PACIFIC METEOROLOGICAL COUNCIL

Pacific Islands Climate Services (PICS) Panel

Review of the Structure, Maintenance, and Use of the South Pacific Regional Environment Programme (SPREP) Pacific Climate Change Portal (PCCP)

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Overview

The South Pacific Regional Environment Programme (SPREP) established the Pacific Climate Change Portal (PCCP) to assist its Pacific Island member states in accessing and sharing climate change project and activities information. SPREP is in the process of upgrading the technical capacity of the PCCP to build it in to a primary regional source for discovering, storing and accessing climate change project and activities information in the Pacific Islands.

The PICS Panel was tasked to deliver a brief review to the PMC outlining the structure, scope, use, and maintenance aspects of the SPREP PCCP Projects Database and to summarize database integration factors and issues with other climate change project and activities information sources in the region. The results of the review suggest that;

- The PCCP has the potential to serve as the primary regional source for discovering, storing and accessing climate change project and activities information in the Pacific Islands;
- The primary limiting factor is related to data collection and maintenance – how to keep the content current;
- Minor improvements to the exposition layer, for example with respect to query functions are also warranted to enhance access and use.

Recommendation: Attention should be given to the establishment of regional information management protocols and interoperable database management platforms that would serve as a framework for the development of project and activities information repositories managed at the national or comparable level so as to enable regular harvesting and, in turn, facilitate access to timely information on climate change project and activities in the Pacific Islands (e.g., Tonga, Fiji, and Vanuatu National Portals).

Background

Database Model

The SPREP PCCP Projects Database (http://projects.pacificclimatechange.net/project-search) is intended to store and provide details of climate change projects and activities related to the Pacific Islands Framework for Action on Climate Change (PIFACC) currently being implemented or having been implemented in the Pacific region since 2006.

Data themes utilized are: PIFACC and Sectoral

Primary data categories utilized are: Project Title, Project Type, Scope, Description/Objectives, Project Sites, Agency/Project Contacts, Implementing Countries, Implementing Agencies, Start/End Date, and Status

Secondary data categories utilized are: Development Partners, Donors, Budget, Duration, Documents, Links, and Comments

Features include: Keyword Search, Query by Example, Category Search, Read More (links to full project details), Sort Options, Download Options, and Print Options

Data Collection

There are three data collection mechanisms currently in place:

1) ***Links with National Portals*** – At present there are three pilot Pacific Island Countries and Territories (PICTs) - Tonga, Fiji, and Vanuatu. The PICTs have designated staff who have undergone training to be National Portal editors. Although the reality is that most have not uploaded content to the portal since the training due, in part, to competing commitments as they wear many hats in country. This situation will be addressed with the PCCP undergoing an upgrade in the coming months where this process will be automated to ingest project information from the 3 pilot national portals.

2) ***Links with Regional Interest Groups –*** At present there are two pilot groups: i) the PCCP Advisory Committee, comprised of representatives from partner organizations – Secretariat of the Pacific Community (SPC), German Federal Enterprise for International Cooperation (GIZ), University of the South Pacific (USP), and Pacific Islands Forum Secretariat (PIFS); and ii) the Development Partners for Climate Change (DPCC), a network of predominantly Fiji based donors who exchange information for improved delivery of climate change initiatives, such as enhancing climate change adaptation strategies in the Pacific region. Portal editors have been designated from these groups who are responsible for uploading content to the portal. Partners are allowed access to the user management function. This will be refined during the PCCP upgrade to also have a verification process.

3) ***In-house data collection*** - The PCCP staffs a full time Technical Assistant position whose tasks include collecting and publishing project information from various regional climate change information sources (such as PacificIslandsClimate.org) or when forwarded by SPREP staff or partner agencies. The PCCP Projects Database content has been populated by this method to date.

Data Entry

The completion of a standardized information form is required. Data entry can be done by the source provider or by PCCP staff. Aside from the logical data entry constraints in the fields, there is no form of verification at present. Data source providers are encouraged to review their content for completeness and accuracy. With the PCCP upgrade there will be an added step for verification where a designated person will be required to verify the content before it is published.

Database Input

Verified records that are generated from the project worksheets are input in to the Portal. Database input is restricted to the PCCP staff.

