

## **SPREP paper on current approaches to adaptation and requirements for implementing loss and damage measures in the Pacific Island Region**

The Secretariat of the Pacific Regional Environment Programme (SPREP), an inter-governmental treaty based organization, and headquartered in Samoa since 1991, has been engaged in climate change issues since its inception. Building on experiences garnered from assisting Pacific Island Countries with their initial national communications, guided by scientific advice and studies in the region, SPREP helped countries in the region develop the first stage 3 adaptation projects in 2002-2006 (CBDAMPIC). This project was implemented in four countries and piloted the community based vulnerability and adaptation assessment methodology. This required a mixture of science analysis, situational analysis and community perceptions, with discussions held with different sets of community groups.

Building on the lessons learned from that process, SPREP helped develop the Pacific Adaptation to Climate Change (PACC) project, currently active in 14 Pacific Island Countries and Territories, focussing on the coastal infrastructure, food security and water sectors. PACC called on participating countries to identify a development sector in which to focus their adaptation efforts. Following an evaluation of existing development programmes, the status of existing baseline assessments and co-financing abilities, and given the pressing adaptation requirement in each sector, countries selected their priority sector for adaptation intervention. Enhanced scientific input was available to the planning, but in all cases common sense or no-regrets measures were largely the optimal choice of the communities. While concerned with longer term climate change impacts, almost all communities chose to implement solutions that would address current as well as future climate change impacts – but not in their entirety – due to a lack of accurate scientific knowledge, precaution as well as financial costs.

This is thus in summary the current regional approach to adaptation, which is evolving as scientific issues become clearer, modelling of impacts achieve better resolution, knowledge of methods and tools that work under certain circumstances is disseminated, and cost-benefit analysis is carried out with greater accuracy. In addition the region has also developed a fairly robust framework for disaster risk management aimed to reduce the likelihood of a disasters happening, or to reduce the effects of a disaster when it does occur. Activities can be non-structural or structural in nature. They may include but not limited to retrofitting of infrastructure, land-use planning, policies and legislation (e.g. building codes), incentives, penalties and controls and education and training.

Disaster risk reduction is a cross-cutting issue that is being mainstreamed across all government and nongovernment agencies in conjunction with climate change adaptation – in the Pacific known as Joint National Action Plans. All stakeholders have a requirement to perform its activities and programmes in a manner which reduce the risk of disasters and avoid decisions that increase existing risk levels to climate change. This also includes preparedness activities that enable response agencies and communities to respond to disaster events in an effective and timely way.

Preparedness activities include public awareness programmes, warning systems, operational plans, training, simulations, and the establishment and maintenance of communications networks and operational facilities. Public awareness campaigns are also organised.

But these approaches, while exceedingly important in the current and near term context of climate change in the Pacific, are now recognized as being inadequate for the medium to longer term time-frame. Predicted impacts of climate change are now such to suggest that the entire range of damage and permanent loss associated with climate change impacts in developing countries can no longer be avoided through mitigation nor can be avoided through adaptation. There are multiple approaches to address loss and damage, some which may have synergies with adaptation efforts, while others will require taking action through new arrangements. In this context the impacts of climate change need to be looked at with a different perspective.

The types of loss and damage of greatest concern in the Pacific Island Countries relate to sea level rise, ocean acidification, coral bleaching, impacts on terrestrial and marine biodiversity, fisheries and aquaculture, and agriculture. In addition, there is a great concern over losses that cannot be quantified in monetary terms, such as loss of lives, loss of culture and language, loss of connectivity to customary land, and in some cases losses of entire islands or sovereign states. Economic as well as non-economic losses are all part and parcel of the current discussion in the FCCC, and represent lost opportunities for as well as threats against sustainable development.

Key to the discussion is the realization from the very beginning of the negotiations for the FCCC that there may be limits to the scope and feasibility of adaptation, as embodied in the 1991 submission by Vanuatu on behalf of AOSIS for an insurance mechanism. As science is more clearly defining the scope of the climate change problem, as research into the impacts of different temperature scenarios have developed, so the realization has grown that without strong mitigation ambition there will be a severe situation for Pacific Island Countries. Given the turgidity of the climate system, and the inability of the international community to move rapidly enough on mitigation, there are likely to be impacts that are beyond adaptation.

