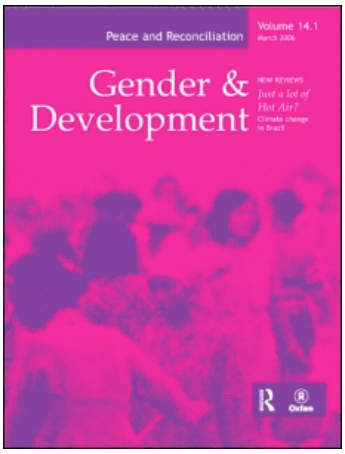

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Building gendered approaches to adaptation in the Pacific

Ruth Lane and Rebecca McNaught

This article reflects upon how gendered approaches to climate-change adaptation can be strengthened in the Pacific region. The article looks at what has been learnt in the region, surveys some examples of best practice in gender-responsive programming, identifies the challenges we face on our journey, and suggests future directions. It is a collaborative effort, comprising input from a number of agencies who have been proactive in the areas of gender, climate change, and disaster risk-reduction in the Pacific Region, including: the Red Cross/Red Crescent Movement in the Pacific region; the UNDP Pacific Centre; and World Wildlife Fund's (WWF) Fiji Country Programme.

Key words: disaster; risk reduction; climate change; Pacific; gender; community; vulnerability

The Pacific context

It is only recently that gender perspectives on climate change have become a blip on the radar of many Pacific island governments, donors, and development partners in the region. In February 2008 at the 52nd Commission on the Status of Women, during the Interactive Expert Panel on the theme 'gender and climate change', a delegation of leaders from Pacific island governments and civil society made an intervention. In it, they recognised that despite the significant contribution made by Pacific island women to the informal economy, particularly in agriculture, fisheries, and micro-enterprises, the nexus between gender and climate change in the Pacific has not gained much traction. During the intervention, Hon. Amberoti Nikora, Minister for Internal & Social Affairs in Kiribati asserted:

> *Adaptation efforts should address the gender specific impacts of climate change in the areas of energy, water, food security, agriculture and fisheries, biodiversity and eco-system services, health, industry, human settlements, disaster management and conflict and security. It is also important to take into account women's specific priorities and needs and to make full use of their traditional knowledge and practices in the development of new technology to address climate change.*

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There are, in fact, already a number of agencies working in the Pacific to do just this. Nonetheless, the intervention at the Panel represents a considerable step forward in demonstrating high-level commitment to addressing these issues in the Pacific. It has created an opportunity for climate-change practitioners to work with practitioners from a range of sectors, including disaster risk-management, environment, agriculture, fisheries, health, and poverty reduction, to raise awareness of the cross-cutting nature of climate change, and to build further momentum in the development of policy to guide practice in climate-change adaptation in these sectors.

Climate vulnerability in the Pacific region

The Pacific region is a vast area, consisting of clusters of small islands and atolls. The 26 independent states and territories within these 30 million square kilometres of ocean are geographically and ethnically diverse, with very varied ecosystems and animal and plant species. The Pacific region has limited land. Its relatively small population of 8.5 million lives mostly in coastal areas, where its infrastructure and developing industries can mainly be found. Agriculture and fishing are the largest sources of national income in the region, followed by mineral mining, timber, and tourism. In the region, subsistence economies still predominate, but monetary economies exist by their side. Protecting and managing natural resources in the region is, therefore, crucial (ADB 2004). Notably, all of these characteristics make the Pacific islands and their cultures extremely vulnerable to the impacts of disasters and climate change (*ibid.*; Mimura *et al.* 2007; UNDP and AusAID 2008).

The Fourth Assessment Report released by the Inter-governmental Panel on Climate Change predicts that climate change is likely to have a number of different forms of impact for the islands of the Pacific. These include a rise in sea level; soil and groundwater salinisation; increasing sea-surface temperature; more extreme rainfall patterns; and higher temperature trends. Climate risk profiles generated by the Asian Development Bank for the Federated States of Micronesia and the Cook Islands predict that rare extreme weather conditions or events will become relatively common as a result of global warming (Hay *et al.* 2004).

