

# DEVELOPMENT OF A NATIONAL CLIMATE CHANGE PORTAL FOR PALAU: BUSINESS CASE

Prepared by SPC/USAID ISACC project and SPREP, with the support of the  
DFAT/Griffith University Pacific iCLIM Project, January 2018.



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# Introduction

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## Background

Recent institutional restructuring at the Executive level within the Government of the Republic of Palau has resulted in the creation of the Office of Climate Change within the Bureau of Budget and Planning, Ministry of Finance. The Office of Climate Change is Palau's overarching policymaking and advisory body for all climate change related activities. This Office has both a collaboration and coordination role, to ensure coherence on the issue of climate change at the national level. Part of its official mandate is to submit climate change information to the Pacific Climate Change Portal, as well as develop an information sharing database system for climate change. It is also the lead agency in coordinating implementation of the Palau National Climate Change Policy.<sup>1</sup>

The Palau National Climate Change Policy was developed in 2015 and exists as Palau's overarching national policy for climate and disaster resilient low emissions development. It incorporates a 5-year action plan across ten priority sectors for climate change adaptation, as well as disaster risk management, mitigation and low emission development<sup>2</sup>. While the Office of Climate Change is tasked with monitoring the progress of implementation for the policy, this has been a challenge to date, due to the multi-sector scope and the associated issue of spread of information across many agencies.

At the current time, there is no centralised site for climate change related information in Palau. A number of national government agencies, semi-government agencies, research-focused organisations and NGOs individually collect and store information and data assets related to climate change. However, there is no consistent sharing of this information, nor any current national inventory of what exists.

Recent consultations undertaken as part of the Palau Climate Change and Disaster Risk Finance Assessment, also supported by the SPC/USAID ISACC project, identified a number of challenges related to both coordination across national government agencies on climate change activities, as well as sharing and access to national climate change information, including information on climate change finance. Stakeholders identified the need for information to be more readily accessible. Key recommendations that have been made within the finance assessment report (currently in draft form) include:

- The Office of Climate Change to be the mandated centralised information depository for all CCDRM programmes, projects and activities; and
- The need to strengthen dissemination of CCDRM information through the development of a project registry, national climate change portal and national CCDRM communications plan.

The need for improved Information Knowledge Management is also reflected in the Palau Climate Change Policy as an education priority action to improve access to information on climate change and disasters. The 2015 Palau Climate Change Policy Communications Strategy also outlined the "utilisation of a variety of tools for an ongoing program of public outreach and awareness and facilitating ongoing stakeholder engagement".

The development of a National Climate Change Portal for Palau, presents an opportunity for greater coordination of information across agencies, on climate change and associated disaster risk

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<sup>1</sup> Duties and functions of the Office of Climate Change as per Republic of Palau Office of the President, Executive Order 381 *Organization of the Executive Branch of the Government of the Republic of Palau*.

<sup>2</sup> A copy of the policy can be accessed on the Pacific Climate Change Portal:  
<https://www.pacificclimatechange.net/node/22935>

management issues. It would also provide support to Palau's national priority of increased access to climate finance by providing guidance on how stakeholders can engage with this and other funding sources. The aim of this Business Case is to provide an outline for developing a system that provides a platform for awareness (of information available), knowledge management and sharing of information to better coordinate national climate change work and to contribute to more effective adaptation and resilience planning and decision-making at the national level.

## Project Support

The USAID *Institutional Strengthening in Pacific Island Countries to Adapt to Climate Change* (ISACC) Project is being implemented by the Pacific Community (SPC) in partnership with the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Pacific Islands Forum Secretariat (PIFS). The project is working in eight Pacific Island Countries, including Palau, with the goal of strengthening the national institutional capacity of countries to effectively plan for, coordinate and respond to the adverse impacts of climate change. In consultation with national focal points within the Bureau of Budget and Planning and the Office of Climate Change, one of the key outcomes for the ISACC Project in Palau is to support the documenting and dissemination of lessons for accessing and managing multisector climate financed projects/programmes through strengthening national knowledge management systems and processes. Through undertaking the Palau Climate Change and Disaster Risk Finance Assessment, supporting the development of a national climate change portal was identified as a priority activity within the scope of the project.

SPREP is one of the implementing partners in the ISACC Project and has the regional mandate for supporting member countries in IKM. The DFAT funded, Griffith University Pacific iCLIM Project has been partnering with SPREP since 2014 to support the regional management of climate change information in the Pacific. Through this project, technical assistance has been provided to Pacific Island Countries to better manage and deliver their climate change data and information. Specifically, the project has supported the development of a "National Portal Starter Package" aimed at standardising the management and presentation of climate change and disaster risk reduction related information across the region and giving countries the option for a "ready to go" solution for their national portal.

