



Climate Change and Development Community



Solution Exchange for the Climate Change and Development Community Consolidated Reply

Query: Implementing the Nauru Water Sector Policy - Examples; Experiences

Compiled by [Irene Prasad](#), Research Associate, with additional support from [Jennifer Namgyal](#), [Sarah Figge Hussain](#), and [Ashwini Prabha](#), Community Facilitator
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From [Mavis Depaune](#), Department of Commerce, Industries and Environment, Government of Nauru, Yaren, Nauru
Posted 22 November 2011

Greetings dear Community members,

I am Mavis Depaune working in the department of Commerce, Industry, and Environment (CIE) for the Government of Nauru, on the Pacific Adaptation to Climate Change (PACC) project. I'm happy to be posting the very first query on the Pacific Solution Exchange, Climate Change and Development Community.

In 2010, the Nauru Government, with the support of the regional Integrated Water Resources Management (IWRM) project, began developing a Nauru Water, Hygiene & Sanitation Policy.

The policy focuses on providing a framework for improving water management and the best use of the nation's water resources as well as assigning roles and responsibilities among government agencies for priority implementation. It also focuses on providing public awareness of government's commitment and leadership on addressing water issues.

The policy has 38 priority areas, which are grouped under the following headings: Climate variability and change and the vulnerability of water resources; Water Supply and Quality; Demand; Sanitation and Environment; Governance; Capacity and Community Awareness and Engagement.

The policy has already progressed through community and technical consultations as well as the CIE Project Steering Committee (CIE PSC). It was endorsed by the National Development Committee (NDC) on the 11th November 2011. It is now awaiting cabinet endorsement and approval.

To help us implement the provisions of this policy, we would like to be able to draw on innovative tools, lessons learned, and best practices that others have applied to improve management of their water sector. Specially, we would like to ask members for the following:

- Could you share any action plans, step-by-step guidelines, or specific tools and technologies for implementing on the ground any of the topics in our priority areas above?

- What implementation experiences could you offer for these items, in terms of success and lessons learned, with particular attention to coordinating relevant projects in different government departments, and on monitoring and evaluation of outcomes?
- What practical experience you might have in mainstreaming climate change risks into national and sectorial development plans or if not mainstreaming climate change what advice could you offer with other mainstreaming (gender or environmental sustainability) efforts?

The information you provide will help us tremendously to further the implementation plan of our policy, and allow us to strategically build capacity to systematically implement a climate adaptation-related policy at the national and sector levels. This will be our country's first national approach to better manage one of our most vital resources and to ensure that it takes full account of changes in climate. Your feedback and advice on this will be vital and will give us the confidence to move forward.

Responses were received, with thanks, from

1. [Marc Overmars](#), Asian Development Bank (ADB), Suva, Fiji
2. [Ruth Maetala](#), Author, Solomon Islands
3. [Norman H. Barth](#), US Embassy, Suva, Fiji
4. [Rebecca McNaught](#), Red Cross Red Crescent Climate Centre, Australia
5. [Stuart Orr](#), WWF International, Switzerland
6. [Sunetra Lala](#), Water Community, Solution Exchange India, New Delhi, India
7. [Kevin Petrini](#), United Nations Development Programme (UNDP) Pacific Centre, Suva, Fiji
8. [Damian Young](#), Morphum Environmental, New Zealand
9. [Kautuna Kaitara](#), Kiribati Adaptation Program Phase III, Project Management Unit, Tarawa, Kiribati
10. [Malakai Niulevu](#), Water and Sewerage Department, Ministry of Works, Transport and Public Utilities, Suva, Fiji
11. [Dave Hebblethwaite](#), SOPAC-SPC Water & Sanitation Programme, Suva, Fiji
12. [Simione Koto](#), Live & Learn Environmental Education, Suva, Fiji
13. [Clive Carpenter](#), GWP Consultants LLP, United Kingdom*

**Offline Contribution*

Further contributions are welcome!

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Summary of Responses

As the impact of climate change takes its toll on the vulnerable Pacific, many Pacific Island Countries (PICs) are working to become more resilient. This first query, from Nauru, sought help from members of the Climate Change and Development Community with the implementation of their new National Water Policy. Members responded by offering both examples of implementation plans and strategies to better inform Nauru's efforts, as well as experiences from other countries on ways to ensure the effective implementation of the policy.

The query sought a wider perspective on the issues faced, to help ensure that the Nauru experience benefits from the full range of comparative experiences. Members were able to contribute several relevant ideas, action plans, tools, and experiences on water policy implementation. One member organized the issues into vulnerabilities from climate variability and change, water supply and quality, and water governance, which we look at in more detail below.

Exploring the issue of **climate variability and change**, members noted that among the more relevant considerations for the Nauru plan is that, like many other small island states, Nauru is a highly water constrained island country and extremely susceptible to impacts of climate change. The seasonal forecasts for early 2012 predict that Nauru is likely going to receive 70% below normal precipitation. This exacerbates pressure on its water resources as Nauru seeks to implement its National Water Policy.

In this context, respondents recommended a number of resources, including those from the [International Research Institute for Climate and Society \(IRI\)](#) and the [US's National Oceanic and Atmospheric Administration \(NOAA\)](#), offering climate information, educational opportunities, and tools for water resource managers in "climate-smart water management." A publication on adaptation and coping strategies for Caribbean and Pacific island countries was also available.

Several members shared climate seasonal forecasts for drought preparedness and longer term adaptation planning. Discussants drew attention to an emerging field, climate services, which are becoming available from NOAA and [World Meteorological Organisation \(WMO\)](#). They also cited the country reports from the new [Pacific Climate Change Science programme](#). Another resource shared was a [how-to guide for integrating climate change adaptation into water sector policy and planning](#). A GEF/WHO-funded [study](#) with the Fiji Ministry of Health looked at effects of too much and too little water on human health. Respondents also highlighted India's National Action Plan for Climate Change, which includes a "[National Water Mission](#)" that, among other things, ensures water basin level management strategies to deal with variability in rainfall and river flows due to climate change.

Additionally, members shared several tools relating to the extensive work done on climate change adaptation at community level, including participatory learning, risk screening, outreach, monitoring, gender-sensitive approaches, mainstreaming, and WASH programme implementation. The work of the [SPC-SOPAC Water & Sanitation Programme](#) was also mentioned. They have been working with the Nauru Government in the water sector, through the EU-funded Integrated Water Resources Management (IWRM) National Planning Programme, which has been generating a number of water policy products and lessons through collaborative work with 13 other Pacific Island Countries.

Water supply and quality have been key components of the various phases of the ongoing [Kiribati Adaptation Programme \(KAP\)](#) in **Kiribati**. Members highlighted KAP's experience in developing sustainable sources of water where sufficient groundwater is not available and suggested islands like Nauru could find this a source of useful information. Other experiences shared involved a private sector company in [New Zealand](#) that provided supply management tools and techniques to communities to help them manage their water supplies better.

Responding to the second and third parts of the query, members suggested several **water management** strategies, including the lessons learned from implementing the various phases of KAP. They also shared the contact information for the [IWRM focal points](#) in the Caribbean and the Pacific, suggesting Nauru policy makers contact them to gain more insights on water management.

Along with resources, discussants shared an experience from the Red Cross Red Crescent Climate Centre in [Fiji, Tuvalu, and Kiribati](#), which offered insights on raising awareness of the importance of conserving water and maintaining hygiene. An experience from the [Solomon Islands](#) demonstrated the importance of taking lessons learned from gender mainstreaming programmes and applying them to

water management. In addition, a case study from [Kenya](#) highlighted various incentives and approaches to educate national decision makers on the role of water in the local economy. Members also underscored the role that traditional knowledge and good governance can play for small islands like Nauru.

