# Effects of Climate Change on Society, Culture and Gender Relevant to the Pacific Islands

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**EXECUTIVE SUMMARY**

The effects of climate change on Pacific Islands are expected to have significant implications for society, culture and gender. Social and cultural groups will be impacted differently, with some being disproportionately affected by climate change. These groups also play an important role in sharing information and should be consulted and included in all efforts to promote climate action. Inclusion of social and cultural considerations increases the effectiveness and efficiency of climate change policy and programme development, and builds resilience.

Traditional knowledge (TK) and practices are an important component of climate-related planning and of the response following climate events and natural disasters and have an important contribution to make in science-based and development programmes of action. Management planning is assisted by understanding how elements of cultural as well as religious practice or spirituality align and conflict with resilience planning objectives.

In some instances, women are prevented from fully contributing to climate-related planning, policy-making and implementation. Women can be key proponents of environmental protection and climate resilience.

Women face different and sometimes greater risks in disasters than men, although Pacific men may be more likely to participate in high-risk activities post-disaster and more hesitant to seek emergency medical attention.

Social / cultural assets and practices are valuable, and their loss and damage should be considered in valuations of climate change impacts. The concept of "loss and damage" is an emerging topic, and there may be value in adding cultural concepts to the loss and damage agenda.

## Introduction

This paper introduces the historical and present agency of Pacific people in preparing for climate events, the social and cultural dimensions of climate change impacts, and the value of inclusive approaches to the development and implementation of climate change responses. It addresses the role of traditional knowledge in climate planning and response, the impact of cultural loss and damage and the specific impacts of climate change on gender and marginalised groups. Finally, it attempts to indicate the present state of knowledge and priority knowledge gaps in the Pacific regarding climate change and societies and provides a basic list of existing tools, resources, and recommended actions.

**Climate change, society and inclusion**

Climate events, climate change, and natural disasters affect members of societies in an uneven pattern, with:

- Unequal distribution of preparedness and recovery practices and risk among social groups;
- Unequal distribution of adaptive capacity, or resilience, varying by knowledge and skills, economic resources, and social status or prescribed roles; and
- Reliance upon knowledge and skills valuable for resilience that are "location-based", considering physical as well as social location.

The risks from climate change and extreme climate events have direct and indirect impacts on education, food security, and medical care in addition to societal relationships. The loss and damage caused by climate change extends to cultural factors, including direct material losses as well as losses of mobility, displacement, loss of territory, loss of cultural heritage, or loss of local knowledge and language elements, among others.

While the consideration of social dimensions of climate change is growing, much work remains to effectively incorporate sociocultural dynamics and include potentially marginalised social groups, including indigenous peoples and local communities. At CoP23, the UNFCCC Parties established the local communities and indigenous peoples' platform to enhance their engagement in the UNFCCC process, allow for the sharing of their valuable experiences and knowledge, and strengthen the ability of local communities and indigenous peoples to address climate change[1].

There is also varied recognition of the roles, needs, and capacities of social groups, leading to impacts on their inclusion in decision-making, policy development, development assistance, and programmatic actions. Further, the capacity and willingness to engage with change (during development, climate change, or a project intervention) is intimately tied to cultural beliefs and roles: this engagement affects project efficiency and effectiveness, and longevity of the intervention. As such, climate change-related programmatic efforts should acknowledge and work to integrate

sociocultural dimensions that affect and are affected by project work.

There are advantages of including traditional communities as well as under-represented groups in the three stages or areas of climate change response action:

- research and knowledge collection;
- decision-making, from consultation to political appointments; and
- programmatic actions and outputs.

Intentional inclusion could increase the effectiveness of adaptation efforts, lowering programmatic costs due to the greater consensus and stronger engagement spurred by inclusivity, resulting in greater likelihood of knowledge uptake, behavioural change, and sustained attention to the project actions (Lane & McNaught 2009, Lui *et al.* 2017, see below). A further advantage is that including these additional groups or individuals creates access to their diverse knowledge, which could prove useful for climate adaption and resilience. Programmatically, monitoring the effectiveness and impacts of inclusion will depend on measurements and records of participation and engagement of the target social groups. While intentional inclusion should be a target of programmatic action or research, knowledge holders should define the rules of engagement or preferred modes of interaction as well as the storage preferences of their knowledge (Malsale *et al.* In press).

