INFORMATION AND KNOWLEDGE MANAGEMENT FOR CLIMATE CHANGE (IKM4CC)

Guideline 4: Metadata - Documenting and Describing Information

Griffith UNIVERSITY Queensland, Australia

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SPREP Secretariat of the Pacific Regional Environment Programme

Information and Knowledge Management for Climate Change (IKM4CC)

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Metadata – Documenting and Describing Information

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and

Secretariat of the Pacific Regional Environment Programme (SPREP)

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Australian National Data Service. *Metadata basics* and *Metadata: working level*. Available at: http://ands.org.au/working-with-data/metadata

Best practices for writing metadata, courtesy of the U.S. Geological Survey, available at http://www.usgs.gov/core_science_systems/csas/metadata/best_practices.html#

Griffith University 2013. *Managing Climate Change Adaptation Data and Information: A Reference Guide for Element 2, Stream 2 Projects*. Available at: http://www.terranova.org.au

Isenor, A., Bermudez, L., Watson, S. 2010. "Writing Good Metadata." In *The MMI Guides: Navigating the World of Marine Metadata*. Available at http://marinemetadata.org/guides/mdataintro/writegoodmdata.

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ABOUT THIS GUIDELINE

This guideline is part of the Information and Knowledge Management for Climate Change (IKM4CC) Guidelines. The purpose of Guidelines is to help government departments, and other agencies and organisations that deal with issues related to climate change in the Pacific region, to implement good practices for managing information.

The Guidelines have been developed in consultation with representatives from government departments, NGOs and regional organisations based in the Pacific.

While the Guidelines focus on the management of digital data and information and the challenges posed by the electronic information environment, many of the concepts can also be applied to paper-based information.

This Guideline explores the concept of metadata and how it is used to document and describe information. It looks at metadata creation and explains how good quality metadata can enable climate change-related information to be more easily organised, retrieved, understood and used.

USAGE

Throughout this document the following usage applies:

- the term *information* is used to include data, information, information assets and knowledge. The terms *data*, *knowledge*, and *information assets* are only used when specific reference is required.
- the term *organisation* is used to include a variety of organisation types including government departments, intergovernmental organisations, non-government organisations, regional bodies and public and private agencies. Individual types of organisations are used only when specific reference is required.
- The term *item* is used to refer to an individual information resource. Items can include resources such as books, reports, articles, films, maps, photographs, transcripts, audio or video recordings, and datasets. Items can come in a variety of formats, such as paper, CD, cassette tape, videotape, DVD, and online databases.

WHAT IS METADATA?

"Metadata" is the term most often associated with the process of documenting and describing information. Metadata is structured information which describes information resources. It can be used to describe physical items (e.g. printed photographs or books, plant specimens) as well as digital items (e.g. digital images, electronic documents, datasets). Metadata can also describe intangible things, like projects and services.

Metadata can describe individual items (e.g. an individual photograph, a government project) or collections of similar items (e.g. an album containing related photographs, an aid programme consisting of a number of projects).

Metadata can be thought of as a form of "cataloguing". In a library, the library catalogue contains information about books, so that people can understand what a book is about, who wrote it, and when it

was published, without having to examine the book itself. All this information about the book is known as "metadata".

WHY IS METADATA USEFUL?

Metadata helps people to find, understand, evaluate and use information resources. Metadata tells people who created items, what sort of information they contain, and if and how they are related to other items. Metadata attempts to answer the "who, what, when, where, why and how" about every aspect of an item.

TYPES OF METADATA

Different types of information resources typically have different types of metadata associated with them. Not every resource will have or need every type of metadata. The table below gives examples of the metadata that might be recorded for different items.

Document	Photograph	Radio interview	Dataset	Project
Title	Title	Title of interview	Title	Project name
Author	Photographer	Interviewer	Creator	Funding body
Publisher	Geographic location (where taken)	Interviewee	Where and why was data collected	Implementing organisation
Publication Year	Date taken	Time and date of broadcast	Start and finish dates for data collection	Project start and finish date
Place of Publication	Type of camera used	Name of radio station	Instruments used to collect data	Implementing country
ISBN	Camera settings	Title of radio program	Authenticity of data	Project site
Language	Topics/subject keywords	Language	Software needed to read data	Funding amount
Topics/subject keywords	File type and size	Topics/subject keywords	Other related datasets	Contact person
Summary	Access details	Summary	Summary	Type of project
File type and size	Copyright and licensing	File type and size	Data custodian	Project description
Access details		Access details	File type and size	Relevant documentation
Copyright and licensing		Copyright and licensing	Access details	Link to project website
			Copyright and licensing	

Table 1: Types of metadata typically recorded for different types of information resources

METADATA CATEGORIES

Different types of metadata are commonly arranged into broad, purpose-based categories. Some of these metadata categories are particularly important when describing datasets and data collections.

