

**Rural Community Adaptation to
Climate Change in Australasia
Issue Paper for The Arkleton Trust**

Julia Gottwald

Hamburg University of Applied Sciences

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1. Introduction

Communities on islands in the in Australasia are severely affected by the impact of climate change. In particular, the rising sea levels pose major problems, such as the erosion of costal lines, salination of ground/drinking water, and in some cases to the loss of the complete islands. Even if global efforts to reduce CO₂ emissions will eventually succeed, it will be too late for many small island states. For example, the Cartaret Islands (Papua New Guinea/ autonomous region of Bougainville), is world wide the first region that is forced to start the evacuation of their citizens in 2009 and it is expected that by 2015 all islands will be inhabitable. Here local communities have tried without success to fight against the impacts of raising sea levels for the past 10 years, however, now without financial support they have to find a new place to live and to finance their exodus.

The problems faced by small islands in the Pacific are of a similar nature. The resources (both in terms of finance and knowledge/technical capacity) available to understand and react to climate change differ widely between small developing island states and islands belonging to the developed countries Australia and New Zealand.

For human society in general, adaptation to climate change can be seen from two perspectives: to mitigate or neutralise the impacts of climate change so that the existing life styles can be kept (e.g. higher dams to avoid flooding due to rising-sea levels) and to adjust way of living according to the new climate conditions (e.g. change of crops or livestock, change of building design or in the extreme migration to other regions).

In the context of rural communities and in particular in developing or low income countries the following aspects of adaptation to climate change are of major importance. In most cases, rural communities in developing countries have contributed very little to global climate change, nevertheless they are the ones affected most severely by its impacts. In addition, financial resources, technical capacity and knowledge for designing and implementing mitigation measure are scarcely available unless depending on support from developed countries. However, indigenous people over the world have been living in all kinds of climatic conditions. In many cases the new climatic conditions caused by climate change are new for each regional community, however, other places of the world people manage to live in such climatic condition for hundreds of years. The exchange of such knowledge and experiences offers a vast potential for CC adaptation strategies that are suitable for rural and less developed regions.

As part of the Arkleton Trust's theme of 'Rural Community Adaptation to Climate Change' existing initiatives and projects related to adaptation to climate change in rural areas in Australasia with specific focus on the small pacific islands states have been identified and analysed. This issue paper will provide a short overview on the impact of climate change in Australasian island states and the international, regional, national and local response to it. Moreover, this report analyses the different categories of adaption initiatives and illustrates them with some examples. Also this report highlights specific themes that seem to be most relevant for the context of communities in Australasia and suggests some lessons learnt that might also be relevant for implementing climate change initiatives in rural communities in other regions of the world.

2. Impact of Climate Change in Australasia

The islands in the south pacific differ geographically, including atoll as well as volcanic islands and accordingly the impact of climate change and the adaptation needs differ. A differentiated description of climate change impacts would be beyond the scope of this report, therefore this section will only provide a short overview of a number of common problems that apply to most islands.

Apart from rising sea levels, climate change is expected to cause a higher frequency and higher intensity of natural hazards such as cyclones, storm surges, inundation and draughts on the small island states in the South Pacific. Most inhabitants of the island states live in a subsistence life style based on agriculture and fishing. For example, in Solomon Islands 84% of the population lives in rural areas and 85% of these are dependent on subsistence agriculture and fishery¹; in Kiribati only about 12% of the citizens are employed². Therefore, the impact of the natural hazards on the fertility of agricultural land as well as on fish is vital importance for the survival of the inhabitants.

One major problem is the supply of potable water. Most islands depend on rain water and fresh water lenses. On one side changing weather patterns including longer draughts periods lead to lesser perception, on the other side rising sea levels are salinating ground water lenses.

The available agricultural land is constantly decreasing. This is caused on one side directly by the coastal erosion, but also by the salination of low lying lands. Many plants are very sensitive to salt water and thus no longer grow and be cultivated here. This is causing a major problem for island states that do not have larger or high rising land in their territory for alternative land for agriculture and settlements. Other plants are very sensitive to changes in rainfall or groundwater. The degradation of coastal vegetation is putting additional strain on the coastal areas as these plants can no longer serve as a protection against the sea.