Overall, the respondents provided a wide-ranging set of perspectives, demonstrating a rich and varied range of resources and experiences that small island states could find useful when implementing water sector policies.

Comparative Experiences

Republic of Kiribati

3rd Phase of the Kiribati Adaptation Program (KAP) Focuses on Coordinating Management of Water Resources, North and South Tarawa (from [Marc Overmars](#), Asian Development Bank, Suva, Fiji)

Starting in 2003, the KAP began working to build resilience to climate change at the national, island and community levels. Over the past 8 years, the program has gained experience with Monitoring & Evaluation, with an emphasis coordinating the use of water resources (including at the policy level) as well as on coastal management. Now in its 3rd phase, KAP is scaling up towards the goal of benefiting 100,900 citizens to improve water resources and better protect its coast against storm waves and flooding. Read [more](#)

From [Clive Carpenter](#), GWP Consultants LLP, United Kingdom

Working with Communities Improves Water Resource Management

While implementing Kiribati Adaptation Program II, water resources and water supply were evaluated to improve wet season rainwater capture, retention, and usage, and improve construction designs by making simple improvement. The work also targeted and developed best practice community engagement and management of local water and land resources. However, implementation was slow, hampered by the lack of local experience, shipping delays and land ownership and land access issues. Read [more](#)

Rainwater Harvesting Helps Community Mitigate Drought, Ocean Island

Under the Kiribati Adaptation Program (KAP) II, the project utilised communal and governmental infrastructure for rainwater harvesting (RWH). On Banaba, they designed a strategic drought water reserve using the former phosphate buildings and ship ballast water tanks. This, in conjunction with household and community building RWH and sensible dry season rationing, was designed to make the island effectively drought resilient in terms of water supply. Read [more](#)

Building Capacity Improves Implementation

Under Kiribati Adaptation Program (KAP) II, tender training workshops were conducted for local contractors to build their capacity to implement the project. In addition, extended material arrival schedules were programmed and detailed and extensive community engagement processes implemented. This capacity developed proved essential to implementing the construction works under the project. Read [more](#)

From [Damian Young](#), Morphum Environmental, New Zealand

New Zealand

Risk Assessment Supports Policy Development for Managing National Resources, Hauraki Gulf Islands, Auckland Hauraki Gulf

Morphum Environmental Ltd. developed a GIS based risk assessment to plan and develop an on-site wastewater disposal. A GIS model was used for the risk analysis- allowing the land surface to be allocated into a grid. Each grid was assigned a "rating" for each risk-contributing factor. Outputs from the model, are being used by community leaders to supports the definition of policy and development of operational criteria for protecting and managing scarce natural resources. Read [more](#)

Three Waters Benchmarking Project, Auckland

In 2008, Morphum Environmental Ltd was hired by Auckland City's water supply provider to project manage the Water Services Australia Association benchmarking project. The framework was accepted by key local authorities to benchmark network performance. Because the project requires exhaustive data collection and reporting outputs to an independent auditable level, the Association is able to understand where data gaps exist and how to programme and plan for future benchmarking exercises. Read [more](#)

City Develops Water Resilience Framework to Better Manage Water Resources, Auckland

The Auckland Council Environmental Strategy & Policy Department recognized the need for direction to responsibly manage water resources in an integrated manner. So the Council, along with Morphum Environmental Ltd and several water specialists created a framework for the "Auckland Water Policy & Management." Its central themes are sustainability, adaptive capacity, and resilience. Now the Council is in a position to draft policies and develop institutional procedures to meet community needs. Read [more](#)

Fiji

From [Rebecca McNaught](#), Red Cross Red Crescent Climate Centre, Australia

Pilot Project Focus on Integrating Health Risks into Climate Change Adaptation Efforts

The Global Environment Facility (GEF) and the World Health Organization (WHO), in collaboration with the Fiji Ministry of Health are implementing a pilot project called "Piloting climate change adaptation to protect human health." The project is exploring the effects of too much and too little water and their implications for human health. It is using a programmatic approach for responding to climate change induced health risks. The government is now implementing a set of nationally activities. Read [more](#)

Fiji, Tuvalu, and Kiribati

Effective Use of Information Improves Implementation of Plans

The Fiji, Tuvalu, and Kiribati Red Cross Societies used La Nina updates to raise awareness about conserving water and importance of maintaining good health and hygiene when water scarce. They also used the seasonal early warning info to develop relationships with national MET services and government partners. Tuvalu Red Cross included water use and hand washing messages in its regular radio spot. This information helped the Islands take decisions to protect its citizen's health and well-being. Read [more](#)

Solomon Islands

Lessons from Implementation of Gender Mainstreaming Policy (from [Ruth Maetala](#), Author, Solomon Islands)

After a few years of trying to implement the country's Gender and Development Policy, the Research Policy and Planning Unit in the Ministry for Women Youth and Children Affairs learned that it was important to involve key line Ministries where policy implementation would be relevant. It also learned that where policy gaps existed, a sectorial approach to mainstreaming gender worked it worked well, and consultation and networking proved the two main ingredients for effective policy implementation.

Kenya

Report Argues Case for Investing Long Term in Water Resource Management (from [Stuart Orr](#), WWF International, Switzerland)

In a report, the WWF International looked at water from Lake Naivasha from a shared risk and opportunity perspective to help the Ministry of Finance and Treasury gain a basic economic understanding of how water underpins their economy. The report made the business case for investing in water, so that in the long run there is significantly lower risk and the foundation for development and progress is secure. It also stressed the benefits of cooperation. Read [more](#)

Related Resources

Recommended Documentation

Adaptation Program Phase II - Pilot Implementation Phase (KAP II) (from [Clive Carpenter](#), GWP Consultants LLP, United Kingdom*)

Note; The World Bank; 2011

Available

at:

<http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=441920&Projectid=P089326>

Provides details on various phases of project; lessons learnt from this can be applied to similar projects, like areas with water scarcity issues

From [Marc Overmars](#), Asian Development Bank, Suva, Fiji

Kiribati: Kiribati Adaptation Program (KAP) - Phase III

Note; The World Bank; 2011

Available at:

<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/PACIFICISLANDSEXTN/0,,contentMDK:23002032~menuPK:441893~pagePK:2865066~piPK:2865079~theSitePK:441883,00.htm>

Describes ongoing national adaption program focused on providing safe water and maintaining resilient coastal infrastructure, has experience with M&E and coordination at national level

Climate Risk Management Training, Exercise 5: Integrating Forecasts into Institutional Decision-Making Processes

Exercise; Climate Risk Knowledge: Materials and Tools for Technical Professionals to Better Manage Climate Risks in the Water Sector, Climate Program Office, NOAA, and Columbia University

Available at: <http://crk.iri.columbia.edu/water/course/category.php?id=18>

A role-play exercise on water allocation decision processes, stakeholder roles from specified policy context, decision making and relating issues

Enhanced Application of Climate Predictions in Pacific Island Countries: An Overview

Note; Pacific Islands-Climate Prediction Project, Bureau of Meteorology and AusAID, Australian Government

Available at: <http://www.bom.gov.au/climate/pi-cpp/summary.shtml>

Describes a project designed to enable participating PICs to generate and make use of seasonal predictions, to assist in making better-informed decisions on climate and water related issues

Water Safety Plan (WSP) Manual: Step-by-Step Risk Management for Drinking-Water Suppliers

Manual; by J. Bartram, L. Corrales, et. al; World Health Organization and International Water Association; Geneva; 2009

Available at: http://whqlibdoc.who.int/publications/2009/9789241562638_eng.pdf (PDF, Size: 1.66 MB)

Guide on how to develop and implement a WSP, using 11 learning modules; offers sensible adaptation measures and encourages using a risk-based approach to maintaining water safety

Drinking Water Safety Planning: A Practical Guide for Pacific Island Communities

Guide; by M. M. Mudaliar, C. Bergin and K. MacLead; WHO, South Pacific Office, AusAid and SOPAC, Pacific Islands Applied Geosciences Commission; Suva, Fiji

Available at: <http://www.pacificwater.org/userfiles/file/WSP%20Guideline%20for%20Pacific.pdf> (PDF, Size: 3.8 KB)

Assists drinking water supply operators and managers improve the day-to-day management of safe drinking water supply for consumers.