## Current IKM Activities in Palau

Palau is currently receiving support through the UNDP project "Mainstreaming global environmental priorities into national policies and programmes" (also known as the CB2 Project), with a focus on improving management of environmental data and information. This project is specifically focused on Palau's international reporting obligations to the Rio Conventions and the Sustainable Development Goals (SDGs). The project is supporting four key agencies, Palau Automated Land and Resource Information System (PALARIS), the Environmental Quality Protection Board (EQPB), the Bureau of Marine Resources and the Bureau of Agriculture. A database of environmental data is to be established along with a website, housed with PALARIS.

The National Emergency Management Office (NEMO) is also in the process of developing a website, to be launched shortly. This will mainly exist as an information provision site, including information on the role of the Office and access to relevant documentation, including the National Disaster Risk Management Framework, Community-Based Disaster Preparedness Plans etc.

## User Needs Assessment and Data Stocktake

A mission to Palau was undertaken by SPC and SPREP in August 2017, to conduct a data stocktake as well as a user needs assessment for the proposed national portal. Over a week-long mission, consultations with 42 national stakeholders were held, representing key government agencies, as well

as NGOs, development partners and private sector. This involved both one-on-one consultations, as well as a national stakeholder workshop on the final day of the mission. The data stocktake report has been developed in conjunction with this Business Case.

Overall, there was strong support for the development of a national climate change portal across all stakeholders. As such, the development of a publically accessible platform with a user-friendly format, where a broad range of stakeholders, including the wider community, can access nationally relevant climate change information is recommended. A summary of the key user needs is presented in the dot points below:

- A one-stop-shop for national climate change related information
- Clarification of institutional arrangements / governance
- Knowing who is doing what (activities, projects, regional/international meeting updates, agency reports etc.)
- Basic climate change information to help increase understanding of causes, effects and adaptation options
- Tracking implementation of the Palau Climate Change Policy (10 sectors) and other related climate change targets such as those in the Nationally Determined Contribution (NDC) – dashboard of progress
- Increasing local/regional/international networks – opportunities for partnership, technical assistance (TA), funding, new connections
- Projects database
- Land use / sea level rise / weather – maps of various land use
- Links to other relevant information / websites
- Education and awareness materials for CC/DRR – videos, brochures
- Case studies and lessons learned
- Inter-agency discussion forum (private member area)
- Query function – to ask for further information / ask questions

## Business Case for Development

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This section outlines the case for development based around seven key areas.

### System design

Current situation and recommendations:

Palau does not currently have any centralised system for storing, managing or accessing climate change related data and information. Stakeholders identified the need for a “one stop shop” for information and the need for this to be easy to access and user-friendly. While the Office of Climate Change is mandated to establish a centralised information system, they do not currently have the human or technical capacity to undertake this. As such, this has been identified as a priority for partner support, through the ISACC Project.

**Recommendation 1:** It is recommended that the development of a national climate change portal is supported, utilising the iCLIM/SPREP developed “National Portal Starter Pack”. By utilising this starter pack, development time and costs can be reduced and consistency can be maintained across the region. The starter pack will result in a build that uses standard Drupal modules and functionality and will be populated with agreed-upon, predefined and standardised content types, metadata and vocabularies. It can also be extended and customised with additional custom Drupal modules and themes to suit Palau’s individual requirements.

**Recommendation 2:** Due to current staff commitments at SPREP, the SPC Geoinformatics team (within the Geosciences Division) have been identified as available to undertake this development commencing immediately, with the support and guidance of the SPREP and iCLIM teams. A development process guide has been drafted to support this work (see Annex 1).

### System hosting

Current situation and recommendations:

Palau faces challenges with slow internet connections and high cost of internet access. Fibre optic cable connection is due to come online in early 2018, which may address some of these issues. Recent upgrades to internet capacity at the end of 2017, including bandwidth, may address some of the connectivity issues faced in the past.

**Recommendation 3:** It is recommended that, initially, the portal is hosted externally through SPC’s existing cloud hosting agreements. If SPC’s hosting provider has multiple datacentres where to deploy the site, testing should be done from Palau, to ensure that the datacentre that provides the fastest connection to Palau is used. This ensures the site will be on a connection that makes it usable for people in Palau. However, with the recent upgrades to internet capacity, it is also recommended that testing be undertaken on an in-country server (utilising a demo site or speed test) to ascertain whether the internet connection will enable the hosting of the site domestically. This will then dictate the possibility for longer term domestic hosting arrangements that ensure longer-term ownership and sustainability. The previous mentioned datacentre issue should also be considered when choosing longer-term hosting arrangements.