Climate Change is also affecting the marine habitats. Coastal fishery is affected by coastal erosion, sedimentation and higher sea temperatures which combined with overfishing due to increased coastal population and lack of alternative food supplies leading to a reduced fish-stock. In this context further degradation of coral reefs is not only expected to lead to a further reduction of fish stock but also leads to a reduced protection of the shoreline.

¹ Ministry of Environment, Conservation and Meterology Honiara (2008) *Solomon Islands National Adaptation Programmes of Action*

² Ministry of Environment, Land, and Agrigultural Development Government of Kiribati (2007) *Republic of Kiribati National Adaptation Programmes of Action, p. 1*

3. International, regional, national and local response to Climate Change in Australasia

There is a large awareness on policy level about the effects of climate change on south pacific island states and accordingly there are several efforts to respond to climate change on international, regional national and local level.

Box 4: The national adaptation programme of action (NAPA)

In order to address the urgent adaptation needs of LDCs, a new approach was needed that would focus on enhancing adaptive capacity to climate variability, which itself would help address the adverse effects of climate change. The NAPA takes into account existing coping strategies at the grassroots level, and builds upon that to identify priority activities, rather than focusing on scenario-based modeling to assess future vulnerability and long-term policy at state level. In the NAPA process, prominence is given to community-level input as an important source of information, recognizing that grassroots communities are the main stakeholders. NAPAs provide a process for LDCs to identify priority activities that respond to their urgent and immediate needs with regard to adaptation to climate change. The rationale for NAPAs rests on the limited ability of LDCs to adapt to the adverse effects of climate change. The NAPAs focus on urgent and immediate needs - those for which further delay could increase vulnerability or lead to increased costs at a later stage. NAPAs are designed to use existing information; and no new research is needed. They must be action-oriented and country-driven and be flexible and based on national circumstances. Finally, in order to effectively address urgent and immediate adaptation needs, NAPA documents should be presented in a simple format, easily understood both by policy-level decision-makers and by the public.³

United Nations Framework Convention on Climate Change (UNFCCC)

The international community is aware that the urgent need to adapt to climate change poses additional strains to low income countries. Accordingly, climate change adaption has become a prominent theme of bilateral developing aid (e.g. USAid, NZAid, AUSAid, EuropeAid) as well as global development aid. The main means of international support is currently organised via the United Nations Framework Convention on Climate Change (UNFCCC). For Least Developed Countries (LDCs) the UNFCC supports the development and implementation of national adaptation programme of action (NAPA), which provide a process for LDCs to identify priority activities that respond to their urgent and immediate needs with regard to adaptation to climate change. Five nations in the Australasia region, namely Samoa, Solomon Islands, Kiribati, Tuvalu and Vanuatu belong to the LDC (Least Developed Countries) and have already developed and submitted their NAPA.

In addition to the NAPA, several countries have also developed their own national climate change strategies. The strategy of Kiribati for example addresses the topics of mitigation, adaptation and relocation. Being aware that Kiribati does not have enough own resources to implement the strategies, Kiribati and other island states also try to raise the awareness of the developed countries about their situation. Videos like "Kiribati - A Call to the World" and side events at COP aim to make developed countries acknowledge their responsibility for the ongoing climate change and to offer more financial and technical support to the severely affected island states.