Perspectives on Water and Climate Change Adaptation: Adapting to Climate Change in Water Resources and Water Services in Caribbean and Pacific Small Island Countries

Paper; Cooperative Programme on Water and Climate (CPWC), IUCN, the International Water Association (IWA) and World Water Council; 2009

Available at: http://www.pacificwater.org/userfiles/file/water%20publication/3_%20Small%20Island%20Countries.pdf (PDF, Size: 2.66 MB)

Part of a series on perspectives in water & climate change adaptation, provides information on water management, could be used when designing & implementing a water sector policy

From [Norman H. Barth](#), US Embassy, Suva, Fiji

IRI Multi-Model Probability Forecast for Precipitation for December-January- February 2012

Image; The International Research Institute for Climate and Society (IRI); 2011

Available at: <http://www.solutionexchange-un.net/repository/pc/ccd/cr1-res1-en.gif>

Model for precipitation forecast for predicting quantity of rainfall/water in the Pacific; useful for policy makers when planning for water consumption and disasters

World Meteorological Organisation: Press Release No. 861, World Climate Conference - 3 Establishes a Global Framework for Climate Services

Press Release; World Meteorological Organization (WMO), Geneva; 3 September 2009

Available at: http://www.wmo.int/pages/mediacentre/press_releases/pr_861_en.html

Framework designed to strengthen production, availability, delivery, & application of science-based climate prediction & services, providing key information for water resource management

Are We Entering an Age of Mega-Fires?

Article; by Kevin Krajick; State of the Planet Blog; The Earth Institute, Columbia University; 19 December 2011

Available at: <http://blogs.ei.columbia.edu/2011/11/16/farmers-flames-and-climate-are-we-entering-an-age-of-mega-fires/>

Describes the development and implementation of strategies to manage climate related risks (fires) and opportunities in sectors such as agriculture, food security, water resources, and health

Details on Morphem Environmental Water Projects (from [Damian Young](#), Morphem Environmental, New Zealand)

Note; Morphem Environmental Ltd.; December 2011

Available at: <http://www.solutionexchange-un.net/repository/pc/ccd/cr1-res3-en.pdf> (PDF, Size: 212.4 KB)

Describes some of Morphem's experiences with water projects done in Auckland, including suggested ideas/concepts that could be applied to other water projects

From [Rebecca McNaught](#), Red Cross Red Crescent Climate Centre, Australia

Pacific La Nina Case Study

Report; IRI/Climate Centre; 6 December 2010

Available

at: <http://www.climatecentre.org/downloads/File/IRI/Pacific%20La%20Nina%20Case%20Study.pdf> (PDF, Size: 350 KB)

Contains monthly seasonal forecast info for 3 months, could be used to identify how the current La Nina event combined with other factors in the climate system, is likely to affect various areas

Piloting Climate Change Adaptation to Protect Human Health

Note; Adaptation Learning Mechanism; 2009

Available at: <http://www.adaptationlearning.net/project/piloting-climate-change-adaptation-protect-human-health>

Describes project working to increase the adaptive capacity of national health system institutions to respond to climate change-sensitive health risks, could be used by policy makers

How to Integrate Climate Change Adaptation into National-Level Policy and Planning in the Water Sector: A Practical Guide for Developing Country Governments

Manual; by Paul Venton, edited by Jane Cacouris and Courtenay Cabot Venton; Tearfund International Learning Zone; 6 October 2011

Available at: <http://tiny.cc/tr3za> (PDF, Size: 948 KB)

Practical guide for developing country governments, donors, and civil society to integrate resilience and adaptation into their water sectors

From [Stuart Orr](#), WWF International, Switzerland

Shared Risk and Opportunity in Water Resources: Seeking a Sustainable Future for Lake Naivasha

Report; Pegasys Strategy and Development; WWF International; 2011

Available at: http://www.wwf.de/fileadmin/fm-wwf/pdf_neu/lake_naivasha_report_02_2011.pdf (PDF, Size: 1.6 KB)

Describes the risks faced by the lake and sustainability measures; similar approach can be applied for other water resources

WWF Water Security Series 4: Understanding Water Risks - A Primer on the Consequences of Water Scarcity for Government and Business

Report; by Stuart Orr, Anton Cartwright and Dave Tickner; WWF International; March 2009

Available at: http://assets.wwf.org.uk/downloads/understanding_water_risk.pdf (PDF, Size: 1.2KB)

Sets out key concepts in water management focusing on the inter-related issues of water scarcity, climate change, infrastructure, and disaster risk reduction

From [Sunetra Lala](#), Water Community, Solution Exchange India, New Delhi, India

National Action Plan for Climate Change

Plan; Prime Minister's Council on Climate, Government of India; 2009

Available at: http://pmindia.nic.in/climate_change.htm

Compilation of actions taken by India to address challenge of climate change, proposed actions & national programmes addressing climate change, could be resource for designing water policy

National Water Mission under National Action Plan on Climate Change: Comprehensive Mission Document, Volume 1 (revised draft)

Plan; Government of India, Ministry of Resources, New Delhi; 2009

Available at: <http://india.gov.in/allimpfrms/alldocs/15658.pdf> (PDF, Size: 718 KB)

Sets out India's national water mission with strategies and goals identified to help in water conservation practices and achieve sustainable development goals and efficient management.

Water Adaptation in National Adaptation Programmes for Action: Freshwater in Climate Adaptation Planning and Climate Adaptation in Freshwater Planning

Paper; by Gunilla Björklund, Håkan Tropp, Joakim Harlin, Alastair Morrison and Andrew Hudson; The UN World Water Assessment Programme, United Nations Educational, Scientific and Cultural Organization (UNESCO), and United Nations Development Programme (UNDP); Paris, France; 2009

Available at: <http://unesdoc.unesco.org/images/0018/001818/181887e.pdf> (PDF, Size: 1.12 MB)

Dialogue paper that reviews state of the world's freshwater resources and provides decision-makers with the tools to implement sustainable use of water

Integrated Water Resources Management and Strategic Environmental Assessment – Joining Forces for Climate Proofing

Paper; Cooperative Programme on Water and Climate (CPWC), IUCN, the International Water Association (IWA) and World Water Council, Netherlands Commission for Environmental Assessment

Available

at:

http://www.worldwaterforum5.org/fileadmin/wwc/Library/Publications_and_reports/Climate_Change/Pers_Pap_16_IWRM_and_SEA.pdf (PDF, Size: 1.27 MB)

Part of a series on perspectives of how climate change, through impacts on global hydrology, could affect food security therefore emphasizing on broader water policies for coping effectively

Adapting to Climate Variability: Pumpkins, People and Policy

Paper; by Gina Ziervoge, Sukaina Bharwani and Thomas E. Downing; Natural Resources Forum 30; 21 December 2006

Abstract available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1477-8947.2006.00121.x/abstract>

Investigates local adaptation strategies to climate variability, focusing on agricultural decision-making in a communal irrigation scheme, could be reference when preparing water sector plans

From [Kevin Petrini](#), UNDP Pacific Centre, Suva, Fiji

Community-Based Risk Screening Tool – Adaptation & Livelihoods

Brochure; International Institute for Sustainable Development (IISD); 2011

Available at: <http://www.iisd.org/publications/pub.aspx?pno=854>

A project planning and management tool that helps users to integrate risk reduction and climate change adaptation into their community-level work, possible reference for water sector planning

