Tompkins, E.L. et al. (2005). “Surviving Climate Change in Small Islands. A Guidebook.” Tyndall Centre for Climate Change Research, Norwich, UK.
49. UNCEB (2008/2009) “Acting on Climate Change: The United Nations System Delivering as One.” United Nations System report available at http://www.un.org/climatechange

50. UNDAF (2007) United Nations Development Assistance Framework for the Pacific Subregion. Prepared by the United Nations Development System based in Fiji and Samoa.
51. UNDP (2002). "A Climate Risk Management Approach to Disaster Reduction and Adaptation to Climate Change." UNDP Expert Group Meeting Integrating Disaster Reduction with Adaptation to Climate Change. Havana.
52. UNDP (2007). "Climate Shocks: Risk and Vulnerability in an Unequal World". Human Development Report 2007/2008. Fighting Climate Change: Human Solidarity in a Divided World. New York, United Nations Development Program. Palgrave Macmillan: 73-107
53. UNDP (2008). "Climate Change at UNDP: Scaling Up to Meet the Challenge." (Working Paper for Internal Discussion)
54. UNDP Pacific Centre (2009). "The Gendered Dimensions of Disaster Risk Management and Adaptation to Climate Change: Stories from the Pacific". Suva.
55. UNDG (2009) "Climate Change Actions Undertaken by United Nations Country Teams". A United Nations Development Group Study by the Working Group on Programming Issues – Task Team on Environment Sustainability and Climate Change. Advanced Draft 18 April 2009.
56. UNEP/UNAIDS (2008). "Climate Change and AIDS: A Joint Working Paper."
57. UNFCCC (2007). "Uniting On Climate Change."
58. UNFCCC (2007). "Vulnerability and Adaptation to Climate Change in Small Island Developing States." Expert meeting on adaptation for Small Island Developing States, Jamaica. New York, United Nations Framework Convention on Climate Change (UNFCCC)
59. UNFCCC. (1992). "United Nations Framework Convention on Climate Change." Document FCCC/INFORMAL/84 GE.05-62220 (E) 200705.
60. United Nations (2005). "Draft Mauritius Strategy for the further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States." Document A/CONF.207/CRP.7 (13 January 2005) from the International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, United Nations (United Nations), Port Louis, Mauritius, 10-14 January 2005.
61. UNDP (2003). "SIDS Workshop on Insurance and Climate-Related Extreme Weather Events." Workshop Report, Final, 28 November 2003, Fondazione Eni Enrico Mattei (FEEM) Corso Magenta Milan, Italy.
62. UNFCCC (2005). "Climate Change, Small Island Developing States." UNFCCC (United Nations Framework Convention on Climate Change), Bonn, Germany.
63. UNFCCC. (2007). "Report on the expert meeting on adaptation for small island developing States." Subsidiary Body for Implementation (SBI). Twenty-sixth Session, Bonn, 7-18 May 2007.
64. UNICEF (2008). "Situation Reporting: Food Price Increases/nutrition Security in the Pacific Islands." Suva, Fiji, UNICEF Pacific.
65. UNISDR (2008). "UNISDR Briefing Note: Climate Change and Disaster Risk Reduction"
66. UNISDR (2008). "Global Assessment Report on Disaster Risk Reduction – Risk and Poverty in a Changing Climate" (http://www.preventionweb.net/english/hyogo/gar/report/index.php?id=9413&pid:34&pil:1)
67. UNISDR (2008). " ISDR system views on progress in adaptation" (http://www.unisdr.org/eng/risk-reduction/climate-change/docs/ISDR_System_Submission_SBI_Adaptation.pdf)
68. WWF (Unspecified) "Climate Witness: Community Toolkit." WWF South Pacific Programme Regional Office, Suva, Fiji.
69. World Bank (2005). "Regional Engagement Framework FY2006-2009 for Pacific Islands." Washington DC, IBRD and IDA. Papua New Guinea, Pacific Islands and Timor-Leste Country Unit East Asia and Pacific Region.