COUNTRY REPORT: PAPUA NEW GUINEA
Papua New Guinea's Action Plan for Climate Change

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Introduction

Papua New Guinea is an island nation facing an enormous challenge – the threat of global warming. With a 17,000 km coastline and about 600 low-lying islands which are home to an estimated population of about 500,000, the threat of global warming and associated changing climatic patterns are real as seen in the case of the inhabitants of the low-lying island of Carterets who became the first people in the world to be forced to relocate due to rising sea levels. The people of Carterets Islands are the world's first climate change 'refugees'. The Carterets' Islands people and other coastal and low-lying island communities within and around PNG are vulnerable to sea level rise and other climate-related impacts, such as coastal flooding, inland flooding and landslides, and the spread of malaria. In addition, the gradual changes in changing climate conditions and patterns also impact on food production and cause damage to its coral reefs and marine resources which are a threat to the livelihood of its people, and the economy.

Papua New Guinea signed *the United Nations Framework Convention on Climate Change (UNFCCC)* in June 1992. In April 1993; PNG ratified *the UNFCCC* and confirmed its commitment to fulfilling its obligations under the Convention. Seven years later (in November 2000), PNG submitted its National Communication as required under Articles 4 and 12 of the *UNFCCC* and provided details of its key action plans, policies and strategies on its major sources of GHG emissions and sinks, and vulnerability.[1] In addition, this National

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[1] Government Papua New Guinea, 'Papua New Guinea Initial National Communication Under the United Nations Framework Convention on Climate Change' (November, 2000), Ministry of the Environment and Conservation; [MEC] (2000); Papua New Guinea Initial National Communication

Communication also included proposals that PNG intended to implement in its efforts to address to climate change impacts including its contribution in reducing GHG emissions. The office of Climate Change is the implementing agency of the PNG government, tasked with responsibilities for the development of appropriate policies and regulation (when introduced) that will enable PNG to deal with issues relating to climate change.

This report is focuses on the fact that whilst PNG is committed to mitigating climate change, and has presented details of its key action plans, policies and strategies on its major sources of GHG emissions and sinks, and vulnerability in its 2002 Report to *the UNFCC*; 14 years later it appears these priorities, key plans, policies and targets are yet to materialise. The reasons for this failure is particularly due to the lack of government providing leadership, support and direction in ensuring that the PNG Parliament enact legislation which addresses climate change risks and ensuring that all stakeholders participate in decision-making and governance in addressing the risks and benefits of climate change. This report will highlight some key plans, policies and strategies that have been undertaken to date in promoting environmentally sound adaptation activities which are targeted towards supporting a sustainable livelihood and economic prosperity, and adaptation and disaster risk reduction[2] for all its vulnerable communities.

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under the United Nations Framework Convention on Climate Change. Retrieved from http://unfccc.int/resource/docs/natc/papnc1.pdf (Accessed 24/11/2014).

[2] World Bank and Government of Papua New Guinea, 'Climate Change in Papua New Guinea: Framework for the National Climate Change Strategy and Action Plan' (World Bank, Government of Papua New Guinea, June 2010) viii, http://documents.worldbank.org/curated/en/2010/06/16400674/climate-change-papua-new-guinea-framework-national-climate-change-strategy-action-plan (Accessed 09/02/2015)

Figure 2 - Map of Papua New Guinea

Source :< http://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/14_PCCSP_PNG_8pp.pdf>

Currently the only legislation that relates to climate change is based on environmental planning measures. There are no codes of practice that are used as an integral part of project planning for developments that involve significant environmental risk. The Office of the Department of Environment and Conservation has responsibilities for the regulation and administration in terms of policy advice and technical advisory support for the sustainable development of key sectors, such as coastal and marine ecosystems, water resources, agriculture and forestry; health and fisheries. Although the formulation and implementation of policy measures has been devolved to the provinces, there is an increased need to continue to fund and strengthen the capacities of local institutions and communities in dealing with climate change impacts. Government funding of environmental planning measures continues to be a major concern for remote local communities.[3]

[3] Papua New Guinea, above n 2, 4.

This paper outlines the action plan that PNG proposes to take in identifying the most relevant event-driven hazards, areas vulnerable to these hazards and the types of measures that would be adopted to either adapt to or mitigate these event-driven climatic changes and highlight a selection of event-driven climatic hazards that communities in PNG are adapting to and how they are dealing with issues of climate change.