Many of these phenomena are already evident in the Pacific. Increased frequency of El Niño events is resulting in drought, flood, and an increase in the frequency and intensity of cyclone activity in some parts of the Pacific (Bettencourt *et al.* 2003; Mimura *et al.* 2007). In addition, some countries are already experiencing changes in rainfall patterns. For example, the Tuvalu Meteorological office has recorded a decline in rainfall over the past 30 years. Sea gauges located in the Pacific are recording high sea level more frequently, and the actual levels recorded are getting higher, in countries such as Tuvalu, Solomon Islands, Tonga, and the Cook Islands (Hall 2008). In the Cook Islands, the Meteorological Service has found that drought is becoming more common, and temperatures are rising in the country. There are also more cyclones in recent

seasons compared with past periods (Cook Islands Red Cross 2008). In the Republic of the Marshal Islands, some outlying islands in Vanuatu, and parts of Papua New Guinea, salt-water intrusion into fertile soil as a result of storm surges has threatened the agricultural subsistence of communities, making them more dependent on imported foods, and significantly reducing the variety of food available to them (IFRC 2002). Despite the best efforts to reduce greenhouse-gas emissions globally it is clear that we are locked into further changes and impacts in the region over the coming decades. These impacts ultimately affect the livelihoods of communities, households, and individuals and their ability to cope with and adapt to the impacts of climate change and disaster events.

Recognising the value of gendered local knowledge

Despite the vulnerability of Pacific islands to disaster, research shows that men and women of Pacific island communities have been successfully using their knowledge of their environments to mitigate disasters for generations. They have done this through a variety of traditional practices that have been maintained through informal education across generations. These include food preservation, housing construction, traditional systems of exchange, and most importantly the management of their natural resource base (Campbell 2006). For example, Anderson (2002) notes that during a drought on the island of Yap in the Federated States of Micronesia, local women who knew about hydrology as a result of working the land found potable water by digging a new well that reached fresh water. Gendered divisions of labour in non-disaster or normal times inform the way and extent to which communities can adapt to extreme climatic events. Local gender-specific knowledge must be recognised; it can contribute much to furthering the existing body of knowledge on climate change, as many communities across the Pacific are already witnessing and adapting to changes that are affecting their livelihoods.

Drawing from field experiences and recognising the strong links between the community on Kabara Island and their natural resources, staff from WWF's Fiji office describe the value of utilising participatory processes to draw out local knowledge:

> *Mapping exercises are a versatile and powerful tool for representing information and spatial distribution of community knowledge, including traditional boundaries, agricultural areas and fishing grounds. Maps are also a useful tool in aiding the community to develop, record, organise and present spatial information about their surroundings. In this context, women seem to describe better, subtle details regarding the timeline of noticeable changes on the reef including coral bleaching, the spawning period of certain fish species, algal blooms and related ciguatera fish poisoning incidences and the extent of the dry and rainy periods. While men are better at contributing to outlining the larger features of the mapping such as boundaries and physical features that are of direct significance to their planting and fishing on the outer slope of the reef fringing Kabara Island. In contrast to the women, men were unable to provide details of*

subtle changes to the reef. In addition, the women's group were more involved as a group in determining and agreeing on the extent of the last rainy period.

As part of WWF Fiji's climate-change awareness community outreach, the information derived from the mapping exercises has been used as baseline data. They can use it to explore further the significance of changes in the local environment, and relate these to climate change. In collaboration with the Fiji Meteorological Service, which has provided valuable information on air temperature and rainfall trends for Kabara (Lau region), WWF has been able to show that changes identified by the community coincide with a long dry period. In addition, the organisation has been able to determine that the Kabara community can expect even less rain and longer dry periods, making it necessary for community members to identify suitable adaptation options as a matter of priority.

Responding to the impact of climate change

Local knowledge about climate change, and ways of adapting to it, are not static. Rather, people's knowledge and responses can change over time. In some cases, particular ways of adapting can diminish in effectiveness, as a result of development processes, movement of people to urban areas, and the worsening pressures of environmental degradation and climate change (Anderson 2008).

For example, in the Solomon Islands where the role of the community or village priest is traditionally a male role, the Solomon Islands Red Cross (2008) reports that a traditional priest from the Sogabiri tribe of Simbo in the Solomon Islands used to be able to predict when, and for how long, a strong wind would occur in the tribe's area. This wind, known locally as *komburu*, normally occurred from December to May each year. The priest used to be able to determine when the winds would start by observing whether or not the nuts from *ngali* trees had all fallen to the ground. When they had, the winds would begin. He would also determine the intensity and duration of the winds, by observing the fallen leaves of the native *rarapo* tree. When and where the leaves of the tree fell in relation to the tree and the village would help determine how long the winds were likely to last. Today, as a result of the changing climate, the priest has difficulty trying to determine when *komburu* will come, and how long it will last.