**Traditional knowledge (TK) and practices**

> *"The Tera is a coastal tree that rarely flowers; however, when it does flower in April or the end of May, a long dry season is certainly coming" (collected from a Panema elder, Vanuatu; COSPPac Project)*

> *Anderson (2002) describe the actions of local women successfully digging a new well for freshwater during a drought, because of their familiarity with the land and hydrology.*

Traditional knowledge (TK) and practices are an important component of climate-related planning and of the response following climate events and natural disasters (Fletcher *et al.* 2013, Charan *et al.* 2017, Plotz *et al.* 2017). Traditional knowledge is not

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[1] http://www4.unfccc.int/sites/NWP/News/Pages/Inidigenous-Peoples-and-Local-Communities-Platform-Update.aspx

distributed equally across all members of society, but rather is held by specific groups, such as elders, farmers, fishers, men's knowledge, and women's knowledge (Rapaport 1999, Malsale *et al*. In press). To effectively incorporate traditional knowledge in climate and disaster planning, the knowledge and knowledge holder must be recognized as valuable, identified and documented, and must be included in the climate change and disaster risk management planning processes. It is important to develop approaches that allow for the transmission of knowledge beyond and across projects to avoid burdening a community with multiple requests for similar information (Malsale *et al*. In press and references therein). For greatest effectiveness, resilience-building strategies should incorporate both traditional knowledge and innovation. Further, project-based interventions should ensure that traditional knowledge is not eroded or lost through implementation of new approaches, thus reducing resilience (i.e. maladaptation).

Pacific communities have and are still using traditional methods and techniques to forecast and respond to weather and climate events (Fletcher *et al*. 2013, Chand *et al*. 2014, Lui *et al*. 2017). These tools increase community cohesion and resilience.

There are advantages to including TK in science-based and development programmes of action. Traditional knowledge adds value to scientific analyses. For example, TK can provide information about past changes in climate and human responses for locations where contemporary climate monitoring was absent. Traditional knowledge and practices also help to provide a context and mode of response to scientific information. Inclusion of traditional knowledge, language and practices in the discussion and in project activities increases the uptake of knowledge, engagement of communities, and community resilience (Plotz & Chambers 2017, Lui *et al*. 2017).

Pacific communities have also used spirituality to prepare psychologically for climate change events alongside the practical function of church or fellowship-based community gathering:

> *"Messages that stress environmental conservation and stewardship, particularly if communicated within familiar and respected religious contexts, are likely to be more successful than secular ones"* (Nunn *et al*. 2016).

Recognition of these patterns can help to design interventions or to understand a community's choice to avoid extreme-event preparations (FINPAC 2016). Some elements of religious practice or spirituality align with resilience planning objectives, while others may appear to conflict, but in both cases, management planning is assisted by an understanding of these social elements.

Despite their value, traditional and cultural knowledge and practices face key threats today. Climate change may be altering the processes and conditions that drive local natural indicators, altering associated practices (Chand *et al*. 2014). In addition, urbanization, language decay, and cultural changes may undermine the traditional mechanisms of knowledge transfer (Rapaport 1999, Plotz *et al*. 2017, Malsale *et al*. In press, Lui unpubl. data). The rapid pace of social and environmental change can outpace the development and transmission of traditional knowledge.

**Cultural loss and damage**

> *"The things we value most, which are at risk to be lost and damaged due to climate change, we do not exchange on the market place, things such as sovereignty, a sense of community and a collective identity."* Dr Warner, UNU-EHS

Loss and damage "broadly refers to the impacts of climate change that cannot be avoided through adaptation or mitigation" (Serdeczny *et al*. 2016 and references therein). The concept of "loss and damage" is an emerging topic, and there may be value in adding cultural concepts to the loss and damage agenda, necessitating the development of quantification and valuation tools. Social and cultural changes can result from many co-occurring factors in addition to climate change, forming a complex and multi-faceted topic; here, we use the term "loss and damage" to specifically indicate those due to climate change.