Action Plan for Climate Change

Firstly, PNG is yet to enact any law on Climate Change. However, the PNG Government has been consulting closely with the Australian Government's International Climate Change Adaptation Initiatives (ICCAI*), the United Nations Framework Convention on Climate Change (UNFCCC)*, civil society and its development partners and has begun the process of putting together a credible and transparent system, equipped with the appropriate policies and mechanisms to assist PNG address climate change and carbon trading concerns. The Government, with assistance from its development partners and non-government Agencies has carried out a number of consultations and training programs with communities that have been identified as likely to be most affected. The government is also consulting with the local customary landowners (resource owners) and coastal communities so that they take ownership of these issues and take initiatives to adjust, adapt or take remedial actions in their specific areas or location. Whilst Government agencies such as the Office of Climate Change Development, PNG Forestry Authority, the Department of Environment and Conservation, including its development partners and the global community are involved, it is the local inhabitants who are taking strategic steps and action to adapt or mitigate climate change or take remedial action to prevent drastic outcomes as shown by a number of programs that are being funded as outlined in this presentation. Currently, the steps taken by both the Government of PNG and the local communities consulted have been directed towards preparing a policy strategy of adaptation and mitigation measures to address the impacts of climate change. PNG however needs funding and technical assistance to strengthen its capacity to address the impacts of climate change.

Identification of Hazards

According to the Copenhagen Accord there are six serious climate-induced hazards. These are identified as coastal flooding and sea level rise, inland flooding driven by irregular rainfalls, landslides triggered by increased rainfall intensity, the spread of Malaria amidst raising temperatures, as well as the variability in agricultural yields and sea temperature with

adverse effects on coral reef systems.[4] These hazards manifest themselves in PNG and being prone to such serious climate-induced hazards, PNG has undertaken certain action which will be discussed in this paper to illustrate PNG's progress in dealing with these climate-induced hazards.

Coastal Flooding

Coastal flooding is an event that affects most PNG coastal communities, infrastructure and industry.[5] As a strategy for addressing this issue, PNG has mapped populated coastal areas along the north coast of PNG stretching from Vanimo to Lae. The high resolution elevation data produced by this mapping effort improves the accuracy of inundation modelling which will enable PNG to understand current and future risk to infrastructure and communities.[6] For coastal risk assessment this elevation data is critical to calculating inundation projections, drainage, catchment boundaries, water flow and water sinks. It is also valuable for many other uses including infrastructure planning, evacuation planning and natural resource management. In addition, the Topographic LiDAR can also be used in conjunction with aerial imagery to produce maps of roads, structures and water courses. For disaster planning the data can be used to model storm surge and tsunami inundation. Furthermore, industry can use the elevation data to plan construction sites, monitor land subsidence, determine pipeline routes and detect changes in vegetation growth and assessing attributes such as vegetation volume.[7] PNG stands to gain greatly from using these data to plan, develop and adopt appropriate measures aimed at addressing these impacts including management activities to address coastal flooding, capacity building and training of relevant officials.[8]

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[4] Key National Policies, Plans and Actions, Adaptation Fund Proposal for Papua New Guinea, June 2011:http://www.pacificclimatechange.net/index.php/png-key-national-policies-plans-and-actions (Accessed Thursday, 20 November 2014).

[5] Ibid, 11.

[6] Australian Agency for International Development (AusAid), 'Papua New Guinea LiDAR Factsheet; Pacific-Australia Climate Change Science and Adaptation Planning' (September 2010) 1.

[7] Ibid.

[8] (AusAid), above n ; Papua New Guinea, above n (AusAid), above n 7; Papua New Guinea above n 2, 1-2; Key National Policies, Plans and Actions above n 5.

Rising Sea Levels

Again, most PNG communities reside in coastal areas and on low-lying islands. As such, they are exposed to the threat of rising sea levels. The impacts of this threat are beginning to be felt already through storm surges and high tides which invade inhabitants' land, homes and food gardens. One of the communities affected by the problem of rising sea levels is the community living the Carteret Islands, in the Autonomous Region of Bougainville, PNG. It is estimated that about 2,000 of its inhabitants are listed among the first people in the world forced to relocate because of rising sea levels due to global warming.[9] Saltwater has already caused damage to almost all of their freshwater sources and has destroyed food gardens. Negotiations with the Autonomous Bougainville Government (ABG) had begun in relation to an approved relocation plan which however is yet to be finalised.[10] Thus these '*climate change refugees'* face an uncertain future. Furthermore, there is also another group of 3,000 people on the Mortlock, Fead and Tasman atolls who are also facing the same effects of climate change. Although these communities have been taking action to adapt to their situation, such as building sea walls and planting mangroves, storm surges and high tides continue to wash away homes and food gardens.[11] These communities face an uncertain future and soon these atolls will disappear from the horizon.