Metadata category and function	Applicable to…	Provides information about…
Descriptive metadata: basic information used to find, identify and understand a resource	A wide range of resource types	➢ title, author, abstract, subject keywords, resource type, any identification number
Provenance metadata: information about the origin of a resource	Particularly important for describing datasets and data collections	➢ where the data came from ➢ why it was collected ➢ who collected it, when and where ➢ what instruments or technologies were used to collect the data, and how they were set up ➢ what has been done to the data since it was collected
Rights and access metadata: information about access and usage rules	A wide range of resource types	➢ who is allowed to view, edit, or modify the resource or metadata, and under what conditions ➢ who has authority over the resource or is the custodian ➢ who has accessed the resource, and what they have done with it (for datasets) ➢ under what copyright conditions or licence the resource is being made available
Structural metadata: fundamental information for a person or a computer to interpret the resource, including information about relationships between or within resources	Particularly relevant to datasets, data collections and multi-part resources	➢ how data is set up ➢ what formats, and versions of formats, are used ➢ how a database is configured ➢ how data relates to other data ➢ for multi-part resources, how separate parts of the resource should go together
Preservation metadata: includes information to help build a sense of trust in the resource, and allow for the resource to be used long into the future	Particularly relevant to datasets and data collections	➢ whether the data is authentic, authoritative, and original ➢ whether there has been any restructuring, e.g. due to software and file-formats changing ➢ what software has been used to access the data in the past

Table 2: Common metadata categories

HOW IS METADATA CREATED AND STORED?

Metadata can be created and stored in different ways. It can be created automatically or manually, and stored as part of an item or separately from it.

AUTOMATIC METADATA CREATION

Programs such as Microsoft Word and Excel, and instruments such as digital cameras or meteorological equipment, create some metadata that is automatically embedded within files. To see an example of this, check the File Properties of this document.

MANUAL METADATA CREATION

Manual metadata creation is very common and may be done by:

- Filling out an online form - if you are uploading an item to a portal or repository (like the Pacific Climate Change Portal), you will probably be required to fill out details about the item via an online metadata form.
- Using metadata creation software - these are programs that sit on your hard drive and are used to enter metadata, which is then stored in a file (e.g. ANZMetLite is a program that is used to create geospatial metadata that conforms to the ANZLIC standard.)
- Directly embedding or appending metadata to an item - for resources like datasets and documents, metadata is often included inside the same file as the item itself, e.g. by creating an extra worksheet within an Excel file, or a table at the beginning of a Word document. The cataloguing information you see inside the front cover of a book is an example of embedded metadata. It is also possible to add extra metadata to the File Properties of text-based files like Word, Adobe Acrobat, and Excel.
- Recording the metadata in a separate file, for example a TXT or XML file, which is then associated with the item. A library catalogue record is an example of a metadata record that is separate from the item it describes.

CREATING GOOD METADATA RECORDS

Creating good quality metadata can take time and effort, but it will also save you and your end users time and effort in the long run.

UNDERSTANDING YOUR TARGET AUDIENCE

To create quality metadata, you need to include all the documentation and descriptive information that someone would need to locate, understand, evaluate and use an item. You should start by thinking about your target audience and their needs as information users:

- How will they be looking for the item?
- What keywords would they use to search for an item?
- What will they need to know in order to decide whether to view an item?
- What will they need to know in order to understand or use an item?

- Are there any characteristics of the resources that will be of particular interest to them? For example, will they be looking for case studies, lessons learned or scientific articles? Will they be looking for items that relate to a particular geographic location? If so, make sure your metadata includes these characteristics.