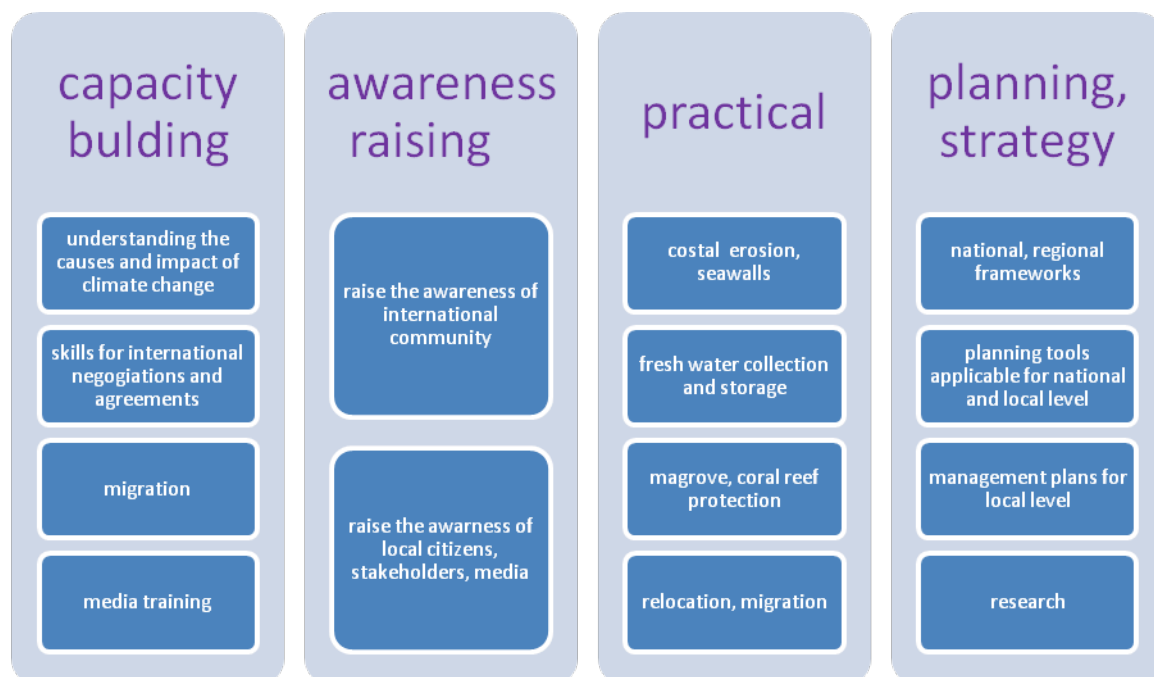
3

Because of the smallness of the south pacific island states, many climate change activities are carried out on a regional scale. This regional approach on one side helps individual nations to present their needs to the international audience. On the other side international aid agencies often prefer to interact with one regional organization instead of multiple national organizations. A key actor is the Secretariat of the Pacific Regional Environment Programme (SPREP), a regional organisation established by the governments and administrations of the Pacific region to look after its environment.

On local level there are many ongoing initiatives responding to the impacts of climate change, ranging from individuals, families or villages trying to avert the impacts of climate change by building seawalls or collecting potable water. Larger projects are usually funded by international aid organizations. Some of the larger projects are initiated and managed by local communities, however many by external agencies or NGOs, nevertheless some of these involve the communities in a participatory approach.

4. Types of climate change projects

167 projects and initiatives dealing with climate change in Australasia have been identified as part of this research. As the figure below illustrates, they have been split up in 4 categories: awareness raising, capacity building, practical projects and theoretical projects relating to planning, strategies, tools and monitoring. Some projects belong to two or more categories.



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In the following sections each category and the kind of projects that belong to it are described shortly and illustrated with some practical project examples.

4.1 Awareness raising

The identified awareness raising projects are addressed to two different audiences.

Firstly, some projects aim at increasing the awareness of international community on the problems and threats of climate change to pacific island countries. These projects aim to ensure that developed countries acknowledge their responsibility for climate change, be more active to implement climate change mitigation measures, especially the reduction of greenhouse gas emissions, and support

Box 1: Video "Tofiga O Pili Aau"

Documenting the impacts of climate change on the coastal communities in Samoa, 'Tofiga O Pili Aau' was created by representatives from eight villages on Savai-i and Upolu islands. This video features the initiatives of vulnerable communities to mitigate the impacts of climate change on their environment, livelihoods and infrastructure. It is the result of a participatory video project. The film was devised, planned, filmed, directed and in all other ways undertaken by a group of 12 community representatives during a workshop held in the villages of Fasito'otai and Fagamalo.⁴

insightShare, Community-Based Adaptation (CBA) Programme, Global Environment Facility (GEF), UNDP, United Nations Volunteers

⁴ http://www.engagemedia.org/Members/insightshare/videos/Tofiga_O_Pili_Aau_short.mp4/view (Last Accessed 04.09.2010)

financially and technically Pacific island countries to adapt to climate change.

Other projects seek to raise the awareness of local citizens (incl. school children), stakeholders and media about the impact of climate change.

Some projects, especially larger ones, address both target groups, for example the 2008 Pacific Year of the Reef or the 2009 Pacific Year of Climate Change.

The majority of projects identified are focused on raising the awareness about the context, problems and causes of climate change and less on adaptation. Awareness raising projects include poster, fact sheets, drama and videos. Many of them have a strong involvement of local communities e.g. video workshops, photo or school competitions.