### Portal maintenance

Current situation and recommendations:

There is currently a small team of IT specialists who are tasked with the management and maintenance of the national government website ([www.palau.gov.pw](http://www.palau.gov.pw)). A meeting with IT Manager Mr. Conrad Ellechel was undertaken in August 2017 to provide an overview of the development process and the national portal starter pack. It was agreed that the IT team would be able to support the Office of Climate Change with ongoing maintenance.

**Recommendation 4:** While SPC will initially host and manage the system, the national IT support team should receive the necessary training in system administration to ensure in-house technical capacity for Drupal database management and maintenance of the site. This training should be undertaken once domestic host testing has been undertaken and longer-term hosting arrangements have been agreed and are in place (see Recommendation 3), to ensure the training is specific to the actual hosting set-up.

## Portal interface (i.e. function, design and layout)

Current situation and recommendations:

Useability is a key requirement of any information repository or portal. The user interface must be well branded, easy to navigate, and have good search functionality to enable users to easily locate information.

**Recommendation 5:** The branding for the site should be aligned with the Palau Government website and a request was also made that the current domain name ([www.palau.gov.pw](http://www.palau.gov.pw)) is also utilised to provide consistency.

**Recommendation 6:** Palau's Climate Change Policy outlines priority actions across a number of key sectors (for example agriculture, health etc.). It is recommended that these are utilised where possible as "key topics" or thematic search areas for information.

**Recommendation 7:** A common user need identified was a tracking function for the climate change policy implementation, as well as progress towards Palau's NDC (and emissions reduction targets). A dashboard or similar graphic representation was suggested. This should be considered in the design; however, any sort of tracking component will rely on regular and standardised data to be provided. This may require further discussion, based on the current data and information that exists and how this could best be achieved as an ongoing functional component of the portal.

## Portal administration and content

Current situation and recommendations:

The Office of Climate Change is the focal agency for this work and as such will undertake ownership of the portal. However, given the current spread of information and data and the multi-sector approach to climate change at the national level, it will also be necessary to identify other focal points who will be able to support in the regular provision of content.

**Recommendation 8:** It is recommended that the National Climate Change Coordinator, within the Office of Climate Change is nominated as the primary content validation and management point. This role should provide oversight to the information being received from other content providers and ensure it is aligned with the goal of the portal and the national climate change policy. It is also recommended that a number of content editors are also identified within key agencies such as NEMO, the Energy Administration and the Office of Project Management, to provide content updates as relevant to their areas. Necessary training will be provided by the SPC/SPREP team to identified personnel. It is also recommended that all current staff of the

Office of Climate Change are provided with training, to mitigate issues associated with turnover of staff. Given the current connectivity issues experienced in Palau, an alternate workflow for content should also be established. A process to collect the relevant documentation on a portable device, which is handed to a dedicated contact point in OCC, or sending this via email should also be utilised as necessary.

**Recommendation 9:** Palau is in the final stages of submitting their Second National Communication to the UNFCCC. Once submitted, they will have access to support (including funding for a position) for the development of their Third National Communication. It is recommended that this resource could also be utilised to support content updates for the portal and this should be considered in the development of the position description.

## Data sharing and integration

Current situation and recommendations:

The national portal will provide critical infrastructure for the sharing of climate change and DRR-related information. Ensuring a regular flow of information to and from the portal is key to its long-term support and success. Currently, a number of challenges exist to ensuring regular data and information sharing between agencies.

**Recommendation 10:** The portal should provide linkages and ensure discoverability of related information, including the soon to be launched NEMO website, as well as the work that is being undertaken by PALARIS and other agencies for the CB2 Project. Increased coordination and collaboration between NEMO and OCC should also be facilitated by the portal where possible, given the move towards the integration of these two areas of work as per the Climate Change Policy and regional Frameworks such as the FRDP.

**Recommendation 11:** The Bureau of Budget and Planning contains the two key agencies mandated with national data collection; the Office of PALARIS and the Office of Planning and Statistics, along with the Office of Climate Change and the Office of Project Management. As such, the development of an IKM framework or policy should be considered for the Bureau to ensure standardised information management practices across all its Offices.

**Recommendation 12:** Using the National Portal Starter Package for the Palau portal will ensure it is established to exchange metadata with the Pacific Climate Change Portal. Using regionally-agreed metadata profiles will therefore maximise discoverability and sharing of Palau-based information.