Deforestation

PNG has a significant area of largely-intact tropical forest which is now facing an acute and imminent threat. Forests are a vital resource for the local population, particularly in remote rural areas of PNG where the local communities rely on their forest for food, fibre and building materials. The forest also provides support to a variety of wildlife and ecosystems. Although it is estimated by the Papua New Guinea Forest Authority (PNGFA) that approximately 60% of the total area of the country is covered by natural forests; about 52% of these natural forests are considered production forests (which can be harvested for timber

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[9] Humanitarian News And Analysis, A Service Of The UN Office For The Coordination Of Humanitarian Affairs, PAPUA NEW GUINEA: The World's First Climate Change "Refugees" http://www.irinnews.org/report/78630/papua-new-guinea-the-world-s-first-climate-change-refugees (Accessed 24/11/2014); The Sydney Morning Herald, Rising sea levels threaten PNG islanders, March 12, 2007 - 5:24PM, http://www.smh.com.au/news/World/Rising-sea-levels-threaten-PNG-islanders/2007/03/12/1173548094288.html, (Accessed 24/11/14).

[10] Ibid.

[11] Ibid.

and other products), and the remaining 48% are set aside for conservation (restricted from logging).[12] PNG is a leading proponent of REDD+, and one of the original UN-REDD 'pilot' countries. Whilst there are attempts to develop guidelines for free, prior and informed Consent (FPIC) and on developing technical elements of the country's national forest monitoring system in collaboration with the PNG Forest Authority; as well as building support for the operationalization of PNG's satellite forest monitoring system with the Office for Climate Change and Development,[13] these services are nonetheless dependent on funding assistance from bilateral government sources (e.g. JICA, EU, and Australia). Unless such funding continues, the continuity of these programs is uncertain. However, potential for private sector funding for REDD+ activities in PNG[14] is there. Most importantly, measures also have to be established as to how to ensure sustainable harvesting so that communities are able to benefit from these commercial activities.

Papua New Guinea's Responses to the Challenges of Climate Change

Climate change is affecting the lives of most Papua New Guineans. In order to mitigate the impacts of event-driven climate change conditions and patterns, PNG is committed to taking proactive steps to adapt and mitigate the impacts of climate change. The Office of Climate Change has commenced consultation with its coastal and low-lying island communities and has provided assistance through funding and training on the impacts of event-driven climate conditions. Through these programs some coastal and low-lying island communities such as Mbuke, Whal[15] and Ahus[16] Islands of Manus Province (discussed in the later part of this paper) are already implementing some programs to adapt or mitigate the event-driven

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[12]The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries; Key results and achievements of the UN-REDD National Programme in Papua New Guinea; <http://www.unredd.org/UNREDDProgramme/CountryActions/PapuaNewGuinea/tabid/1026/language/en-US/Default.aspx> 1 (Accessed 24/11/2014).

[13] Ibid.

[14] The REDD Desk, a collaborative resource for REDD readiness, http://theredddesk.org/countries/papua-new-guinea/financing (Accessed 24/11/2014) 1.

[15] Community Climate Change Adaptation in Manus Province, Papua New Guinea, https://www.youtube.com/watch?v=kql7tImYkso; Published on Oct 14, 2012.

[16] Participatory Video by the people of Ahus Island, Manus, PNG "Living with Changes" https://www.youtube.com/watch?v=xsjppJX8Vic.

climate change conditions, such as building sea walls or implementing a marine protection area to replenish their fisheries stock or plant a more resilient food crop.

At the national government level, PNG has set itself very high aspirations, economically and environmentally to transform PNG into a reference case for adaptation and mitigation action. PNG has set the following targets: [17]

- to achieve GDP per capita of USD 3,000 by 2030 as set out in our Vision 2050;
- reduce emissions of green-house gases, by at least 50% by 2030 driven mainly by abatement measures in land use, land-use change and forestry,
- become carbon neutral by 2050 and invest in low-carbon infrastructure today
- Reduce vulnerability to climate change associated risks such as gradual hazards (e.g., vector-borne disease) and event-driven hazards (e.g., landslides and flooding).