4.2 Capacity building

There is a wide range of climate change capacity building projects undertaken at PIC. However, there are hardly any capacity building offers relating to practical adaptation solutions. Local practical capacity building rather takes place learning by doing or as additional measure to small scale practical projects (cf. 4.3). Most capacity building seminars are about the understanding of climate change and its impact on the local environment. In addition, there is a wide range on seminars relating to international agreements, e.g. trainings on negotiation skills for international climate change conferences (COP 15), Clean Development Mechanisms, Multilateral Environmental Agreements etc. Also seminars on the topic of migration as well as media training have taken place. Most capacity building seminars are held in English and not in the local languages.

Box 2: Marshall Islands Climate Change School Competition

The competition held as part of the Pacific Year of Climate Change 2009 aimed at spreading awareness of climate change to young people as well as to hear the thoughts of Pacific children and teenagers on this crucial issue.

The competition called for entries asking schoolchildren to tell about the problems caused by climate change in their community. They could submit their entries in any one of the following categories; photographs, posters, poems and essays.⁵

Secretariat of the Pacific Regional Environment Programme (SPREP)

Box 3: USP Students drama teaches climate change

A drama class at the University of the South Pacific is using arts to express climate change and its effects on Pacific people. Students currently studying the course teaching development through theatre performed the drama during the launch of the Pacific climate film festival.⁶

University of the South Pacific (USP)

Box 4: Negotiation Training

Ensuring that the voice of Pacific Island countries is heard at the international level is critical for the success of the climate change negotiations. This was one of the many lessons stressed during a week of negotiation training and consultations at SPREP Headquarters in Apia, Samoa. In preparation of COP 15, Pacific Island countries party to the UNFCCC received in-depth training in negotiations strategy and techniques. Dr Ian Fry, a prominent climate change specialist and a negotiator for the Government of Tuvalu conducted sessions to help prepare participants for key issues that will be addressed at COP 15.⁷

Secretariat of the Pacific Regional Environment Programme (SPREP)

Box 5: Climate Change and Weather in Simple language in Niue

The main objective of the workshop is to provide Education and Awareness on weather and climate information in a simple, clear, and in the local language for the participants. As most of the workshops prior to this one were conducted and presented by people from overseas the Climate Change and the Metrological department changed this by having all local people from this department who are responsible for their respective duties do the presentations. Most of these people have been overseas on special training and are very up to date with the information needed to pass on to the people. This made a lot of difference according to the participants as they felt more relaxed and also the presenters

⁵ http://www.sprep.org/article/news_detail.asp?id=692 (Last Accessed 04.09.2010)

⁶ http://www.sprep.org/article/news_detail.asp?id=468 (Last Accessed 04.09.2010)

⁷ http://www.sprep.org/article/news_detail.asp?id=623 (Last Accessed 04.09.2010)

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4.3 Practical

Practical projects refer to initiatives that physically adapt local communities to climate change. There are a few comprehensive projects funded by international donors that comprise capacity building, awareness raising and practical small scale community based adaptation projects.

Communities or community based NGOs with adaptation needs finance practical projects mostly via the GEF. Moreover, there are several small scale adaptation measures carried out on individual basis, for example families building sea walls on their own to protect their houses. Practical projects are addressing the several topics. Rising sea levels, cyclones, storm surges and flooding are constant threats for the coastal areas. On individual or community basis home owners try to protect their houses and land by building sea walls. Several mangrove protection and planting projects have been carried out for protection of coastline as well as for providing food sources.

Fresh water supply for drinking as well as irrigation is crucial for small islands. Due to the rising sea level and subsequent salination of land and fresh water lenses as well as longer draught periods, the catchment and storage of rain water as well as the access to springs and wells is the topic of several small scale projects.