GOOD PRACTICE

- Use clear, descriptive writing and avoid jargon where possible.
- Use standard and consistent terminology for dates, languages, countries, and organisation names. For example, when creating metadata for reports published by the UNDP, decide on whether you are going to write the publisher name as "United Nations Development Programme" or "UNDP". Once you've made a decision, try to stick to it.
- Select descriptive keywords that explain the subject matter of the item. Use a controlled vocabulary or thesaurus as a source of keywords if possible. Include "topic" keywords and "place" keywords.
- If you are in charge of naming an item, make sure you create a meaningful title that conveys as much information as possible using the least number of words.
- For digital items, create good file names that are brief but meaningful. Avoid the use of spaces, symbols or characters that might be misinterpreted by a computer, e.g. !, @, <, >, (,).

You can see some examples of good metadata records for different sorts of material in Appendix 1.

METADATA CONCEPTS AND TERMINOLOGY

There are a lot of technical terms in use in the world of metadata. While you don't need to have an in-depth knowledge of all these terms, it's helpful to understand some of the basic concepts, particularly if you have the task of creating metadata regularly or you are setting up an online repository.

METADATA STANDARDS

Many discipline areas have produced their own **standards** that provide detailed guidance on how to describe information resources. These metadata standards are basically agreements that specify **what** information should be collected about a resource, and **how** that information should be formatted. By using metadata standards, people (and computers) can more easily interpret and share metadata that has been created by many different information managers or instruments.

Some common metadata standards include:

- Dublin Core: a simple, non-discipline specific set of standards which is one of the best known and most widely used metadata standards.
- Darwin Core: A body of standards intended to facilitate the sharing of information about biological diversity.
- ISO 19115: An internationally-adopted standard for describing geographic information.
- ANZLIC Metadata Profile: a set of metadata guidelines used in Australia and New Zealand for describing geographic information; based on ISO 19115.

The Dublin Core metadata element set is included in Appendix 2.

METADATA SCHEMAS, PROFILES, ELEMENTS AND VALUES

Metadata standards form the basis for metadata **schemas** (sometimes called **profiles**). These are plans or structures which describe the content and format of metadata and how it should be organised. A metadata schema includes of a set of metadata **elements** (sometimes called **fields**). Each field has a **value** (sometimes called **field content**).

As an example, the figure below shows a document, surrounded by a set of descriptive metadata. The metadata consists of **elements** and **values**. The metadata schema in use here would include a list of the elements, plus some instructions on how to fill out the values.

Figure 1: An example of a metadata set for a document, showing elements and values.

TAXONOMIES, CONTROLLED VOCABULARIES, THESAURII

When it comes to creating metadata (deciding on the **values** for each **element** in a **schema**), there are a couple of common problems:

- people can use different terms to describe the same thing. For example, in Hawaii the date 2nd of March, 2015 might be written as 03/02/2015, whereas in Fiji it might be recorded as 02/03/2015.
- people can use the same terms to describe different things. For example, the word "mitigation" might mean something different to a climate change practitioner and a disaster risk management practitioner.

To get around this problem, **taxonomies, controlled vocabularies** and **thesaurii** have been developed to help people from different places or discipline areas to "speak the same language". These can be thought of as rules and standard languages to follow when creating metadata.

Some examples:

- ISO 639 is a taxonomic standard that provides 2- or 3-letter codes for **languages**
- ISO 8601 is a taxonomic standard that provides recommended formats for **dates** and **times**
- ISO 3166 is a taxonomic standard that provides 3-letter codes for **country names**
- The Thesaurus of Geographic Names is a listing of historical and current **placenames**
- The Virtual International Authority File (VIAF) shows preferred names for **personal and corporate authors**
- GEMET is a multi-lingual thesaurus that provides a core list of subject terms for **environmental concepts**
- AGROVOC is a multi-lingual controlled vocabulary that provides standard terms for **agricultural concepts**
- The Pacific Climate Change Portal Topics Controlled Vocabulary is a list of subject terms that has been developed specifically for describing content stored in the Portal. The PCCP Topics Controlled Vocabulary is provided in Appendix 4.

See Appendix 3 for links to relevant taxonomies and vocabularies.