Facilitators Guide for Outreach Toolkit: Adapting to a Changing Climate Support for Micronesian Communities

Guide; by Meghan Gombos, Scott Atkinson and Supin Wongbusarakum; PIMPAC, Micronesia Conservation Trust, The Nature Conservancy, and Micronesia Challenge; Federated States of Micronesia; September 2010

Available at: <http://www.cakex.org/sites/default/files/Flipchart%20Facilitator%20Notes%20FINAL.pdf> (PDF, Size: 564 KB)

Provides talking points for "Adapting to a Changing Climate" Flipchart outreach tool with details on concepts & info to convey key messages about climate change vulnerability & adaptation

Community Based Approaches in the Pacific, Reference Guide

Guide; International Federation of Red Cross and Red Crescent Societies (IFRCRCS)

Contact Kevin Petrini at kevin.petrini@undp.org, UNDP Pacific Centre, Suva, Fiji for a copy

Guide contains practical, hands-on ideas for working with communities in the Pacific - part 1) planning community-based approaches, part 2) implementation, and part 3) follow up & M&E

Gender, Climate Change & Community Based Adaptation: A Guidebook for Designing & Implementing Gender-Sensitive Community Based Adaptation Programmes and Projects

Guidebook; United Nations Development Programme (UNDP); 1 July 2010

Available at: http://www.beta.undp.org/undp/en/home/librarypage/environment-energy/climate_change/gender/gender-climate-change-and-community-based-adaptation-guidebook.html

Presents experiences and examples of Community-Based Adaptation (CBA) Programme worldwide; will be useful to review cases of gender mainstreaming in CBA projects.

Participatory Learning and Action 60 - Community-Based Adaptation to Climate Change

Report; edited by Hannah Reid, Mozaharul Alam, Rachel Berger, Terry Cannon, Saleemul Huq and Angela Milligan; International Institute for Environment and Development; December 2009

Available at: http://www.planotes.org/pla_backissues/60.html

Focuses on recent approaches to climate change adaptation, which are community-based and participatory- approaches & lessons learnt could be applied to water related adaptation projects

Screening Tools and Guidelines to Support the Mainstreaming of Climate Change Adaptation into Development Assistance – a Stocktaking Report

Report; by Anne Olhoff and Caroline Schaer; United Nations Development Programme (UNDP); New York; 2010

Available at: http://www.adaptationlearning.net/undp_screening-tools-and-guidelines

Explores rationale for mainstreaming, outlines main components necessary to operationalize mainstreaming, & illustrates key climate change adaptation & mainstreaming concepts & use

From [Kautuna Kaitara](#), Kiribati Adaptation Program Phase III, Project Management Unit, Tarawa, Kiribati

Rainwater Harvesting Guidelines: Design, Construction and Specification for Government of Kiribati

Guidelines; GWP Consultants; United Kingdom; July 2011

Available at: <http://www.solutionexchange-un.net/repository/pc/ccd/cr1-res1-en.pdf> (PDF, Size: 5.32 MB)

Details designs and specifications on rainwater collection methods; can be used for collecting rainwater especially in drought/less rainfall regions

Household Rainwater Harvesting Guidelines for Government of Kiribati

Guidelines; GWP Consultants; United Kingdom; July 2011

Available at: <http://www.solutionexchange-un.net/repository/pc/ccd/cr1-res2-en.pdf> (PDF, Size: 1.9 MB)

Describes how to collect & store rainwater during rainy season to provide a more reliable water supply to households and communities during droughts, could be applied in Nauru

Water Supply Management Plan (WSMP) (from [Malakai Niulevu](#), Water and Sewerage Department, Ministry of Works, Transport and Public Utilities, Suva, Fiji)

Plan; Government of Fiji

Available at: <http://www.solutionexchange-un.net/repository/pc/ccd/cr1-res4-en.pdf> (PDF, 211.3 KB)

A draft of Fiji's rural water supply management plan can be used to compare with other countries national water policies and adapt as deemed fit.

Recommended Portals and Information Bases

From [Marc Overmars](#), Asian Development Bank, Suva, Fiji

The Pacific Climate Change Science Program Climate Futures

<http://www.pacificclimatefutures.net/>

Portal contains data on drought preparedness and long term planning of adaptation measures, which can be used for drafting a water sector policy

Island Climate Update

<http://www.niwa.co.nz/climate/icu>

Produces monthly summaries of the climate in the tropical South Pacific islands, with an outlook for the coming months, information which could be used when preparing a water sector policy

The Water Channel

<http://www.thewaterchannel.tv/>

Resource with lots of videos related to water; supports education and awareness in water by making video material available that is often scattered and easily lost

Integrating Watershed and Coastal Area Management

<http://www.iwcam.org/>

Contains resources on a project designed to strengthen commitment & capacity of participating countries to implement integrated approach to the management of watersheds & coastal areas

Implementing Sustainable Water Resources and Wastewater Management in Pacific Island Countries

<http://www.pacific-iwrm.org/>

Portal where other IWRM focal points in the Pacific are able to share examples from their water demonstration and planning programs for others to learn from

Climate Change Portal of the Office of the President of Kiribati (from [Marc Overmars](#), Asian Development Bank, Suva, Fiji, and [Kautuna Kaitara](#), Kiribati Adaptation Program Phase III, Project Management Unit, Tarawa, Kiribati)

http://www.climate.gov.ki/Climate_change_effects_in_Kiribati.html#apm1_3

Contains resources on the Kiribati Adaptation Program, that addressed water shortages, including information on M&E and coordination of national policy

Climate Change in the Pacific: Scientific Assessment and New Research (from [Rebecca McNaught](#), Red Cross Red Crescent Climate Centre, Australia)

www.pacificclimatechangescience.org

Presents individual country reports which provide country-specific projections and relevant climate information, including on water management

Water, Sanitation & Hygiene, Pacific Islands Applied Geosciences Commission (from [Dave Hebblethwaite](#), SOPAC-SPC Water & Sanitation Programme, Suva, Fiji)

pacificwater.org

SOPAC's repository contains details of all the water projects it manages and implements, source for finding lessons learnt and for comparing other water projects

International Conference on Climate Services, October 17-19, 2011, Columbia University, New York City (from [Norman H. Barth](#), US Embassy, Suva, Fiji)

<http://iccs.iri.columbia.edu/>

Provides easily accessible and timely scientific information from the Conference to help communities prepare for climate-related disasters &/or to take advantage of favorable conditions

Recommended Contacts and Experts

From [Clive Carpenter](#), GWP Consultants LLP, United Kingdom*

Ivan Rodrigues, Antigua Integrated Water Resources Management Focal Point, Antigua
ivan@apua.org

Possible contact for information on GWP Consultants recently finished IWRM Policy and Road Map (the early implementation plan) for Antigua

Dr. Chris Cox, CEHI Programme Manager, Caribbean Environmental Health Institute (CEHI), Antigua

ccox@cehi.org.lc

Potential resource to gather information on GWP Consultants recently completed IWRM Policy and Road Map (the early implementation plan) for Antigua

Dr. Helen Johnson, University of Queensland, Australia (from [Ruth Maetala](#), Author, Solomon Islands)

Brisbane QLD 4072 Australia; Tel.: 61-7-336-53236; h.johnson@uq.edu.au

Professor in the School of Social Science has expertise in water projects and could be contacted to share good practices within the water sector

Professor Ian White, Professor of Water Resources and Associate Director Research, Fenner School of Environment and Society, College of Medicine, Biology and Environment, Australian National University, Australia (from [Dave Hebblethwaite](#), SOPAC-SPC Water & Sanitation Programme, Suva, Fiji)

Canberra ACT 0200, Australia; Tel.: 61-02-6125-0660; Fax: 610-2-6125-0757; ian.white@anu.edu.au

Possible contact for further information on Nauru's water policy and implementation plan under the IWRM National Planning Programme as he provided technical expertise for the project

Recommended Organizations and Programmes

Morphum Environmental Limited, New Zealand (from [Damian Young](#))

Level 1, 86 Symonds Street, Grafton, Auckland, New Zealand; Tel.: 09-377-9779; Fax: 09-377-9778; info@morphum.com; <http://www.morphum.com/index.asp?pageID=2145888601>

Organisation specialises in water projects; can provide useful tips and guidance on water policy, implementation, evaluation, etc.