The relocation from houses or villages has already become a necessity on several islands and is taking place on several scales. On a small scale, home owners living directly at the sea shore had the need to rebuild their houses a few meters more inland due to coastal erosion. In some cases whole villages have been relocated inland and on higher grounds. Moreover, a few islands have already become inhabitable so that the inhabitants had to migrate to other islands. Finally, on national level countries

Box 6: Soil Rehabilitation Project - Rakahanga Island - Cook Islands

To re-establish the quality of the soil on planting lands through organic composting. Lost of soil fertility after cyclone Martin of 1997 and 10 years later the growers of the island have experienced a drop in their food production because of the salt laden land caused by the flooding from the sea during the cyclone.⁹

Rakahanga Growers - RG (Community Based Organization) (Cook Islands), Global Environment Facility (GEF)

Box 7: Fagamalo Community Based Adaptation against flooding and sea level rise

To reduce the impacts of cyclones and flooding on the households, the wetland and coastal ecosystems around Fagamalo, the project is proposing to take out the existing rock jetty acting as a groyne which is contributing to the rapid coastal erosion, and affecting the coral regrowth in the inshore reef. The village is also highly vulnerable to climate risk from the flooding of the Satoalepai wetlands directly behind village homes. To slow down the flooding risk and provide easy access for families along the coast to higher grounds during natural disasters such as cyclones, storm surges, and non-climate change disasters such as tsunamis, the existing access road will be upgraded. The upgraded unsealed access road will also provide the buffer between the flooding and the family homes while on normal days, it will reduce land-based pollution from affecting the wetlands.¹⁰

Alii ma Faipule Fagamalo - AFF (Community Based Organization, Samoa), Global Environment Facility (GEF)

⁸ http://www.sprep.org/article/news_detail.asp?id=665 (Last Accessed 04.09.2010)

⁹ http://sgp.undp.org/web/projects/12604/soil_rehabilitation_project_rakahanga_island_cook_islands.html (Last Accessed 04.09.2010)

¹⁰

http://sgp.undp.org/web/projects/14814/fagamalo_community_based_adaptation_against_flooding_and_sea_level_rise.html (Last Accessed 04.09.2010)

like Kiribati are preparing themselves for the eventuality that large numbers of their citizens need to migrate to other countries.

Box 8: Developing a water catchment area to capture and store water for village reserve to support the community during rain season

The community of Lepa Village is blessed with many small waterfalls running along the cliffs surrounding the village, however they also create a problem of flooding the road during rainy season. At the same time, the abundance of freshwater coming from the small waterfalls are being wasted as they flow directly across the road and into the sea. The community feels that capturing the water and storing it will help support every household during rainy season when the piped water is dirty, and at the same time provide water during dry season with water shortage.

Objectives;

To provide an alternative quality water supply for the community when the piped water runs out

To instill the value of environmental conservation amongst the villagers and its future generation

To conduct an environmental assessment on possible adverse impacts that can emerge from the project, and identify appropriate measures¹¹

Lepa - Komiti Tumama (Samoa), Global Environment Facility (GEF)

Box 9: Replanting mangrove seedlings in the wetland ecosystem of Vaiusu Village

Mangrove areas provide many important functions in the marine environment. Most of the mangrove areas in Vaiusu have been damaged by natural disasters and human induced activities, such as consumption, the overuse of the mangrove ecosystem and the lack of awareness about the ecological and economical benefits of wetland areas. The Komiti a Tina ma Tamaitai Vaiusu (KTTV) has decided to take up the responsibility of protecting and conserving the mangrove ecosystem. Henceforth the objective of the project are; Raise awareness of the village members about the value of mangrove ecosystems; Plant more mangrove seedlings to improve its current condition; Identify income generating activities that can support the village livelihood from the mangrove.¹²

Komiti a Tina ma Tamaitai Vaiusu - KTTV (Community Based Organization)(Samoa), Global Environment Facility (GEF)

Box 10: Relocation of a village in Vanuatu

A small community living in Vanuatu has become one of the first to be formally moved out of harms way as a result of climate change. The villagers have been relocated higher into the interior of Tegua, one of the chains' northern most provinces, after their coastal homes were repeatedly swamped by storm surges and aggressive waves linked with climate change. The relocation project, involved over 100 villagers living in the Lateu settlement. Over recent years the rates of flooding have increased triggering a variety of problems including increased malaria and skin diseases among children as a result of more standing water for mosquitoes. Erosion rates around the village had also accelerated to between two and three meters a year. The one meter high coral reef, the previous line of defence against high tides and waves, was being increasingly breached. Villagers were moved to 15 meters, higher ground, around 600 meter from the coast.¹³

Capacity Building for the Development of Adaptation in Pacific Island Countries, Secretariat of the Pacific Regional Environment Programme (SPREP)