Local warning systems, such as this one, based on local and often gender-specific knowledge of the environment, have enabled Pacific island communities to prepare for extreme weather events for generations. In February 2008, the UNDP Pacific Centre and AusAID jointly sponsored a regional forum on the 'Gendered Dimensions of Climate Change and Disaster Risk Reduction in the Pacific'. The forum, which was held in Suva, brought together practitioners from the fields of natural resource management, disaster risk-management, and climate change, to explore and share gender issues in relation to these fields, to identify gaps in practice and research,

best practices, and lessons learned, and to initiate an ongoing dialogue among stakeholders.

During the forum, there were many discussions about the fact that traditional systems for early warning are becoming less effective, as a result of climate change. Participants at the Suva forum agreed that while the verification of local knowledge through climate forecasting is important, work also needs be done on making technical weather-related information relevant to the different roles that men and women play in their communities (UNDP and AusAID 2008). For example, the Samoa Red Cross has been proactive in working in partnership with the Samoan Meteorological Office and local communities, turning climate forecasts in technical language into easy-to-understand messages in the local language (Wolf 2008). Other initiatives have included work undertaken by the Red Cross/Red Crescent Centre on Climate Change and Disaster Preparedness in co-operation with the South Pacific Regional Environment Programme (SPREP). A series of posters has been designed for Fiji, Tonga, the Solomon Islands, Samoa, Vanuatu, Kiribati, and Papua New Guinea, which convey messages about the connections between climate change and human development processes, due to changes to the natural resources on which communities depend. These posters have been specifically designed with the input of communities, in order to make them really useful to target communities. They provide practical examples of what communities can do to address the different effects of climate change. By their existence, they demonstrate the opportunities which exist for 'community to community' communication. Community-awareness initiatives of this sort can enhance popular understanding of the implications of future climate change for the everyday activities of men and women, and this in turn can inform the way people prepare for, adapt to, and cope with these changes.

Learning from gender roles in community-based disaster management

Understanding gendered divisions of labour within Pacific island communities can assist in providing a more in-depth understanding of changes to climate and environment. It can also provide a useful entry point for harnessing the specialised knowledge held by men and women in developing strategies for adapting to climate change. Given the linkages between climate change and increased instance of disaster in the Pacific region, adaptation practitioners can also learn much from research undertaken by practitioners in disaster risk-management in the Pacific. A regional study undertaken in four Pacific island countries by the South Pacific Disaster Risk Program in 2002 found that men and women in Fiji, Samoa, the Solomon Islands, and Kiribati play distinct roles in preparing for disasters. In all four countries, women were more likely to be responsible for the practical preparation of households, including informing family members, storing food and water, and protecting family belongings, while men were found to be responsible for liaising with government administrators,

preparing the outside of buildings, making decisions about evacuation sites and timing, managing water sources, distributing emergency relief, and receiving and disseminating early warnings to the wider community (SPDRP 2002).

In a more recent case study undertaken in two communities on Ambae Island, Vanuatu, women's focus-group discussions, undertaken separately from those with men, raised concerns about the fact that the bulk of decision-making in relation to resource allocation following disasters was being carried out by men. Further, there was concern that decisions made by men at the household and community level were not always fair, and most commonly did not involve women (Cronin *et al.* 2004). Concerns were also expressed by the women's focus groups that men were not very efficient in warning women in time for them to prepare adequately, and this made households more vulnerable to loss in the face of disaster (*ibid.*). Similar preliminary findings came from a Vulnerability and Capacity Assessment conducted by Fiji Red Cross, and UNDP's Pacific Centre in the Navua region, on the island of Viti Levu, Fiji. Stephanie Zoll (2008), a United Nations Volunteer working with the UNDP Pacific Centre, says focus-group discussions with women revealed that while there are active women's groups in the region, they have very little role in decision-making processes regarding development. Stephanie notes that this also reflects the employment patterns in the community in many ways. Women are largely confined to the village, while men travel to peri-urban areas to work: this influences the kinds of information that women and men are able to access. Stephanie also found that, during the floods which occur regularly in the region, women, who were less likely to know how to swim than men, sometimes remained in their houses to circulate flood waters, in order to prevent mud from settling into their houses. Finally, women were most likely to be solely responsible for child care during flooding. As Stephanie notes, the gendered roles of these women have obvious implications for both their own safety and that of their children.