A 2010 study projected the potential global cost of loss and damage as a result of climate change as US$275 trillion between 2000 and 2200, but excluded estimates of non-economic loss and damage (Craeynest *et al*. 2010). Non-economic, or non-market value, loss and damage includes components of cultural and social impacts (Serdeczny *et al*. 2016). These impacts are however tremendously difficult to quantify, especially for those not familiar with the cultural importance to a people of the asset being lost. Financial compensation is not equivalent to the cultural

loss (Morrissey *et al.* 2013, Snyder *et al.* 2003). In addition to losses, livelihood transitions as a result of climate change and other environmental impacts might also alter and/or increasingly monetize aspects of community life or relationships, with resulting cultural changes (Morrissey *et al.* 2013, Snyder *et al.* 2003). Elements of culture and societal roles develop in response to interactions with a specific physical landscape. Alterations of that landscape or of sustainable interactions with it thereby change not only traditional knowledge but also identity (Morrissey *et al.* 2013). Adaptation assistance, including the Adaptation Fund and the Green Climate Fund, is considered by some but not all to be a measure of assistance for the full range of loss and damage due to climate change.

One of the many tools that will be needed in the loss and damage space is a climate risk insurance scheme. Tuvalu has proposed a regional facility for climate change risk transfer products tailored to the needs of individual Pacific island states, separate from the existing Pacific Catastrophe Risk Assessment and Financing Initiative established by the Pacific Community, World Bank and the Asian Development Bank. The proposed facility would consider climate change impacts beyond disasters, including factors such as coral bleaching, drought, and other long-term changes.

> *Cyclone Heta resulted in the loss of 90% of the Niue National Museum collection, Niue's only museum.*

> *In many Pacific traditions, graves are placed on family land, and regular interaction is expected with the burial site. In Tuvalu, storm waves during cyclones have already exposed or eroded coastal burials, scattering human remains.[2]*

Case study:
It is impossible to extricate and separate the multiple dimensions of individual and cultural practice, making the translation of loss and damage into economic terms feel simultaneously irrelevant and essential. Stories, rather than dollars, can help to express this complex topic. The following personal story is offered by Siosinamele Lui, as one example of impacts on a Samoan family:

> *"I am part of a special generation in Samoa, old enough to remember how we used to live and aware of how my younger siblings have accepted new norms. In the early 1990s, Samoa was hit by a combination of natural disasters in the form of two severe cyclones (Ofa and Val), as well as a devastating taro blight[3] that effectively wiped out our staple food crop, combined with the post-colonial reality and emerging cash economies familiar to many developing nations."*

> *"My younger brothers are part of 'the rice generation'. It is obvious how the change from a garden crop to a staple bought with cash from a store altered our diet and economic activities, but there were other broader and more subtle changes, too. We stopped keeping pigs because of food competition—there were fewer coconuts to go around. Physical activities changed or decreased. Our priorities were getting food for the family today, subtly changing our relationship with plantations, livestock, and forward planning. Over time, these practical changes also changed our way of life or cultural practice."*

**Gender & marginalised groups**

> *Fijian women preserve cassava (tavioka) by drying during the cyclone season, as a potential post-disaster food (Charan et al. 2017).*

Climate change disproportionately impacts the poorest and most vulnerable members of society. Climate justice demands that these human beings "must be meaningful participants in and primary beneficiaries of climate action".[4] The roles, needs, and capacities of

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[2]     United Nations Office for the Coordination of Humanitarian Affairs (OCHA) 2015, available at https://reliefweb.int/sites/reliefweb.int/files/resources/Tuvalu %20Tropical%20Cyclone%20Pam%20Situation%20Report%20No .%203.pdf

[3]     From 1992 to 1993, the invasive disease taro leaf blight destroyed Samoa's USD ~4 million taro export business and led to the loss of about 40 traditional cultivars. SPC now keeps a plant 'genebank' with active research on drought-, salt- and disease-resistant food crops, a necessary component of disaster- and climate change-preparedness.