¹¹

http://sgp.undp.org/web/projects/9184/developing_a_water_catchment_area_to_capture_and_store_water_for_village_reserve_to_support_the_comm.html (Last Accessed 04.09.2010)

¹²

http://sgp.undp.org/web/projects/9181/replanting_mangrove_seedlings_in_the_wetland_ecosystem_of_vaiusu_village_to_improve_the_current_det.html (Last Accessed 04.09.2010)

¹³ http://www.sprep.org/climate_change/pycc/deta.asp?id=247 (Last Accessed 04.09.2010)

4.4 Planning, strategy, tools, monitoring, research

There is also a wide range of more theoretical approaches designed for the Australasian context these can be categorized as follows: First of all there are a wide range of strategies and frameworks for adapting to climate change on national or regional scale. These strategies are often either initiated by national governments, international organisations, such as the National Adaptation Programmes for Action (NAPA) for least developed countries by United Nations Framework Convention on Climate Change (UFCCC) or intergovernmental regional organisations (Action Plan for the Implementation of the Pacific Islands Framework for Action on Climate Change 2005-2015).

Box 12: CLIMAP – Climate Change Adaptation Program in the Pacific

Six case studies using existing development projects have been "climate proofed" at minimal extra cost in the Federated States of Micronesia (FSM) and Cook Islands. This risk based climate proofing approach has shown that it is possible to avoid most of the damage costs from climate change to infrastructure projects in a cost effective manner if "climate proofing" is undertaken at the project design stage. If climate change adaptation is mainstreamed in an integrated way from the beginning of the project development cycle then huge risk reductions and their likely costs can clearly be achieved for low additional costs. This is demonstrably a superior approach to ignoring the predictable effects of climate change and having to fix up the damage and rebuild the infrastructure afterwards.¹⁵

Asian Development Bank, Canadian Cooperation Fund for Climate Change

Box 11: Adapting to Climate Change in the Pacific Island Region

GTZ is supporting partner governments in Tonga, Vanuatu and Fiji, as well as the Secretariat of the Pacific Community (SPC), in their efforts to integrate climate change into their strategies and policies. The programme concentrates on farming, forestry and land use planning. To create suitable conditions, national adaptation strategies are being developed and the relevant policies and guidelines made climate-relevant. Through climate-sensitive land use planning, residents should receive support in identifying forms of land use that will remain sustainable despite future climate changes. To reduce greenhouse gases, the programme supports Fijian efforts to protect the remaining forests by using the sale of CO2 certificates to provide a financial basis for conservation approaches. Several pilot programmes support local societies, farmers and forest users in adapting their land use methods to the coming climate change.¹⁴

German Federal Ministry for Economic Cooperation and Development (BMZ), German Agency for Technical Cooperation (GTZ), governments in Tonga, Vanuatu and Fiji, Secretariat of the Pacific Community (SPC)

Secondly, tools and approaches have been developed by international organisations and institutions that can be applied to regional and national scale and sometimes to local scale and support planning and decision-making processes and in some cases aim to foster the

mainstreaming of climate change issues into planning processes.

Box 13: Fasitootai: Reduce impacts of climate change driven erosion through protection and conservation of Mangroves, Eco-systems and Coral Reefs

The objective of the project is to improve the adaptive capacity and reduce climate change vulnerabilities of Fasitootai (Samoa) through management of mangrove and coral reef ecosystems. Strengthening the resilience of the mangroves will buffer the drinking and bathing pools, a source of drinking water, protect productive agricultural land from seawater inundation, preserve habitat for mud crabs, birds and fish, and protect coral from climate change-induced sedimentation. Many villagers rely on the mangroves and coral reefs for their livelihood. By putting in place proper climate change resilient management plans and protecting these eco-systems the village will be able to

¹⁴ <http://www.gtz.de/en/praxis/27718.htm> (Last Accessed 04.09.2010)

¹⁵ <http://www.adb.org/REACH/can-climap.asp> (Last Accessed 04.09.2010)

There are also a number of projects relating to the local management of environmental problems. Some of them are initiated by international organisations (such as WWF), however there is also a large number of GEF funded projects that are genuinely community driven.