From [Rebecca McNaught](#), Red Cross Red Crescent Climate Centre, Australia

Red Cross Society, Fiji

Red Cross House, 22 Gorrie Street, Suva, Fiji; Tel.: 679-331-4133; Fax: 679-330-3818; redcross@connect.com.fj; helpdesk@redcross.com.fj; http://www.redcross.com.fj/index.php?option=com_content&task=view&id=12&Itemid=33

Humanitarian organisation dedicated to saving & improving the lives of the most vulnerable, has experience working on water related issues with the Kiribati Red Cross

Kiribati Red Cross Society, Tarawa

P.O. Box 213, Bikenibeu, Tarawa; Tel: 686-255-01; Fax: 686-283-35; redcross.krccs@gmail.com; <http://www.ifrc.org/en/what-we-do/where-we-work/asia-pacific/kiribati-red-cross-society/>

Humanitarian organisation dedicated to saving & improving the lives of the most vulnerable, has experience working on water related issues with the Fiji Red Cross

Live & Learn Environmental Education, International Office, Australia (from [Rebecca McNaught](#), Red Cross Red Crescent Climate Centre, Australia and [Simione Koto](#), Live & Learn Environmental Education, Suva, Fiji)

Ross House, 4th Floor, 247–251 Flinders Lane, Melbourne 3000 Victoria, Australia; Tel: 61-3-9650-1291; Fax: 61-3-9650-1391; enquiries@livelearn.org; <http://www.livelearn.org/programs/wash>

Working to reduce poverty and foster greater understanding and action towards a sustainable future, can be contacted for materials they developed for their WASH programme

Recommended Communities and Networks

Water Community, Solution Exchange India (from [Irene Isabel](#), Research Associate)

<http://www.solutionexchange.net.in/communities/water>; se-wes@solutionexchange-un.net.in Nitya Jacob and Suntra Lala, Resource Team; nitya.jacob@one.un.org and sunetra.lala@one.un.org

Community of development professionals from a wide range of organizations and perspectives who are working to promote sustainable and equitable access to water and sanitation in India

Related Consolidated Replies

Urban Water and Sanitation Policy for Bihar, from Ranvijay Kumar, Nidan, Patna (Experiences; Advice). Water Community, Solution Exchange India. Issued 8 December 2010

Available at: <ftp://ftp.solutionexchange.net.in/public/wes/cr/cr-se-wes-21101001.pdf> (PDF; Size: 169KB)

Seeks inputs on the urban water and sanitation policies that exist at the state level in Bihar

Inputs for Water Mission of National Action Plan on Climate Change, from Himanshu Thakkar, South Asia Network on Dams, Rivers and People (SANDRP), New Delhi (Advice; Examples). Water Community, Solution Exchange India. Issued 30 January 2009

Available at: <ftp://ftp.solutionexchange.net.in/public/wes/cr/cr-se-wes-29120801.pdf> (PDF, Size: 143 KB)

Seeks inputs regarding the specific initiatives that should be included in the National Water Mission

Rajasthan Draft Water Policy, from Prema Gera, United Nations Development Programme (UNDP), New Delhi (For Comments). Water Community, Solution Exchange India. Issued 31 August 2006

Available at: <ftp://ftp.solutionexchange.net.in/public/wes/cr/cr-se-wes-31080601.pdf> (PDF, Size: 201 KB)

Provides comments on Draft Water Policy, identifies gaps, reflects on problems, and represents views and aspirations of all water users drawing from members' experiences

**Offline Contribution*

Responses in Full

[Marc Overmars](#), Asian Development Bank, Suva, Fiji

Great to see the advances made in these policy developments under the Integrated Water Resources Management (IWRM) and Pacific Adaptation to Climate Change (PACC) projects in Nauru.

As both projects are piloting approaches in the region, there will be quite some interesting lessons learned and maybe focal points will be able to share them through the Pacific Solutions Exchange (PSE), and are likely already sharing these through the established fora such as the [Kava bowl](#) blog.

As you requested members to respond specifically to three questions below, I can provide the following for starters as combined response:

For dealing with **climate variability & change and vulnerability** you can have a look at the International Research Institute for Climate and Society (IRI) and National Oceanic and Atmospheric Administration (NOAA) [website](#). The site is intended to provide resources and educational opportunities to aid water resources managers in implementing a climate risk management approach to improve resiliency

to droughts and floods. It also provides the foundation for developing knowledge and tools including exercises, manuals, and course materials. Although the focus is on countries with surface water, the exercise on [Integrating Forecasts into Institutional Decision-Making Processes](#) may be useful, as they put it: "new opportunities for climate-smart water management".

Obviously the information already available for **climate seasonal forecasts** (Seasonal Climate Outlook - SCOPIC)/ Bureau of Meteorology ([BOM](#)) and Island Climate Update (ICU)/National Institute of Water and Atmospheric Research ([NIWA](#)) and **climate projections** (on The Pacific Climate Change Science Program - [PPCSP](#)) are of immediate use for drought preparedness and longer term planning for adaptation measures.

On **water supply and quality**, I think 'Drinking Water Safety Planning' offers one of the most sensible adaptation measures as it looks at a risk-based approach to maintaining water safety. A World Health Organisation (WHO)/International Water Association (IWA) [manual](#) is available on this for larger reticulated systems and also the [Pacific guidelines](#) (PDF, Size: 3.8 KB) are handy to start this process at country or community level.

On **water governance** there may be much out there globally, but little seems available or relevant for smaller places like in the Pacific. You can have a look at the '[Water Channel](#)' for some videos on IWRM and water governance in the Caribbean, or some of the country documentation at <http://www.iwcam.org/>. Other IWRM focal points in the Pacific would be able to share examples from their demonstration and planning program, see www.pacific-iwrm.org.

As one of the first GEF (Global Environment Fund) climate change projects in the Pacific, the Kiribati Adaptation Program (KAP) has lots of lessons learned to offer since its inception under KAP-I. Now in its 3rd phase under KAP-III they may offer valuable examples on what works in terms of **coordination and M&E** as they have a focus on water resources (including policy) as well as on coastal management. More on <http://www.climate.gov.ki/>.

You can find general information on **water and climate** in the document on [Adaptation and coping strategies in water resources & water services in Caribbean & Pacific small islands countries](#) (PDF, Size: 2.66 MB).

It would be great if other countries can also share their on-the-ground experiences as not all information is available online and the best lessons learned are perhaps not documented but shared in other ways.

I hope the above is in some way useful and also encourages others to respond and provide examples from the field.

[Ruth Maetala](#), Author, Solomon Islands

My name is Ruth Maetala. I don't really have an expertise in the area of water management but know some people at the University of Queensland (UQ) that do. I can connect you to them if you like. One of the contacts is, Dr. Helen Johnson at UQ who has expertise in water projects and I can ask if she can share some good practices with this community.

On the other hand, I feel that climate change and adaptation policies are very much like gender mainstreaming policy where it is expected that the policy be implemented effectively. After one or two years of implementation (as in the case of the Gender and Development Policy) it is found that there are opportunities for involvement of key line Ministries where policy implementation would be relevant. Also note that where policy gaps exist "take a sectorial approach to mainstreaming", it worked for Solomon Islands.