The above examples clearly show that gender roles in disasters lead to gendered effects. These are both shaped by, and shape, relationships of power and influence between men and women in Pacific island communities (SPDRP 2002). The examples also clearly demonstrate the dangers of assuming that distinct and separate gender roles are always beneficial to all sectors of the community. While gender roles may be complementary, and may allow communities to adapt more efficiently to climate risk, there are also instances where gender roles may foster inequality, including inequality in access to early warning information and vital resources, and unequal decision-making.

These examples build a clear case for practitioners to undertake further analysis of gender roles, to facilitate better understandings of how inequalities between men and women can contribute to gendered vulnerabilities and ultimately impact upon a community's ability to become more resilient to the impacts of climate change.

Community-based risk reduction

Gender analysis requires development practitioners to work closely with both men and women, to gain understanding of existing gender relations and social systems, in order to address gendered vulnerabilities and inequalities.

One way of achieving this is by using research methods in which women and men participate. Examples are WWF's Climate Witness Community Toolbox, and the International Federation of Red Cross and Red Crescent Societies' Vulnerability Capacity Assessment Toolbox.[1] These toolboxes promote a variety of participatory activities, such as hazard mapping, seasonal calendars, event timelines, and transect walks, aiming to assist communities in identifying the climate risks to which they are exposed. In the context of its work with the community in Kabara, WWF found that community participatory learning and action techniques can be very useful for identifying specialised knowledge held by the men and women regarding the impacts of climate change on their community; collecting gender-disaggregated data that captures how men and women are affected differently by extreme climatic events, and have different perceptions of risk (Patt *et al.* forthcoming); and planning ways in which natural resources can best be used. Furthermore, WWF has noted that use of some techniques, such as community resource mapping, assisted in drawing out the different knowledge held by men, women, and young people of each sex, on Kabara Island.

However, donors and practitioners should be wary of imposing mainstreaming agendas upon communities, and of trying to address perceived gender inequalities in a top-down way. As participatory processes are tools which enable practitioners to let communities drive issues and processes, they will be less effective if practitioners have predetermined the outcomes they wish to achieve.

Even though a particular participatory method may not have been designed for use in a gender-sensitive way, this does not stop it being adapted for this purpose. Shortly after conducting a vulnerability and capacity assessment (VCA) in the Navua Region of Fiji recently, Stephanie Zoll from the UNDP Pacific Centre reflected that the timing of a VCA needs to suit the schedules of both the men and women you wish to target, so it doesn't become a burden (Zoll 2008). This way, men and women can participate freely without pressure of competing priorities. She also noted that it might be useful to have separate focus groups for men and women, particularly if you are looking at gender impacts and differences, as men and women have different perceptions of risk, resources, and needs. Cultural norms might prevent men and women from speaking freely in each other's presence, so you might miss these if everyone is in the same group. It is also important to give people the space to talk.

'Gender-sensitising' participatory approaches in this way may give practitioners a better understanding of existing gender relations and social systems. Using these as

entry points is more likely to result in sustainable and positive changes to behaviour and attitudes, which will reduce women's vulnerabilities to climate change, over time. Such an approach can underpin disaster-preparedness programmes, to ensure that these do not inadvertently discriminate against some groups by dispensing resources and information in ways which are harder for them to access.

Human health and security

There are many different ways in which rising temperatures, more intense heat waves, droughts, increased rainfall, floods, and cyclones affect human health in the Pacific region. Floods and cyclones damage vital buildings, such as hospitals and clinics, and injuries and illness caused by extreme weather place pressure on health systems which are already under-resourced. Other effects come about indirectly: for example, the availability and quality of water is affected by a warming and more variable climate, and this not only affects sanitation, but also agricultural production and ultimately nutrition, as well as increasing the risk of transmission by insects and water (McMichael *et al*. 2002; McNaught and Morse 2007). For example, between 1975 and 1995 the annual number of dengue epidemics in the South Pacific rose in correlation with warmer and wetter weather in many countries, as a result of La Niña (WHO 2008).