Moreover, several research projects funded and carried out by international institutions have been identified. Most of them are carried out by non local scientists and focus on climate change or its impact and not on adaption. The Pacific Regional Integrated Science and Assessment (Pacific RISA) program supports Pacific island and coastal communities to mitigate and adapt to the impacts of climate variability and change. Based in Hawaii it also covers the US governed in Australasia (such as Marshall Islands, Federated States of Micronesia, American Samoa).

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5. Cross-cutting Themes

The analysis of climate change initiatives and strategies, frameworks and other literature has shown that there are a number of cross-cutting issues that affect the design and implementation of most climate change adaptation measures.

5.1 Vulnerability/ Resilience

There is little doubt that due to their geographical situation low lying islands in the Pacific are at high risk because of current climate changes. Apart from the physical risk it is often argued that because of the low development stage and thus little financial resources and technical capacity the communities to adapt to climate change the communities on south pacific island states are extremely vulnerable. However, there are also some examples that the adaptation to western lifestyles in the past two centuries has increased the vulnerability to weather hazards in the first place. For example, in pre colonial times the indigenous people used to live in small hamlets further inland rather than at the coastline.¹⁷ Moreover, they used to use traditional methods for food storage and preservation which helped them to survive natural hazards affecting their current food supplies, whereas nowadays the reliance on refrigerators causes problems in case power cuts during cyclones and other extreme events.¹⁸ Building up the resilience of local communities against the impacts of climate change needs to be considered in the wider context. This includes environmental resilience of the ecosystems as well as the social resilience of the communities. Effective adaptation to climate change goes hand in hand with truly sustainable economic, social and environmental development.

5.2 Knowledge

For a community to be in a position to adapt to climate change an important prerequisite is knowledge. Most of knowledge about climate change is produced by developed countries. However, this knowledge is to a large extent not of practical use for local communities. Most of the information relate to climatic change observations and predictions and contain a lot of uncertainties about the expected impact. There is a lack of information about suitable adaptation measures. On the other side there is a lot of traditional knowledge on responding to extreme climatic events. The analysis of this traditional knowledge in relation to climate change is in an initial stage.

The dissemination of climate change information has a strong bias to climate and climatic change impacts as it is understood by developed countries. The way climate change and the impact it might have on south pacific islands is communicated to the local communities as well as to international public is likely to have a strong influence what and how climate change mitigation and adaptation measures will be implemented locally and globally. A key element for Pacific small island states might

¹⁷ Barnet, J. , Campbell, J. (2010) *Climate Change and Small Island States: Power, Knowledge and the South Pacific*. Earthscan: London, p. 34-35

¹⁸ Gero, A., Méheux, K., and Dominey-Howe (2010) *Disaster risk reduction and climate change adaptation in the Pacific: The challenges of integration*. ATRC-NHRL Miscellaneous Report 4. The University of New South Wales, p. 41

be to find the balance between communicating the serious threat climate change poses to their islands without suggesting that it is already too late to do something about it.

5.3 Foreign Aid/ Governance

For implementing climate change adaptation measures less developed countries depend largely on foreign aid. Therefore, the decision which project will get implemented is often based on the perspective of the donor countries, rather than the perceived needs of the target country. Moreover, the procedures for the management of funded projects are often not reflecting the local realities.

5.4 Migration/Relocation

The relocation of families or even villages to other parts of their home island is already a reality on some islands. In very few cases such as the Cartaret Islands (Papua New Guinea), inhabitants needed to move to other islands. The topic of migration is therefore present in the minds of the local communities and many people fear that they might need to leave their home island and even home country in years to come²⁰. Kiribati is one of the countries that is promoting relocation (in the sense of large scale migration to other countries) as one of its strategies to respond to climate change. This does not imply that Kiribati is not eager and optimistic to adapt and mitigate climate change, however, in case these measures will not lead to the expected results, Kiribati seeks to ensure that its people will not end up as unwanted environmental refugees.