[4]     United Nations Human Rights, Office of the High Commissioner, available at http://www.ohchr.org/Documents/Issues/ClimateChange/KeyM essages_on_HR_CC.pdf (accessed 1.11.2016)

men and women to respond to climate change vary across communities and cultures. In the Pacific, many of the tasks with direct bearing on climate-related planning and disaster response are gender-, age- and status-segregated (Lane & McNaught 2009, Charan *et al.* 2017 and references therein). Education levels and societal roles also drive engagement and risk. The recognition of women's work and knowledge can vary substantially and is at risk during non-inclusive development-project interventions (Samoa Office of the Ombudsman 2015). Women's unequal participation in decision-making and labour markets compounds inequalities and prevents women from fully contributing to climate-related planning, policy-making and implementation. Yet, women can play a critical role in response to climate change and their inclusion has led to improved outcomes of climate related projects and policies.[5] However, few climate change initiatives in the Pacific integrate gender and human rights considerations across their design and implementation, weakening outcomes.[6]

Increasingly, global attention is turning to the roles and impacts of women in relation to climate change. The roles and therefore risks of men and women differ in both short- and long-term responses to climate change as well as preparation and response to disaster events. These differences necessitate different management responses, with the information monitored disaggregated according to gender. Globally, women and children are 14 times more likely than men to die during a disaster (UNISDR 2007), and a pattern of greater impact on Pacific women has been recorded for some natural disasters such as tsunami (Dominey-Howes 2009, UN Women 2016[7]). In particular, globally, women may face higher risks and greater burdens from the impacts of climate change in situations of poverty or hardship[5,6]; for example, the rural practice in Fiji of women eating what is left after the men have eaten may create a food security challenge after a natural disaster has affected crops, fisheries, and markets (Charan *et al.* 2017; Lane & McNaught 2009).

Women may also have reduced access to warnings, restricted or no say in relief prioritisation, or increased risk of abuse as well as sexually transmitted infections due to reduced use of prophylactics post-disaster (Charan *et al.* 2017, Lane & McNaught 2009).

Women and men also play significant but different roles and have different patterns of using natural resources.[8] Women play an important role in energy use, protecting water sources, household preparation and food provision. Women's participation and influence on food, water, land, and energy is essential for a sustainable Pacific. Women are known to influence the environmental practices and beliefs of the next generation (Ram-Bidesi 2015), and women are increasingly present in climate-related fields such as meteorology[9] and ocean management[10]. Given the relationship between community resilience and ocean resources in the Pacific islands region, it is particularly relevant that women harvest over half of small-scale fisheries catches in this region (Harper *et al.* 2013), although women's contributions in several countries remain under-estimated in part because their seafood-harvesting or preparation activities are not considered "fishing" (Kronen 2004, WWF 2012). Women's roles as farmers are often overlooked also, which limits their participation and access to decision-making, information and training to protect their environment (Charan *et al.* 2017). For example, over half of women in Fiji are defined as 'economically inactive' because their work is unpaid, household or community labour (Narsey Lal *et al.* 2009). Unfortunately, there is little published information on gender dimensions of the uses and management of natural resources, traditional knowledge, and roles in food security and disaster preparedness, in a climate change context (Lane & McNaught 2009, Bunce & Ford 2015, Charan *et al.* 2017). Measures supporting women's access to technical training and information about climate change, disaster management, food security and energy would better equip them to safeguard their environment and may make them more climate-resilient.

[5] http://unfccc.int/gender_and_climate_change/items/7516.php accessed 1.11.2016

[6] UN Women, 2015, "Pacific Gender and Climate Change Toolkit", http://www.unwomen.org/en/digital-library/publications/2015/9/pacific-gender-and-climate-change-toolkit accessed 1.11.2016

[7] UN Women, 2016, "Time to Act on Gender, Climate Change, and Disaster Risk Reduction"

[8] Communique of the Fourth Pacific Women's Ministerial Meeting, Nadi, Fiji, 20–22 July 2011

[9] http://www.sprep.org/factsheets/pacific-women-in-meteorology-samoa-factsheet

[10] https://www.sprep.org/pacific-voyage-un-ocean-conference-2017/women-ocean-leaders

Women are also underrepresented in international climate negotiations. According to the Women's Environment and Development Organization (WEDO)[11], "At the United Nations Framework Convention on Climate Change (UNFCCC), where negotiations will determine global climate policy, in 2015 women account for ~35% of all national Party delegates and ~26% of the Heads of Delegations. Research shows that gender imbalances differ across countries and regions. Women's participation… is ~21% in Africa and the Asia-Pacific region."