So disasters can affect human health and security indirectly, and this may in turn hamper the ability of communities to cope with – and recover from – the effects of climate change. For example, it is well-documented globally that women and children are at more risk of sexual abuse during disaster times when compared with non-disaster periods (Weist *et al.* 1994; Byrne and Baden 1995). A study undertaken by the Fiji Red Cross on the relationship between HIV and disaster supports this finding. In addition, the study also made some interesting findings on possible links between exposure to disasters and increased incidence of HIV, AIDS, and sexually transmitted infections (STIs). Results from the study revealed that 83 per cent of respondents had lived through a disaster in the past five years. In addition, the study found that condom use during a disaster was significantly lower than at other times, leading to a raised risk of HIV and STIs. Respondents had less access to condoms during a disaster, and there was a sharp increase in risk-taking behaviour immediately following a disaster. In order to address these issues, the Fiji Red Cross has integrated them into a holistic response package that includes addressing community safety in shelters as well as disseminating condoms and safe-sex messages during and immediately after disasters in a culturally appropriate way (Fiji Red Cross 2004).

Is it really all just about climate change? Men and women as agents of change

The relationship between climate and society is dynamic. Variations in climatic conditions and climate change may have multiple, simultaneous effects. Their effects on women, men, and their households are determined by the ways in which they interact with a range of other factors, such as environmental degradation, development, and urbanisation. All these combine in their effect on communities.

For example, Tikina Wai district is on the dry leeward side of Viti Levi, a volcanic island in Fiji. There is a high level of development for tourism in Tikina Wai. A significant proportion of the area's population lives in low-lying areas, and it is here that most of the physical infrastructure, and the prime agricultural land, can be found. All of these factors make Tikina Wai vulnerable to various effects of climate change, including prolonged rainfall, drought, storm surges, and rises in sea level (WWF 2004). During WWF Fiji's initial engagement with the community six years ago, it was found that mangroves along the coastline of Tikina Wai had been significantly depleted because of people's need to make a livelihood, and to follow traditional cultural practices. Mangroves had been cut down for firewood (generally by men), and bark had been stripped off others (generally by women) to produce *tapa*, a local paper cloth used regularly in Fijian traditional ceremonies. Women also fished in the mangrove swamps, mainly for food for the family. Since the major ecological function of mangroves is to provide a nursery for juvenile fish, the unsustainable use of mangroves by the community was slowly causing changes to the ecosystem that would eventually cause a general decline in the availability of fish. In addition, as mangroves provide natural protection against coastal flooding, storm surges, and cyclones, the decline in the number of mangroves that line the coast exposed the outlying coastal villages to a big risk from the elements, and the effects of climate change. The mangroves are the only natural barrier protecting the area and the people who live in it from the risk of coastal inundation and potential rises in sea level.

In order to address this, WWF has worked with the coastal communities to raise awareness of the importance of the mangroves in providing communities with protection from the impacts of climate change. Using participatory approaches, WWF continues to engage with the district community (a total of six villages) to identify ways of protecting the mangroves, and ways of integrating mangrove conservation into development for the areas. Initially, three mangrove areas making up 20 per cent of the communities' fishing area were identified and reserved for protection. This included fishing being banned within these areas. These protected areas were chosen in close consultation with the community on the basis of key biological information such as the location of fish-spawning sites, and giving consideration to the community's need to be able to continue fishing for income and subsistence. Currently, boundaries around the mangroves are being marked, in

recognition both of their ecological value, and more importantly the livelihood value of the area as the district's fishing ground. Parallel to this activity, a community-initiated eco-tour of their mangrove areas is being established as part of the overall district development plans. These government-led plans, which include considerable community input, will guide the district representative and council in strategically expressing the community's needs to the provincial and national levels. Simultaneously, WWF Fiji worked with the women of the district to identify debarking techniques that are less harmful to the mangroves, so that the community can continue to use the mangroves to make *tapa*.

This case study demonstrates a multi-faceted approach to reducing risk that includes building community resilience to the adverse impacts of climate change, as well as addressing food security and economic development by capitalising on the district's location and cultural/aesthetic value for sustainable tourism.