## Inter-agency collaboration

Current situation and recommendations:

A number of stakeholders identified the need for a more private, member-only, platform that would enable informal discussion and updates to be facilitated between key climate change related agencies. This was suggested as a discussion board and somewhere where trip reports and other documentation could be shared.

**Recommendation 13:** Consideration should be given to the most appropriate platform for this function, with existing options such as Skype chat providing alternative options. Furthermore, anything established online should also complement and provide added value to existing coordination mechanisms including the newly established Climate Change Working Group and the National Energy Committee.



## Risks and key considerations

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The following risks have been identified for the Palau portal, based on a rapid assessment of some of the key challenges around effective information and knowledge sharing, presented in Annex 1:

- Portal content not updated on a regular basis due to human capacity constraints as well as current culture of information sharing
- Certain functions (such as NCD tracking dashboard, for example) are not updated due to lack of regular data input
- Lack of information knowledge management / communications dedicated staff across the whole of government
- Ensuring sustainable funding / resources
- Lack of support or buy-in from leadership for long-term continuation of portal after the end of the supporting project
- Long term hosting and backup options for portal
- External stakeholders do not use portal as an information resource
- If collaborative functionality is built into Portal (e.g. a forum) it is not well-used
- Inconsistent internet connectivity will result in portal down time and ad hoc information updating
- Absence of policy or legislation to prompt data/information sharing across Ministries and government departments

These risks may require additional support and resourcing at a broader national level, to provide an enabling environment for more effective information management and sharing. For example:

- Ensuring IKM support is included as a core component of any proposed climate change and disaster risk related project or funding support
- Using the NEPC as a platform to advocate for the importance of national IKM improvement, based on the experience of the recent CB2 project (and Palau's international reporting obligations) and the lessons learned in this portal development process
- Identifying a national champion who could partake in IKM working groups at the regional level, to provide ongoing support and advocacy

As mentioned in Recommendation 11, the development of an information and knowledge management (IKM) framework should also be considered by the Bureau of Budget and Planning, or at an overarching national government level. This can provide both a vision and a pathway for the implementation of mature and innovative information management practices. Typically an IKM framework will outline the key information management principles, policies and practices to be followed, and provides detail on the enabling environment (people, systems and processes) required for the successful creation, management and use of data, information and knowledge.

The Pacific iCLIM project has prepared a set of guidelines for developing IKM strategic frameworks (*"Developing a Strategic Framework for Sustainable Development IKM: Guidelines for the Pacific Region"*) which can assist with the development of an IKM framework for climate change and DRR information.

Finally, many stakeholders identified the need for better dissemination of climate change related information to State Governments and communities. It is acknowledged that an online portal may not be the optimal communication form for these stakeholders, given internet access and cost issues, as

well as the need for local language options. As such, the portal exists as just one tool and it is recommended that a broader CCDRM communications strategy is also developed, looking at other methods of information dissemination that would be appropriate, for example community outreach programs, radio talk shows (utilising local language) etc.

# Creating a National Climate Change Portal in Palau

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## Development Plan

This document will outline a development plan to develop, implement and support a new National Climate Change Portal in Palau.

Please note that it is very important to involve in-country stakeholders whenever feasible to encourage and establish ownership and influence over the portal.

### Early stage

#### Preparing the team for development process

This is where we establish the team and stakeholders that is going to be involved in the development process, and agree on communication tools, methods and structure to be used for going forward.

Discussions to determine how the portal will be hosted, supported and funded going forward, should take place here.

Main timeline with milestones should be developed here.

#### Initial Install of Starter Pack on a test server

Once the team is ready, the source code and instructions for the starter pack will be made available and the developer(s) can start installing this in their development system.

After initial discussions, it seems that SPC will provide a development/test server for this that can be used throughout the development process.

#### Configuration and adding example content

Once the developer(s) have successfully installed the starter pack in their environment, they can start configuring the portal to suit Palau's requirements, and also start entering some sample content into the portal.

This is a stage where it is good to establish connections with in-country stakeholders to discuss requirements, inform them of progress and even let them see/access what's currently up and running if feasible.

## Middle Stage

### Develop new functionality and branding

This is the main development part of this process. Here we are liaising with in-country stakeholders to determine branding and functionality needed based on the initial version of what the starter pack offers.

Incremental progress in this phase is communicated to the whole team, including in-country stakeholders.

## Final Stage

### Provide Training for site admins and system admins

Now the portal is basically ready for use, and training needs to be provided to the people who are going to use and support the portal. For details on training requirements, please see section below on Skills, Training and Support.