There are certain extreme situations such as that of the atoll countries. They are likely to be affected by a multiplicity of damages, from sea level rise (inundation, saline intrusion, and storm surges), diminished or depleted water resources (from changes in rainfall patterns), coral bleaching (impacting the tourism sector, fisheries) and changes to the fisheries sector (changes in migratory patterns, changes in the stocks). All of these by themselves are damaging, but for the atoll countries these will be taking their toll in synchronicity.

For the higher islands the issues can be viewed as equally extreme, given that the majority of the economic activity is found in the coastal zone. In addition there are health issues with malaria moving into the highlands of some of our islands. Also prevalent in the Pacific is the issue of land tenure in that virtually all land is owned by families or clans through customary means. These land rights are constitutionally protected and cannot be abrogated by Governments, thus severely limiting the ability, if feasible to relocate on a large scale.

While the resource requirements for current adaptation activities are becoming better documented, there is still a long way to go to quantify the economic costs of climate change in the Pacific. Simply seeking to undertake a relatively snapshot-style assessment of climate change costs in the Pacific has been estimated at over several hundreds of thousands. The costs in terms of human, technical and financial resources for the Pacific Catastrophic Risk Assessment were in themselves considerable. The costs of the PACC project is now \$20.5 million, yet this is looking at adaptation in a single sector for communities in 14 countries and territories, albeit with ancillary longer term

benefits such as changes to policy, awareness raising and improved planning processes. But it begs the question whether it is even feasible to base an assessment of country-wide adaptation needs and costs on the dollar value of a single regional project implemented nationally. In scaling up PACC for further implementation activities it is recognised that sheer capacity constraints alone are a significant challenge. It is unlikely that any of the Pacific Island Countries would be in a position to mobilize its entire workforce for adaptation implementation. However, through mainstreaming this situation is expected to be somewhat alleviated with climate change adaptation becoming a more central part of all development decisions and planning.

The cost-effectiveness of the current approaches are relative to business as usual are fairly clear – the Pacific was required by external circumstances to begin adapting to climate change, and have chosen relatively no-regret or common sense measures. As emissions rise, impacts increase, and climate change knowledge and modelling is enhanced higher-cost options will increasingly need to be considered, and there will also be constraints to using a community based approach in the absence of a massive education and awareness raising campaign. More complex options will also require more complex reference materials, such as animation tools and visualization demonstrations.

That being said, the community based approach combined with country-driven policy guidance is absolutely vital for adaptation to proceed – social, cultural and community acceptance of the options chosen for implementation are sine qua non. Without this acceptance the implementation will simply not occur, or if it goes ahead will not be sustainable or maintained.

Requirements for adaptation in the region are therefore already very high, from all perspectives. When the region considers the issue of loss and damage it is most likely to be done through the perspective of work undertaken in the context of cooperation with AOSIS. AOSIS has put forward a detailed set of submissions in the last few years, and based on these there are some observations that can be drawn.

AOSIS have called for establishing an international mechanism to address loss and damage with three mutually-reinforcing components:

- An Insurance Component to help SIDS and other particularly vulnerable developing countries manage financial risk from increasingly frequent and severe extreme weather events;
- A Rehabilitation/Compensatory Component to address the progressive negative impacts of climate change, such as sea-level rise, increasing land and ocean temperatures, and ocean acidification; and
- A Risk Management Component to support and promote risk assessment and management tools and facilitate and inform the Insurance Component and Rehabilitation/Compensatory Component.

The mechanism governance and functions need not be considered here, but clearly oversight, transparent governance structure, and institutional technical, financial and administrative arrangements for each component will be required. There is likely to be reliance on specialised technical expertise and linkages to the work of other constituted bodies under the Convention.