However, the Pacific situation is more complex than a male/female binary, and men are also negatively impacted. Age and cultural status level, which are often linked, form another essential dimension of risk. For example, Pacific men, particularly untitled young males, may be more likely to participate in risky post-disaster physical labour and less likely to seek emergency medical care (Lui pers. obs.). The other marginalised or potentially marginalised groups in the Pacific are understudied. These groups include gender roles outside of the man/woman binary, status groups such as untitled men, and groups based on age, ethnicity, educational level, or ability.

**Case study**

In SPREP's Pacific Adaptation to Climate Change (PACC) Project in the Federated States of Micronesia, water management efforts were almost derailed due to failing to account for women's knowledge in relation to water hydrology (Ronneberg 2017). Positive outcomes were ensured when the women were engaged and consulted. This included special permission allowing men to carry out heavy work in the all-female domain of the taro patches, which ensured that salt-resistant taro varieties that were also acceptable to local tastes were introduced and set up additional benefits through the return of mud crabs to the now replenished mangroves. Understanding women's roles in water management was critical: for example, water-borne diseases affect all but create more work for women. The experience from this project is that more inclusive design would increase the collection of valuable information like this. The design phase for multi-country projects should acknowledge cultural contexts. Further, disaggregated data can save lives through informing future planning and prevention responses (Ronneberg 2017).

**Risk of no action**

Risks that are likely to result if no action is taken to incorporate the social dimensions of climate change include:

- Loss of TK: the rapid pace of social and environmental change can outpace the development and transmission of TK. This loss impoverishes local community resilience and global resilience to climate change impacts.
- Loss of identity: loss and damage to cultural practice, TK, and expression can reduce social cohesion, with negative societal results.
- Loss of roles and language: as roles and relationships to environments change with environmental and social changes, language also changes because it is based on interactions with place, or environment.
- Increasing social inequality and loss of social mobility: notably, greater risks for women or low-status groups such as untitled men may combine with lower resilience to create a more disadvantaged group with fewer options for recovery.
- Increased vulnerability as informal settlement rises due to adaptive migration: people new to an area are less likely to hold local and practical environmental knowledge (e.g. McAdoo *et al.* 2009).
- Lower effectiveness or failure of adaptation/resilience projects: decreased uptake of information, engagement by stakeholders, and behavioural change or lack of relevance of project actions to the local situation can reduce the success of climate change interventions.

# Knowledge Gaps

There are a number of existing knowledge gaps and limitations:

- Effective mechanisms for reducing disproportionate impacts of climate change, within the cultural context, are not known or implemented;
- Effective mechanisms for recording and identifying knowledge holders, without

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[11]     http://wedo.org/what-we-do/our-programs/women-delegates-fund/, post updated 2016

burdening communities with requests and with continuity after short-term projects, are limited or under-used;

- Proportions of women meaningfully involved in climate and ocean management decision-making are under- or not recorded or reported;
- Women's engagement in marine and climate science and management is limited and/or not recorded; disaggregated data to quantify inclusivity are limited (Charan *et al.* 2017, Michalena, Morris, Singh, Straza pers. comm.). Recent attention is increasing the availability of data about women in fisheries and women's livelihoods based on marine resources, but there is very limited information about engagement in marine/climate science, ocean/climate management and decision-making;
- At present, there is no repository of statistics related to inclusion of social and cultural representatives in professional entities and decision-making bodies;
- Legislation and understanding of legislation relating to loss and damage, preservation of TK and climate knowledge, and community rights in a climate change context are limited or not yet developed (Malsale *et al.* In press);
- Measured links between health and climate change factors are not yet available;
- Mental health impacts of climate change and disaster impacts are not well understood, and Pacific communities may be less willing to discuss this topic; and
- Vulnerability of various sectors within communities; migrant populations may be more vulnerable to climate extremes due to lower local environmental knowledge (TK). The extent of the populations affected and their respective levels of vulnerability are currently unknown.