Database Verification/Updating

At present, the database is updated when a significant amount of new content is published. Ideally, regular database quality control will be conducted every 6 months where source

providers will be notified to verify their content. The PCCP Technical Assistant may also conduct visits to source providers to assist them in verifying their content.

Database Staffing/Funding

At present, there are two full time staff under two year contracts working on the PCCP, part of which is the Projects Database. The positons are Knowledge Management Officer and Technical Assistant.

Regional Database Integration Factors and Issues

National and regional agencies and institutions in the Pacific region manage a substantial amount of climate change related project information and data. **The establishment of regional information management protocols and interoperable database management platforms would provide a stable and consistent framework for regional partners to effectively share information that could be easily accessed via linkages to the national level. Improved discoverability and access to information will strengthen communication and collaboration resulting in the leveraging of more climate change initiatives and innovation in Pacific region.**

Comparing the SPREP PCCP Projects Database (http://projects.pacificclimatechange.net/project-search) to the PacificIslandsClimate.org Projects & Activities ("piko") database (http://pacificislandsclimate.org/pawz/):

Both are databases with records generated from project worksheets that have custom categories and text fields. The databases share some common categories (i.e., Project Title, Description/Objectives, Project Status, Agencies, Contact Information, Links). However, the PCCP Projects Database focus is primarily based on the project framework (i.e., Sectoral Theme, Implementing Agencies, Development Partners, Implementing Countries, Begin/End Date). Whereas the PacificIslandsClimate.org Projects & Activities database is primarily based on climate science methodology (i.e., Essential Climate Variable, Capability Area, Focus Area, Time Frame Scale, Region/Locale).

It is not clear if these databases can be "seamlessly" integrated as-is. So a common taxonomy and granularity needs to be worked out. The information from each database would need to be cross-walked into another.

The very first step would be to make these databases more accessible so they can be harvested by potential integration applications. While XML, CSV, etc. may be a good first step to expose a database, it is too raw and almost certainly will not capture the intended semantics of the database record that becomes only meaningful at the application level within the presentation layer. Therefore, **it is the presentation layer semantics that must be carefully formulated and exposed (not the database)**. It is best to use linked data (linkeddata.org) type of connection to begin this process.

Another option is to develop a standard and expose all data in that standard.

The last option is for a database content manager to regularly sync records from each database into another manually. In fact, both the PCCP Projects Database and

PacificIslandsClimate.org content has been populated by this method to date. This is not the most efficient method conceptually, although by default has proven to be the most practical and realistic method in terms of data collection, verification, publication and maintenance. It has met with limited success in achieving the goal of providing timely and accurate information about climate projects and activities in the Pacific Islands.

With respect to the database model and its linkage to the exposition layer, it appears that the while functions work the linkage to the database has not in all cases been coded correctly. Related to this is an observation that the query/search functions are accessed via a somewhat confusing and cluttered interface that yields unpredictable results. Improvements could be made in this area to facilitate easier access to more complete information, for example by incorporating some of the user interface elements from the "piko" database.

Note that 'usage' was not addressed in this review. This is a key element – who is using/or would use it for what and why - that warrants further investigation. Addressing this issue will help to drive both content and functional requirements and thus improvements in these areas.

Related Developmental Activities

Griffith University has been contracted by the Australian Commonwealth Department of Foreign Affairs and Trade for the **Pacific iCLIM Project – Supporting the Regional Management of Climate Change Information in the Pacific** (http://www.griffith.edu.au/research/research-excellence/pacific-iclim). This project commenced in March 2014 and will conclude in June 2016. It will support SPREP in implementing a regional approach to discover, store, access and utilize climate change information and data information management throughout the Pacific. Key project activities and outputs include: i) **PCCP Review and E-infrastructure Upgrade** to determine use cases for the PCCP and scope the best and most regionally appropriate e-infrastructure for meeting these use cases; and ii) **Regional Information Management Protocols** to provide consistent guidelines for describing climate change data and information throughout the Pacific. The project is currently exploring this with Pacific-Australia Climate Change Science and Adaptation Planning (PACCSAP) data and information. Expanding this to other major Pacific region climate projects and activities sources such as PacificIslandsClimate.org is relevant.