PNG has also committed itself to contributing to the ambitious agenda towards improvement of climate conditions by sequestering carbon in their forests, including placing effective control on the logging of its forest and implementing a forest adaptation program to prevent forest degradation. The current rate at which logging is being carried out in PNG is not a good sign of the effectiveness of these measures. With regard to impacts of coastal flooding, the mapping of low-lying coastal areas was made possible with the assistance of the Australian Government, the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, (DIICCSRTE) and Geoscience Australia which carried out the work to map and compile data on these areas.[18] This effort will greatly assist PNG in preparing for tsunamis and sea level rise. PNG has gained valuable data that has contributed greatly to assist PNG to plan, develop and adopt appropriate measures aimed at addressing the impacts of climate change, including how to manage activities that are directed towards addressing coastal flooding, capacity building and training of relevant officials. PNG now has information on the most relevant hazards and areas at most risk and thus with this information, PNG should be able to take appropriate action to adapt or mitigate

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[17] Office of Climate Change and Development Papua New Guinea, 'Updates on the Draft National Climate Change Policy' (Paper presented at the INA and IGES Workshop on A way forward – Needs challenges and opportunities for PNG on Climate Change, Land Use and Forest Resource Management and Payment for Environmental Services/REDD+, Kokoda Trail Motel, 7-8 January 2013), 3.

[18] (AusAid), above n 7.

these events should they occur. However, given that knowledge, funding such programs depends mostly on development assistance and non-government organisations.

Adaptation

Since signing the UNFCCC PNG has commenced its plans to adopt a number of strategies or apply measures to alleviate the impacts of climate change on its economy, people and country. Consequently, PNG firstly carried out a number of consultative programs with members of the public. The first such program was held in Manus Province from 20-21 September 2010. During the consultative phase of the programs, a number of event-driven climate change hazards were identified for action and were listed as: [19]

- Adaptation measures to climate change including building of sea walls;
- Community-based projects to protect coral reefs and coastal areas including legislation and establishment of support structures to guide and support communities in protecting their source of livelihood;
- Continuous supply of treated bed nets and anti-malarial prophylaxis and treatment and drugs to counter the spread of malaria to be supported by both the health and education sector; and
- Sourcing alternative measures of fresh water storage.

Manus island communities such as the Mbuke, Whal[20] and Ahus Islands[21] have begun their own community projects [22] with assistance from government and non-government organisation such as the WWF and The Nature Conservancy. These communities of Mbuke and Whal Islands have begun to adapt to their current climate change impacts and have taken steps to strengthen their food security by adopting new agricultural techniques and planting new varieties of food crops. For example, these communities have switched to planting yam instead of relying on sago which is normally planted on mainland Manus Island. They also now plant mangroves and have introduced and implemented protected marine areas to replenish their fish stock and have begun to build seawalls around their

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[19] *Office of Climate Change & Development,* Provincial Consultation Feedback Report 2011, *Manus Provincial Consultation Report 2010, http://www.occd.gov.pg/images/stories/documents/Manus-Provincial-Consultation-Report.pdf (Accessed 24/11/2014); 14-21.*

[20] Community Climate Change Adaptation in Manus Province, Papua New Guinea above n 16.

[21] Participatory Video by the people of Ahus Island, Manus, PNG "Living With Changes" above n 17.

[22] Community Climate Change Adaptation in Manus Province, Papua New Guinea above n 16.

shorelines. Similarly, the people of Ahus Island, who live in a very low-lying sand island off the north coast of Manus Island, are also experiencing difficult times. Erosion, overpopulation and overfishing affect their livelihoods. The communities have responded by establishing marine protected areas to manage their supply of fish and other marine resources.[23] As highlighted in the Mbuke and Whal Islanders, taking early preparation to protect their food security is vital for their future. On the other hand, the Ahus Islanders need more urgent assistance which could involve relocation. However, both these two communities also do require improvement in terms of water storage which are a major concern for the outer islands and atolls in Manus Province.[24]

Conclusion

As highlighted by the various programs that have been pursued by the Mbuke, Whal and Ahus Islanders of Manus Province, some of the impacts of climate change are inescapable. The events which are occurring already will continue and will invariably increase over time irrespective of the types of emission control or trading, remedial measures or adaptation programs that PNG adopts. Time is not on PNG's side. Although PNG is currently not a major contributor to global warming, if PNG continues to increase the rate of its deforestation and degradation, over time, PNG will become another country that contributed to global GHG emissions. Overall, PNG is an active participant in the global community under the auspices of the United Nations in contributing to address climate change and wider environment issues[25] as shown by the initiatives being undertaken by the coastal and low lying island communities aimed at adapting to their current environment.

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[23] Participatory Video by the people of Ahus Island, Manus, PNG "Living With Changes" above n 17.

[24] *Office of Climate Change & Development,* Provincial Consultation Feedback Report 2011 above n 20.

[25] Papua New Guinea Overview, Pacific Climate Change Portal, http://www.pacificclimatechange.net/index.php/country-profiles/papua-new-guinea, (Accessed 24/11/2014).