# Regional actions

Regional actions increasing social inclusivity in the response to climate change have been proposed or implemented in the Pacific, including:

- Climate change factors have been added to the Pacific Regional Culture Strategy[12].
- The Climate & Ocean Support Program in the Pacific (COSPPac)[13] considers TK for climate and weather forecasting and climate communication. Project actions can add to the body of disaggregated data. The COSPPac Project aims for gender mainstreaming and actively encourages both genders to participate in training and in other aspects of the project, including community engagement. As part of this effort, they collate statistics on gender participation in project actions.
- Gender mainstreaming efforts are growing for national climate change policies, with support from UN Environment, UNDP, and others including regional CROP agencies, many of which have their own internal gender policies. Inclusion is often considered for women first, then more broadly. Regional dialogues provide spaces to advance gender-mainstreaming skills and raise awareness of best practices.
- Efforts to support inclusive climate negotiations elevate skills including, among others, a Pacific Women's Climate Change Negotiation Workshop was facilitated in February 2017 by the Women's Environment and Development Organization (WEDO) and supported by the Government of Australia and the Pacific Islands Forum Secretariat. There has been extensive regional training for negotiations, with guides such as Taking the Floor[14] and MEA Negotiator's Handbook[15].
- A regional facility has been proposed by Tuvalu for climate change risk transfer products.
- Awareness-raising efforts advocate for recognition of the existing roles women play in climate and ocean management and of mechanisms for inclusion, e.g.:
  - "Healers of Our Ocean" initiative[16]
  - SPC Women in Fisheries Bulletins[17]
  - "Moana Voices" magazine[18]
  - Women, Environment and Climate Change dialogues (UN Environment, SPREP and partners)

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[12]http://www.spc.int/DigitalLibrary/Doc/HDP/Culture/52165_Regional_culture_strategy.pdf
[13]     http://cosppac.bom.gov.au/
[14]     http://www.sprep.org/publications/taking-the-floor
[15]     http://www.sprep.org/mea_handbook

[16]     https://www.sprep.org/pacific-voyage-un-ocean-conference-2017/women-ocean-leaders
[17]
http://www.spc.int/coastfish/en/publications/bulletins/women-in-fisheries.html
[18]     http://www.ffa.int/node/1899

- o Newly established Pacific Women in Climate Change Roundtable (Conservation International and partners)

**Tools and resources**

The following tools and resources specific to Pacific islands are available:

- Regional guidelines for environmental (and social) impact assessment (EIA)[19] and climate change mainstreaming tools[20]. Environmental impact assessment includes the impacts of environments on societies and of societies on the environment, and it is increasingly recognised that the EIA process must include climate change in its scope.
- Pacific gender and climate change toolkit[21] – SPC, UNDP, UN Women, GIZ, SPREP. Designed to support climate change practitioners in the Pacific integrate gender into programmes and projects.
- Pacific Climate Change Portal[22] and national portals. A regional search interface for climate information resources in the Pacific region across a range of sources, with over 1,000 datasets and documents relevant to climate change and disaster risk.
- Traditional Knowledge Database: national databases for the storage and use of TK associated with weather and climate prediction in the Pacific (Chambers *et al.* 2017), for five Pacific countries to date. Contact: siosinamelel@sprep.org, pacmetdesk@sprep.org
- Climate dimensions of the Pacific Regional Culture Strategy[23]
- Research paper: Plotz RD, Chambers LE, Finn C. (2017) The best of both worlds: A decision-making framework for combining traditional and contemporary forecast systems. Journal of Applied Meteorology and Climatology 56: 2377–2392.
- Website: COSPPac http://cosppac.bom.gov.au/traditional-

knowledge/; SPREP https://www.pacificmet.net/products-and-services/traditional-knowledge. Regionally coordinated program to support Pacific National Meteorological Services in collecting, storing, analysing and publishing traditional knowledge on weather and climate.

Global tools and resources:

- UNFCCC Clearing House for Risk Transfer[24]
- Global Gender & Climate Alliance reports
- UNDP Gender Mainstreaming in Development Projects: A perspective from the Asia-Pacific region
- Green Climate Fund (GCF) Gender Policy and Action Plan
- Global Environment Facility (GEF) gender mainstreaming

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[19] https://www.sprep.org/publications/strengthening-environmental-impact-assessment-guidelines-for-pacific-island-countries-and-territories

[20] https://www.pacificclimatechange.net/project/implementation-strategic-program-climate-resilience-pacific-region-adb-project-number-46449

[21] https://www.pacificclimatechange.net/document/pacific-gender-climate-change-toolkit-complete-toolkit

[22] https://www.pacificclimatechange.net/

[23] http://www.spc.int/DigitalLibrary/Doc/HDP/Culture/52165_Regional_culture_strategy.pdf

[24] http://unfccc-clearinghouse.org/

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