Finally, consultation and networking are two of the main ingredients for effective policy implementation. I found that in my experience as Director of the Research Policy and Planning Unit in the Ministry for Women Youth and Children Affairs up until May 2010. Utilize your networks - it is the strength we can draw from.

Norman H. Barth, US Embassy, Suva, Fiji

I'd like to build on [Marc Overmar's](#) information rich message, in particular his two paragraphs - [climate variability & change and vulnerability](#); [climate seasonal forecasts](#).

Seasonal forecasts of precipitation/temperature for the Pacific are also available on the IRI website. The middle-right of their main page has "Forecast Products" image/title. This brings you to a page where you can specifically pick the "Pacific Islands" region. The "December, January, February 2012" forecast for the Pacific Islands show that Nauru is most likely going to be 70% below normal precipitation for this period (<http://www.solutionexchange-un.net/repository/pc/ccd/cr1-res1-en.gif>)

Whether you call it SCOPIC, or "climate risk management" or "climate services", all of these are similar although perhaps with some nuances, but they can be key elements of a water resource management program.

The US National Oceanic and Atmospheric Administration (NOAA) has just recently created the US National Climate Center which will focus on bringing/using climate services in the United States. The World Meteorological Organization (WMO) is also focusing on climate services; see their page establishing the [Global Framework for Climate Services](http://www.wmo.int/pages/mediacentre/press_releases/pr_861_en.html): http://www.wmo.int/pages/mediacentre/press_releases/pr_861_en.html

Two links about the recent International Climate Services Conferences are here: http://portal.iri.columbia.edu/portal/server.pt?open=512&objID=699&parentname=CommunityPage&parntid=5&mode=2&in_hi_userid=2&cached=true

and

<http://iccs.iri.columbia.edu/>

Rebecca McNaught, Red Cross Red Crescent Climate Centre, Australia

[Marc](#) and [Ruth](#) have already given fantastic overviews. I thought I could add few bits and pieces based on our experience of asking similar questions in the Pacific Red Cross context. I'm afraid that my response is fairly general rather than Nauru specific.

As Marc and you both mention, it is important to consider both climate change and climate variability and the effect it has on water resources. Long term trends in average amount of rainfall may be of concern for planning, but so too might be occurrence of extremes, and El Nino and La Nina's impact on water resources (i.e. too much or too little water). Linkages with National Disaster Management focal points and Health Ministry are important when investigating what implications there are for disasters (slow and sudden onset) and their impact on water supply/human health.

As a practical example of preparation for the La Nina event that has been occurring in the Pacific over the past year, the Pacific Red Cross office in Suva and Tuvalu, and Kiribati Red Cross, used information that there was a higher likelihood of dry conditions to trigger discussions with the Meteorological Office and National Disaster Management Office. Tuvalu Red Cross for example then included wise water use and

hand washing messages in its regular radio spot. A short case study can be found at - Pacific La Nina Case Study: <http://tiny.cc/jzf4n> (PDF, Size: 350 KB)

The new Pacific Climate Change Science programme has released country reports that I'm sure you're aware of - but might be worth sharing with the community anyway: www.pacificclimatechangescience.org. These reports give an indication of rainfall in El Nino/La Nina years, as well as trends now and into the future for individual countries.

We are aware that Live and Learn has created Water Supply, Sanitation and Hygiene (WASH) Programme related materials of late that are to be used in communities - including flip charts etc. You may want to contact them.

I also came across a resource by Tearfund on integrating climate change adaptation into water sectors called "How to integrate climate change adaptation into national-level policy and planning in the water sector: a practical guide for developing country governments" it can be found here: <http://tiny.cc/tr3za> (PDF, Size: 948 KB).

Another project I am aware of in the Pacific is the Fiji based 'Piloting climate change adaptation to protect human health', which is a Global Environment Facility/World Health Organisation funded pilot in collaboration with the Fiji Ministry of Health. They have been looking at the effects of too much and too little water and their implications for human health.

Speaking to Sarah Davies (the Water and Habitat Coordinator in the International Emergencies team at Australian Red Cross who has worked in the Pacific), she mentions that in the situation where you need to ration water, there will need to be action by diverse range of stakeholders, including the public. People may understand the need to ration greater if there is an awareness of dwindling water resources. As an example in Australia, the current percentage of water capacity of dams is demonstrated on the front page of local newspapers. It is important to anticipate long term trends in both groundwater and rainwater well in advance based on longer term climate change and also El Nino/La Nina variability. To do this, monitoring of water sources needs to be in place and mechanisms for responding to the trends need to be in place before an emergency situation develops. In periods of low water availability, it may also be a good idea to rationalize potable water - i.e. separating quality water for drinking and using lower quality water for non-drinking purposes.

On the topic of mainstreaming climate change into national plans, I have no direct experience, but we do have experience in mainstreaming climate change into the Red Cross Red Crescent context globally. I am currently writing a thesis on that topic. In my thesis, I've taken a look at gender, disaster risk reduction, development and climate literature to identify some general ingredients for mainstreaming. These include:

- training and awareness raising
- access to, analysis and exchange of information,
- addressing policy, strategic and planning levels,
- adequate legislation, political will and leadership,
- practical implementation at community level
- integration into regular programmes and across sectors
- involving diverse stakeholders
- incorporation of the issue into monitoring and evaluation frameworks

I hope colleagues across the Pacific continue to contribute their wealth of knowledge and experience to this climate change and development forum - I look forward to learning from everyone!

Stuart Orr, WWF International, Switzerland

I'm sharing some quick thoughts and hope this helps advance the responses to this query. The focus of Nauru (a highly water constrained country) is interesting. The issues Mavis describes are wide ranging, from health and sanitation, to governance and river basins. These typically require very different policies, ministries, solutions etc. nothing new there.

I would stress that the goal of IWRM is not just getting the right people together but implementing. And this takes political will. The question with water is - what is the will, where are the incentives?

I would suggest that the minister begins to understand the role of water in his/her economy in a new way. I attach a paper we did in Kenya that highlights the multiple users of water and the benefits of cooperation. Looking at water from a shared risk and opportunity perspective allows for better integration, but even better than that, gives the ministry of finance and treasury the basic economic understanding of how water literally underpins their economy. If they get that, then the minister gets her/his ideal situation. It will always come down to making the case (in this sense, a business case) for the investment of water. Those who get it right will create long term futures that are significantly lower risk and allow a foundation for development and progress. There is so much evidence to show that when governments don't do this, they go backwards.

For Mavis's consideration, I share the links for the Kenya case study – **Seeking a sustainable future for Lake Naivasha** - http://www.wwf.de/fileadmin/fm-wwf/pdf_neu/lake_naivasha_report_02_2011.pdf (PDF, Size: 1.6KB) and a paper on **Understanding Water Risks: a primer on the consequences of water scarcity for government and business** - http://assets.wwf.org.uk/downloads/understanding_water_risk.pdf (PDF, Size: 1.2KB)

Sunetra Lala, Water Community, Solution Exchange India, New Delhi, India

India too is faced with the challenge of sustaining its rapid economic growth while dealing with the threat of climate change. Climate change may alter the distribution and quality of India's natural resources and adversely affect the livelihood of its people. With an economy closely tied to its natural resource base and climate-sensitive sectors such as agriculture, water, and forestry, India may face a major threat because of the projected changes in climate.

The Prime Minister's Council on Climate Change, in its first meeting on 13 July 2007, decided that "A National Document compiling action taken by India for addressing the challenge of Climate Change, and the action it proposes to take" would be prepared.

The National Action Plan for Climate Change (http://pmindia.nic.in/climate_change.htm) responds to the decision of the PM's Council, as well as updates India's national programmes relevant to addressing climate change. It identifies measures that promote our development objectives, while also yielding co-benefits of addressing climate change effectively. It outlines a number of steps to simultaneously advance India's development and climate change-related objectives of adaptation and mitigation.