It is recognized by AOSIS that the three components of the mechanism are inter-dependent and all three are needed as part of an integrated and comprehensive approach to minimizing and addressing loss and damage in SIDS, LDCs and other developing countries particularly vulnerable to climate change impacts. Equally important is the need to have requisite and corresponding structures at the national level to enable Pacific Island Countries to benefit from the opportunities that the mechanism will open.

The insurance component is needed to assist SIDS in better managing financial risks associated with increasingly frequent and severe climate-related extreme weather events. These include hurricanes, tropical storms, storm surge, floods and droughts. These events already result in significant loss or damage and many hazards will be exacerbated by climate change. Insurance in the Pacific is at present very limited and there is minimal penetration of the insurance industry in most sectors of the economy. While physical impacts on SIDS are already being experienced, such as an increase in the intensity and frequency of various extreme events, heavy rainfall, drought, high air and ocean temperatures, strong winds and storm surges, the capacity of SIDS to cope with these events is being increasingly exceeded. Pacific Islands have limited access to commercial risk sharing and risk transfer products, due to insurance markets that are small or difficult to establish, resulting in market failure. In other regions, where insurance is available, the Pacific Islands find it increasingly difficult to afford commercial insurance due to the burden of increasing risks due to climate change.

An international mechanism that pools the risks from all vulnerable countries will bring benefits to all through a spreading of the risks among a larger number of countries. New and innovative insurance tools in addition to, or in conjunction with insurance pools, can help manage, spread, hedge, reduce and transfer the increasing financial risk associated with climate-related hazards, if appropriate expertise and financing to design and support this work is marshalled and coordinated at the international level. Pacific Islands will require significant upgrading of skills in a number of required areas of expertise in order to be able to participate in such a mechanism, as there simply has not been the necessary exposure in the region to such tools to any measurable degree.

The rehabilitation/compensatory component is seen as being needed to address the progressive negative impacts of climate change, such as sea level rise, increasing sea and land temperatures and ocean acidification that result in loss and damage (e.g., permanent or extended loss of useful and, damage to coral reefs, damage to water tables, loss of fisheries, etc). There is a significant gap in the availability of approaches now established to deal with the slow onset events and permanent loss mentioned above. For example, in the fisheries sector recognition of climate change damages in the future have guided the development of more robust fisheries management processes and procedures. But this does not account for tipping points or situations when fisheries management is insufficient. Similarly while sea-level rise monitoring has been progressively implemented and is being linked with climate early warning systems, there will be a time when an early warning will be a fait accompli or a death foretold. Given the reality of climate change and its current and potential impacts, it is necessary that provision be made for addressing such losses, especially as the SIDS have contributed little to the GHG emissions that are the cause of these impacts. In such circumstances, an international response is required and the UNFCCC is the institution best placed to lead such an international response. National structures will also be required to be a counterpart to such a

mechanism in terms of coordinating information on losses and distributing and overseeing any technical and financial elements.

The risk management component, while to some extent mirrored by existing structures in the Pacific such as the Pacific Disaster Platform, will be required to provide enhanced technical and financial support to risk reduction efforts in connection with climate-related extreme weather events. Facilitation of information and training will be required on how to reduce risk from the impacts of progressive negative impacts of climate change that result in loss and damage, sea level rise, increasing sea and air temperatures, ocean acidification, and so on, to enable Pacific Island Countries to be aware of and have the wherewithal to limit impacts on coastal infrastructure, shorelines, coral reefs in an integrated approach with the other two components.

From the perspective of the Pacific region, an international mechanism will therefore require significant up scaling of capacity at the national level compared to current and future efforts in adaptation. One is not a substitute or an alternative for the other, and it would be a sensible approach to ensure that requirements at the national level for participating in the international mechanism be incorporated as early as possible in national adaptation plans and processes, in particular in regards to capacity building. In the same vein, technical capacity and materiel should also be built in to technological developments for adaptation, for example in the early implementation of multiple overlay high resolution GIS maps for all islands, linked with climate early warning systems. Particular attention should also be given to countries with a very low level of insurance penetration in markets and sectors and to begin building up the skill sets required to implement the insurance component at the national level.