WWF notes that while the majority of the decision-making is conducted by the male elders during the open community sessions, it is women and male and female youth who most actively work with WWF in the field to conduct coral-reef or seagrass habitat surveys. In addition, WWF notes that women generally use other opportunities to voice their concerns, such as while out in the field or while at the communal cooking area.

WWF's project in Tikina Wai demonstrates that the nexus between gender and climate change is complex, and that gendered vulnerabilities should not be oversimplified by assuming a simple two-way relationship. In Tikina Wai, the entire community is not just vulnerable because of the impacts of climate change; it is also vulnerable as a result of the adoption of patterns of natural resource use arising from gendered roles in the community. WWF's work with the Tikina Wai community demonstrates that the development and implementation of successful strategies to address community vulnerability often depend upon the complementary roles of men and women that require them to work together in partnership to ensure sustainability. It also demonstrates that strategies are more likely to be successful when there is an understanding of gendered roles prior to determining natural resource usage, as this can greatly assist in securing and improving livelihoods and food security. Therefore, gendered vulnerabilities and capacities must be contextualised and analysed in relation to a broad range of factors. This will assist practitioners in working with communities to identify appropriate strategies for adaptation that do not victimise the people who they hope will benefit from the project, but rather place them at the centre of change.

Ways forward

Experiences from the Pacific clearly show that efforts to work with communities to generate gender-sensitive responses to and strategies for addressing climate change

are more successful when they involve a number of responses from a number of partners. It is also vital that these multi-stakeholder responses be well co-ordinated. Success also depends on recognition that climate change is a dynamic process, and that the men and women of the Pacific are not victims of climate change, but active agents. Through their own gendered knowledge and actions, individuals, households, and communities can exacerbate or minimise the likely impact of extreme weather. Development practitioners therefore need to understand this fact themselves and develop the confidence of people at community level to meet the challenges that climate change represents. In cases where people's efforts to earn a living are aggravating the negative effects of climate change, development practitioners can assist communities to identify and develop alternative approaches. Adaptation strategies will only be sustainable if men and women are able to provide for their everyday needs. Participatory methods and gender analysis are both empowering tools that can help communities identify their own capacities, as well as suitable adaptation strategies that respond to the needs of men, women, boys and girls. It may also be achieved by strengthening existing partnerships between communities, meteorological services, development practitioners who specialise in the areas of climate change and disaster risk-reduction, and the wider development community. This would have the dual advantage of enhancing shared understanding of the risks posed by climate change, and widening the spectrum of adaptation options available to address vulnerabilities.

In the Pacific region, there are already a number of gender-responsive programmes that fit under the broad agenda of climate-change adaptation, in fields such as coastal protection, agriculture, and fisheries. It is vital that practitioners from the fields of climate-change adaptation and disaster risk-reduction who are committed to developing gender-responsive programmes make these linkages explicit for all development practitioners through advocacy, awareness, and action. It is also essential that best practice, and lessons learned on gender-responsive programming, are widely shared across relevant sectors. Climate change and gender inequality are both currently receiving unprecedented attention both globally and in our own backyard, and it is vital we seize this moment.

Ruth Lane has been working in the Pacific on disaster risk-reduction issues for over three years. Currently she holds the position of Pacific Regional Disaster Risk Reduction Delegate for the International Federation of the Red Cross and Red Crescent Societies, based in Suva, Fiji. In this capacity Ruth provides support to 15 national societies in the Pacific region on disaster risk-reduction (including adaptation to climate change) initiatives. Postal address: PO Box 2507, Government Buildings, Suva, Fiji. Email: Ruth.lane@ifrc.org

Rebecca McNaught is a Senior Programme Office for the Red Cross/Red Crescent Climate Centre. In this capacity Rebecca provides support to the Federation and Red Cross National Societies in the

Asia/Pacific Region by raising awareness of and advocating for Red Cross work on climate change at the regional and global levels and by providing advice on the development and implementation of initiatives focusing on adaptation to climate change. Rebecca has over three years experience working in the Pacific on adaptation to climate change and disaster risk-reduction. Postal address: C/O Australian Red Cross, 155 Pelham St, Carlton Victoria 3053, Australia. Email: mcnaught@climatecentre.org

Note

1 Further information regarding these tool boxes may be found at www.ifrc.org/what/disasters/resources/publications.asp and www.wwfpacific.org.fj/what_we_do/climate_change/index.cfm, respectively (last accessed November 2008).

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