### Remove example content and add real content

Once we have the in-country resources trained, we can now add any content that is ready to go into the portal. This could even be used as an exercise during the training to allow people to discover the system.

If there is a lot of content gathered to go into the portal, it might be cost-effective to use a script to automatically import content where possible.

### UA testing by stakeholders

Stakeholders should now be invited to test the new portal and provide feedback. Feedback might lead to fixes/improvements to the portal before go-live.

### Deploy to live server & handover

Now we are ready to go live, and a live server needs to be provisioned and deployed to.

Setup any DNS records for official domain name.

Development team to do a handover exercise to support staff that will support and maintain the portal going forward.

### Launch Activities

Here comes any launch/marketing activities

## Running the portal

Once the portal has been built and handed over - there are a few things to consider in terms of skills and training needed.

### Portal Administration & Content

There are two main user roles needed to support the running portal:

1. **Portal Administrator** : This user role is responsible for keeping the portal software up-to-date and running - managing users etc.
2. **Content Editor** : This user role is responsible for adding/managing content on the portal. For example someone who uploads news, events, projects, documents etc.

Training of these user roles should happen at the handover process after the portal has been built.

## Skills, Training & Support

### IT Skill Requirements

#### Role: System Administrator

- Server Management
- Database management ( install /backup / restore )
- *Basic* Drupal Admin skills such as updating plugins, update Drupal Core and managing user accounts ( *Note: Drupal management is very similar to other popular CMS'es like Wordpress and Joomla* )

#### Role: Content Editor

- Know how to use a web based interface to upload and describe documents and media items.

For adding new functionality that is not supported out-of-the-box from the Starter Pack, access to a php/Drupal and/or front-end developer is needed.

### Training Requirements

- System Administrator training requirements:
  - 2 days total
  - ½ day of going over general Drupal Structure / installation
  - 1 ½ days of going through:
    - Installation of Starter Pack/Portal
    - Drupal Maintenance Routines
    - Server Maintenance Routines
    - Ongoing Support/Troubleshooting Routines
- Content Editor training requirements:
  - 1 day training of
    - using Drupal editing screens
    - Familiarise with included vocabulary/metadata
    - Ongoing Support/Troubleshooting Routines

It is recommended that as many relevant resources as possible attend the training to avoid dependence on single-resources.

Estimated total of 3 days of training required.

### Support

After successful deployment of the new portal based on the starter pack, ongoing support from SPC/SPREP is available

- questions/help around server management, issues and setup.
- questions/help around functionality changes and how these can be implemented
- questions/help around content/user management in the new portal

## Annex 2. Challenges for effective information and knowledge sharing in Palau

### **Related to Policy**

- Current lack of any overarching framework or even MoUs between agencies regarding sharing information / data
- Larger issue of information sharing between agencies not being coordinated – needs higher level policy / guidelines at national level to create culture of sharing and also standardisation of information and data
- PALARIS working towards data security policy but only for this agency
- Not enough local science-based information to inform policies

### **Related to Institutions**

- Unclear duties and responsibilities of key data agencies within national government – need for a review of mandates to clarify roles and identify gaps
- Lack of cooperation (amongst agencies) and information sharing between agencies is not coordinate or consistent
- Also need for national level leadership / champion on this issue – not just PALARIS and Office of Planning and Statistics – needs to come from higher levels to drive change in culture – possible that lessons from CB2 and this current work could help to inform this
- National Statistics Office – authority / mandate for data collection, however main focus is economic statistics and demographic information gathered through the national census process
- PALARIS has the capability within the agency, but lack of resourcing and knowledge / utilisation of their services
- Nothing is happening in terms of data collection in private sector – important with regards to NDCs
- Challenges associated with data sharing on a regular basis – often it is provided once but not continually
- Not receiving updates on progress / activities of key agencies (e.g. feedback from international meetings etc.)
- Difficulty of data being spread across agencies / organisations
- Difficulty of getting information to communities and state governments
- MOE information is not easily accessible
- Transportation information is not centralised (in relation to NDC)
- No central directory of policies and reports
- Inconsistent data as well as untimely / lack of data
- Data gathering is based on relationships

### **Related to Operational and Human Resource Issues**

- Information collection but no analysis of data
- IT capacity is limited (small team, time poor) and limited technical capacity within agencies
- Project focussed information collection

### **Related to Information and Communications Technology**

- Access issues currently within Palau – current internet speed (impedes download/upload of large files) but also cost. High speed internet is not affordable
- Fibre Optic may provide some benefits in early 2018 (however stakeholders spoken to unsure what the benefits might be)
- YouTube, FaceBook and other applications are blocked at the Capital