In dealing with the challenge of climate change we must act on several fronts in a focused manner simultaneously. The National Action Plan hinges on the development and use of new technologies. The implementation of the Plan will be through appropriate institutional mechanisms suited for effective delivery of each individual Mission's objectives and include public private partnerships and civil society action. The focus will be on promoting understanding of climate change, adaptation and mitigation, energy efficiency and natural resource conservation.

There are Eight National Missions, which form the core of the National Action Plan, representing multi-pronged, long-term and integrated strategies for achieving key goals in the context of climate change. While several of these programmes are already part of our current actions, they may need a change in direction, enhancement of scope and effectiveness and accelerated implementation of time-bound plans.

One of these missions is the National Water Mission (<http://india.gov.in/allimpfrms/alldocs/15658.pdf> PDF, Size: 718 KB).

The National Water Mission will be mounted to ensure integrated water resource management helping to conserve water, minimize wastage and ensure more equitable distribution both across and within states. The Mission will take into account the provisions of the National Water Policy and develop a framework to optimize water use by increasing water use efficiency by 20% through regulatory mechanisms with differential entitlements and pricing. It will seek to ensure that a considerable share of the water needs of urban areas are met through recycling of waste water, and ensuring that the water requirements of coastal cities with inadequate alternative sources of water are met through adoption of new and appropriate technologies such as low temperature desalination technologies that allow for the use of ocean water.

The National Water Policy will be revisited in consultation with states to ensure basin level management strategies to deal with variability in rainfall and river flows due to climate change. This will include enhanced storage both above and below ground, rainwater harvesting, coupled with equitable and efficient management structures.

For more details about the same, please visit http://pmindia.nic.in/climate_change.htm

The following documents may also be useful:

Water Adaptation in National Adaptation Programmes for Action: Freshwater in Climate Adaptation Planning and Climate Adaptation in Freshwater Planning, available at <http://unesdoc.unesco.org/images/0018/001818/181887e.pdf> (PDF, Size: 1.12 MB)

Integrated Water Resources Management and Strategic Environmental Assessment – Joining forces for climate proofing, available at http://www.worldwaterforum5.org/fileadmin/wwc/Library/Publications_and_reports/Climate_Change/Pers_Pap_16_IWRM_and_SEA.pdf (PDF, Size: 1.27 MB)

Adapting to climate variability: Pumpkins, people and policy, available at http://uct.academia.edu/GinaZiervogel/Papers/198987/Adapting_to_Climate_Variability_Pumpkins_People_and_Policy (To access – sign up to Academia.edu)

[Kevin Petrini](#), United Nations Development Programme (UNDP) Pacific Centre, Suva, Fiji

Thank you for the query. I would like to offer some resources including toolkits, step-by-step guides and lessons learned that may be useful for your work in Nauru. Whereas these are generally Climate Change Adaptation toolkits for the community level and not specific to the water sector, you may need to modify as you see fit.

IIED's "Participatory Learning and Action: Community-based Adaptation to Climate Change"

Available at: http://www.planotes.org/pla_backissues/60.html

The first section focuses on reflections on participatory processes, practice in community-based adaptation to climate change, the second section is participatory tool-based case studies, and the third are participatory tools. Through these tools, the community can be involved in not only the project development but also all aspects of the project including monitoring and evaluation.

IIED's "Community-based Risk Screening Tool (CRiSTAL)– Adaptation & Livelihoods"

Available at: <http://www.iisd.org/publications/pub.aspx?pno=854>

This is a decision support tool developed to provide a logical, user-friendly process to help users better understand the links between climate-related risks, people's livelihoods and project activities. It is

intended to systematically understand the links between local livelihoods and climate; assess a project's impact on livelihood resources important to adaptation; and devise adjustments that improve a project's impact on livelihood resources important to adaptation.

"Facilitators Guide for Outreach Toolkit: Adapting to a Changing Climate Support for Micronesian Communities"

Available at: <http://www.cakex.org/sites/default/files/Flipchart%20Facilitator%20Notes%20FINAL.pdf>
(PDF, Size: 564 KB)

This is a recently developed tool for Micronesia and may have some applicability to Nauru. I only have the link to the facilitators guide above, so would need to inquire further about the corresponding "flipchart." There is some reference to watershed management.

IFRCRC's "Community Based Approaches in the Pacific, Reference Guide"

I came across this tool recently (only have a hard copy) which has some very practical, hands-on ideas on working with communities in the Pacific. Part 1 is about planning the Community based approaches, part two is implementation and part three the follow up and Monitoring and Evaluation.

UNDP's "Gender, Climate Change & Community Based Adaptation: A guidebook for designing & implementing gender-sensitive community based adaptation programmes & projects"

Available at: http://www.beta.undp.org/undp/en/home/librarypage/environment-energy/climate_change/gender/gender-climate-change-and-community-based-adaptation-guidebook.html

Although a guideline compiled from the global programme, there were inputs from the Pacific. It outlines the basics of the gender approach to development, gender and climate change and adaptation, looking at women's specific vulnerability to climate change and disasters and well as mainstreaming gender into adaptation projects and finally gender analysis. This can be quite useful in assuring gender is considered throughout the process. The preliminary lessons learned are:

- Without an express consideration of gender from the very beginning of the project cycle, the choice of adaptation interventions can have unintended gender implications
- An initial analysis of community dynamics is imperative to determine how to most effectively address gender issues
- Good facilitation is essential for equitable community participation in discussions and decision-making
- New techniques and technologies can be useful entry points for overcoming traditional gender barriers
- Gender considerations must be seen in light of the various power dynamics within a community
- Gender-balanced participation is critical in all aspects of project planning and implementation
- Some partner organizations will need capacity building in gender mainstreaming.
- Projects can be designed to accommodate women's traditional roles and responsibilities
- Gender training can help, but it needs to be easy and accessible

UNDP's "Screening Tools and Guidelines to Support the mainstreaming of Climate change adaptation into development assistance – a stocktaking report"

Available at: http://www.adaptationlearning.net/undp_screening-tools-and-guidelines

The report explores the rationale for mainstreaming, outlines the main components necessary to operationalize mainstreaming, and indicates the various relevant levels and associated entry points to consider in the mainstreaming process. The report discusses and illustrates how key climate change adaptation and mainstreaming concepts are defined and used – both in relevant literature and in practice – as well as how they relate to development. Whereas Section 2 and 3 take the concept of mainstreaming as the point of departure, Sections 4 and 5 focus on climate risk screening methods tools and guidance. Section 4 explores how climate risk screening efforts can be categorized in relation to mainstreaming, plus the components of mainstreaming that are addressed in the variety of climate risk screening tools and guidance. A comparative overview and analysis of climate risk screening tools and guidance is provided in Section 5, followed by brief conclusions in Section 6.

Wishing you the best in your implementation. If you have further queries, feel free to contact me directly.

Damian Young, Morphum Environmental, New Zealand

Morphum Environmental Ltd, a New Zealand based consultancy has experiences in development of water management frameworks and water policy implementation in Auckland.

The following document provides details on some of the projects Morphum has worked on which are relevant to the development of policy and providing a framework for improving water management. Our examples represent the experience from the Southern Pacific Island of Aotearoa, New Zealand and may provide the Nauru community with knowledge of available tools and technologies that will assist with implementation of policy in priority areas relating to water supply and quality; demand; and governance.

The two projects we have worked on and are mentioned, "Hauraki Gulf Island 3 Waters – GIS Risk based assessment" and "Three Waters Benchmarking" are relevant to the first question. <http://www.solutionexchange-un.net/repository/pc/ccd/cr1-res3-en.pdf> (PDF, Size: 212.4 KB)

We applaud Nauru in this national approach to better manage this vital resource, water, and look forward to contributing in the future.