Box 14: Migration with Dignity

The relocation strategy of the Kiribati Government has two key components. Firstly, opportunities must be created to enable the migration of those who wish to do so now and in the coming years. This will assist in establishing expatriate communities of I-Kiribati, who will be able to absorb and support greater numbers of migrants in the longer term. It will also benefit those who remain by lifting the levels of remittances. Secondly, the levels of qualifications able to be obtained in Kiribati will be raised to those available in countries such as Australia and New Zealand. This will make qualified I-Kiribati more attractive as migrants, but will also improve the standards of services available locally.¹⁹

Government of the Republic of Kiribati

¹⁹ <http://www.climate.gov.ki/relocation.html> (Last Accessed 05.09.2010)

²⁰ UNDP Report : Kiribati - A Climate Change Reality - December 09, 2009
<http://www.climate.gov.ki/FutherInformation.html> (Last Accessed 05.09.2010)

6. Lessons learnt

6.1 Research on Adaptation

More research needs to be done on feasible adaptation measures (instead on only climate and climate change impact). Research should include the analysis of traditional, local adaptation measures, moreover, more research should be done by local people. As developed countries have very little resources for funding research, it would require that local researcher will have better access to international research grants.²¹

6.2 Integrate traditional knowledge

Traditional knowledge needs to be integrated in any CCA projects. Even though the topic of climate change seems like a new problem, in fact the main impact is that prevailing natural hazards (such as flooding, draughts, cyclones) become more severe and more frequent. There is a lot of traditional knowledge existing in the Pacific island countries to respond to natural hazard and about disaster risk reduction ranging from building seawalls, having high-rise houses to using floating cookers²² or floating gardens²³. An international conference to be held in Fiji on “Future Challenges, Ancient Solution” demonstrates that local scientists already acknowledge the potential of traditional knowledge.

Box 13: International Conference on Future Challenges, Ancient Solutions: What we can learn from the past about managing the future in the Pacific (29th November – 3rd December 2010) Suva, Fiji Islands

Many challenges face the peoples of the Pacific Islands in the 21st century. Solutions are needed that are both effective and acknowledge the cultural context in which they will be applied. Many solutions that have been applied to the Pacific Islands have failed because they have been neither culturally sensitive nor environmentally appropriate. In this regard, it is possible that earlier generations of Pacific peoples came up with solutions to similar challenges that were successful because they were developed by key stakeholders who knew the context intimately. This conference examines several areas in which there are challenges confronting Pacific Island peoples and looks to the past to see whether solutions were developed in response to comparable challenges. The aim of this conference is to identify those ancient solutions and evaluate their efficacy. The overarching goal is to inform solutions for contemporary challenges, particularly by enhancing their cultural and environmental sustainability to the Pacific Islands context.²⁴

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6.3 Respect socio-cultural environment

Projects (especially those initiated by external agencies) need to respect the socio-cultural context (e.g. values, decision making structures etc.) to ensure acceptance, ownership and sustainability of projects. In particular, projects need to be carefully designed to ensure that woman are in a position to participate actively in projects.

6.4 Reduce abstractness of climate change

Climate change adaptation projects should be linked to everyday problems and issues. The concept of climate change is rather abstract and connected with lots of uncertainty about

²¹ Barnet, J. , Campbell, J. (2010) *Climate Change and Small Island States: Power, Knowledge and the South Pacific*. Earthscan: London, p. 51-68.

²² Gero, A.,Méheux, K., and Dominey-Howe (2010) *Disaster risk reduction and climate change adaptation in the Pacific: The challenges of integration*. ATRC-NHRL Miscellaneous Report 4. The University of New South Wales, p. 41

²³ http://www.sprep.org/article/news_detail.asp?id=557 (Last Accessed 05.09.2010)

²⁴ <https://www.usp.ac.fj/index.php?id=8880> (Last Accessed 05.09.2010)

predicted changes and their expected impact. Topics such as disaster prevention, food security, health and income generation are directly related to climate change, however much more tangible for local communities.

7. Conclusions

Small developing island states in Australasia are indeed most vulnerable to the impact of climate change. Even though they have hardly contributed to CO₂ emissions and climate change they are the ones who suffer most. Being small islands they lack alternative places for settlements or agriculture.

However, the inhabitants of the Pacific islands have for the past centuries coped with the extreme climatic conditions and had adapted their lifestyle their environment and developed indigenous solutions for natural hazards. Therefore, fostering community based adaptation initiatives that incorporate traditional knowledge seems to be a promising approach to tackle the challenges of climate change. There seems to be a gradually increasing awareness among local people as well as from donor organisations about the potential of community-based projects as an effective mean to adapt to climate change. It can be hoped that in future the international community is willing to provide more financial and technical support for the practical implementation of community based adaptation initiatives.

Annex: List of Climate Change Adaptation Initiatives