Kautuna Kaitara, Kiribati Adaptation Program Phase III, Project Management Unit, Tarawa, Kiribati

Thank you for the enquiry.

The Kiribati Adaptation Program (KAP) Project Management Unit is pleased to share the following documents on Rainwater Harvesting - Household Rainwater Harvesting Guidelines <http://www.solutionexchange-un.net/repository/pc/ccd/cr1-res1-en.pdf> (PDF, Size: 5.32 MB) and RWH Guidelines – Design, Construction and Specification <http://www.solutionexchange-un.net/repository/pc/ccd/cr1-res2-en.pdf> (PDF, Size: 1.9 MB). The design/guidelines were developed by consulting firm GWP Ltd from UK who were contracted by the Government to assist with activities related to water. The piloting and actual construction works were undertaken by our local construction contractor.

Trust you will find these guidelines to be useful and particularly in Nauru's situation where Rain Water Harvesting (RWH) can be prominently used for supply of water given that groundwater is not available.
Hey

We are pleased with pilot works undertaken in KAPII on Rainwater Harvesting and indeed these have been successful. The lessons learned from KAPII informed the design of KAPIII and in fact RWH activities are now included in the upcoming project. We will be happy to provide further information on this if required.

In addition, most of the reports for the KAP Phases I and II can be accessed via our web page www.climate.gov.ki wherein reports on Water, Coastal Protection Works and other important reports are deposited. Please feel free to visit the site for more information at your leisure.

Malakai Niulevu, Water and Sewerage Department, Ministry of Works, Transport and Public Utilities, Suva, Fiji

Fiji has just finalised its Rural Water and Sanitation Policy and now awaiting cabinet's approval. We will be using the "Water Supply Management Plan" <http://www.solutionexchange-un.net/repository/pc/ccd/cr1-res4-en.pdf> (PDF, 211.3 KB) as a guideline to help in the implementation process.

Please note that the response provided is just an overview of what is in the WSMP and not the whole document. It is still in the developing stages and therefore is not available to public yet.

Dave Hebblethwaite, SOPAC-SPC Water & Sanitation Programme, Suva, Fiji

In regard to Mavis' enquiry regarding implementation of water policy in Nauru, community members might be interested to know that the SPC-SOPAC Water & Sanitation Programme has been working with the Nauru water sector for some years on this topic. This support was intensified over the past 6 months through the provision of expert Technical Assistance (Professor Ian White) under the EU-funded *Integrated Water Resources Management (IWRM) National Planning Programme*. The policy and implementation plan Mavis refers to were developed through this Technical Assistance.

The IWRM planning programme has also been generating a number of water policy products and lessons through collaborative work with 13 other Pacific Island Countries. It's difficult to gather together all of programme's material on a forum like this (including the work done with Nauru), but members might be interested to visit pacificwater.org, which contains a raft of water and sanitation tools and documents. The site will be undergoing a revamp in the coming months, but will remain the main location of SOPAC Division's information resources related to water and sanitation.

Simione Koto, Live & Learn Environmental Education, Suva, Fiji

I would like to comment on few points. I believe **traditional knowledge** & **good governance** play a key role for small islands like Nauru that has similar water issues like the Lau Group in Fiji. Decisions regarding water usage must come from the people and supervised by **leaders or Water Committees** ensuring **proper water control, usage, maintenance, hygiene and sanitation and future plans for bigger water source/supply** etc. Water education or capacity building is the key to sustainable water management.

In the past, for instance, seawater or well water was used for bathing (except for babies), washing and in toilets, and sometimes for cooking as a water control measure while freshwater was preserved for drinking and cooking only. Men and youths were responsible to ensure there was sufficient water always. More recently, compost toilets are regarded as environmental friendly approaches because it does not need water for flushing, doesn't contaminate water ground water sources and faeces can be dried and used as manure in gardens.

Also, past practice involved having community rain water tanks especially designed with roofs to collect rain water. As a risk management tool for water sustainability, freshwater is rationed and distributed at allocated times by those in charge. It is interesting to note that young men in Lau were told that before they got married they must build their **house** and more importantly **build or install a water tank!** This practice has helped them prepare better to provide water for their families and become less drought resilient.

Clive Carpenter, GWP Consultants LLP, United Kingdom*

Further to [Kautuna's](#) email and the wealth of correspondence already initiated, I would like to contribute some further inputs regarding Kiribati Adaptation Program (KAP) II implementation (I was the KAP II

Team Leader from Global Water Partnership Consultants), as well as share further experience working across Small Island Developing States (SIDS) of the Pacific, Caribbean, Indian and Atlantic oceans.

The KAP II water resources and water supply work focused on investigation of rainwater and groundwater resources and improving designs and construction practice of water supply systems to increase man-made water storage and/or exploit natural storage, i.e. the groundwater. I am aware the recent work by [Tony Falkland](#) has cast significant doubt on the groundwater availability beneath Nauru, so this option may not be available to you.

Our work with KAP did evaluate how to improve wet season water rainwater capture, retention and usage, considering in more detail construction designs and making simple but effective improvements (gutter shapes and sizes, gutter falls, tank sizes and elevations etc), which were implemented by local contractors. The work also targeted and developed best practice community engagement and community management of local water (and land) resources, including water resources protection and conservation.

All the reports, specifications, guidelines, awareness raising materials, study assessments, training materials, and so on, are all available on a CD/DVD, which with KAP II's approval we will dispatch to you. Much of this work will be relevant to your own needs, and could save much time and expense, as well as be utilised with the knowledge that it is working well in Kiribati.

Implementation was slow, and was in part hampered by lack of local experience with required tendering processes, shipping delays and land ownership and land access issues. Tender training workshops for local contractors were essential, extended material arrival schedules programmed, and detailed and extensive community engagement processes implemented. The latter point may not be so critical in Nauru, but the capacity to implement any construction works will need to be thought through carefully and aligned with the requirements of any external donor's needs (where funding is not national in origin).

Turning more broadly to other SIDS experiences, many continue quite rightly to prioritise the issue of water scarcity and drought vulnerability and this is a powerful and often nationally accepted concern with which to galvanize stakeholder engagement, institutional co-operation, awareness, political will and budgetary support. We have recently completed an IWRM Policy and Road Map (the early implementation plan) for Antigua, which was primarily driven by stakeholder concern on water scarcity. You can contact Ivan Rodrigues (Antigua IWRM Focal Point) at ivan@apua.org or Dr. Chris Cox CEHI Programme Manager ccox@cehi.org.lc for further details.

By way of sharing other SIDS approaches to water sector climate adaptation:

- the atolls of the Marshall Islands collect rainwater off its runway and store this in multi-million gallon tanks
- South Tarawa has used saline water flush in its sewerage system to save freshwater for potable uses only
- compost toilets are being trailed across the Pacific, compost toilets use negligible water thus reducing water demand and minimising groundwater pollution at the same time
- water supply system leakage reduction and customer water conservation programmes are being attempted by many SIDS water service providers

KAP II has also focused on utilising communal and governmental infrastructure for rainwater harvesting - something that happens all too rarely in some places. On Banaba (Ocean Island) we have designed a strategic drought water reserve using the former phosphate buildings and ship ballast water tanks, which in conjunction with household and community building RWH and sensible dry season rationing, should make the island effectively drought resilient in terms of water supply.

I hope the above is of further benefit.

* Offline Contribution

Many thanks to all who contributed to this query!

If you have further information to share on this topic, please send it to Solution Exchange for the Climate Change and Development Community in the Pacific at ccd-pc@solutionexchange-un.net with the subject heading "Re: [ccd-pc-se] QUERY: Implementing the Nauru Water Sector Policy - Examples; Experiences. Additional Reply."

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