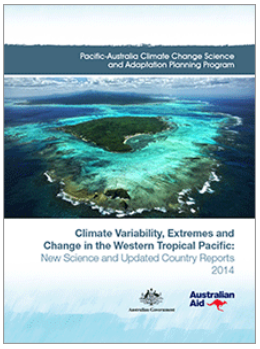
CHOOSING A METADATA SCHEMA

If your job involves creating metadata for information resources, or you are asked to set up a new database or repository to provide access to a particular type of information, you will need to decide on a metadata schema, and associated taxonomies and vocabularies. Here are a few tips:

- Plan from a user's perspective. What sort of descriptive information will your audience need to help them to find or use the resources you are describing?
- Adopt standards as far as you can for all your metadata.
- Check what standards are in use by similar repositories and discipline areas. A listing of disciplinary metadata standards can be found at http://www.dcc.ac.uk/resources/metadata-standards.
- If there is one obvious standard or schema that meets all your needs, use it.
- If a single schema doesn't fit your needs perfectly, you can create a customised profile by combining parts of different metadata schemas and adding local fields. For example you could start with Dublin Core elements and add some extra geographical metadata elements from the ANZLIC Metadata Profile.
- Once you have chosen a schema or created a customised metadata profile, consult with future users and test its suitability.

APPENDIX I: EXAMPLE METADATA RECORDS

EXAMPLE METADATA RECORD: DOCUMENT



This example uses the Pacific Climate Change Portal (PCCP) metadata profile for documents. The PCCP metadata profiles were created specifically for the Portal, but they are similar to well-known metadata schema such as Dublin Core.

PCCP Metadata Element	Value
Title	Climate Variability, Extremes and Change in the Western Tropical Pacific: New Science and Updated Country Reports
Publisher	Australian Bureau of Meteorology & CSIRO
Corporate Author	Australian Bureau of Meteorology, CSIRO
Publication date	2014
ISBN	978-1-4863-0288-8: Print version; 978-1-4863-0289-5: Online version
Physical Description	PDF; 358 pages
Description	This report documents the latest scientific understanding of large-scale climate processes, observations, extremes and projections in the western tropical Pacific. This report builds on the research published in Climate Change in the Pacific: Scientific Assessment and New Research, Volumes 1 & 2 (2011) and provides updated individual country reports for 14 Pacific Island Countries and Timor-Leste featuring the latest CMIP5-based global climate model outputs. The full report and chapter downloads are provided as WCAG2 compliant accessible PDF documents.
Resource Type	Report
Language	eng (English)
Link(s)	http://www.pacificclimatechangescience.org/publications/reports/climate-variability-extremes-and-change-in-the-western-tropical-pacific-2014/
Geographic Area Code	COK (Cook Islands), TLS (East Timor), FSM (Federated States of Micronesia), FJI (Fiji), KIR (Kiribati), MHL (Marshall Islands), NRU (Nauru), NIU (Niue), PLW (Palau), PNG (Papua New Guinea), WSM (Samoa), SLB (Solomon Islands), TON (Tonga), TUV (Tuvalu), VUT (Vanuatu)
Related resource	Australian Bureau of Meteorology and CSIRO (2011). Climate Change in the Pacific: Scientific Assessment and New Research. Volume 1: Regional Overview. Volume 2: Country Reports. http://www.pacificclimatechangescience.org/publications/reports/report-climate-change-in-the-pacific-scientific-assessment-and-new-research/
Topic(s)	Climate Change - Climate projections; Climate Change – Climate models; Climate Change - Climate change science; Meteorology and Weather - Climate
Tag(s)	Climate variability, climate extremes, Pacific, PACCSAP
Citation	Australian Bureau of Meteorology and CSIRO (2014). Climate Variability, Extremes and Change in the Western Tropical Pacific: New Science and Updated Country Reports. Pacific-Australia Climate Change Science and Adaptation Planning Program Technical Report, Australian Bureau of Meteorology and Commonwealth Scientific and Industrial Research Organisation, Melbourne, Australia.
Rights	© Australian Bureau of Meteorology and Commonwealth Scientific and Industrial Research Organisation (CSIRO) 2014
Related project	Pacific-Australia Climate Change Science and Adaptation Planning (PACCSAP)
Related project - link	https://www.environment.gov.au/climate-change/adaptation/international-climate-change-adaptation-initiative/paccsap

This example uses the Pacific Climate Change Portal (PCCP) metadata profile for projects.

PCCP Metadata Element	Value
Project Title	Pacific Adaptation to Climate Change
Short Title	PACC
Description	The Project aims at providing a substantive contribution to integrate longer-term climate change risks into development and resource management planning in the Pacific through: focusing on enhancing the resilience of current development activities to the impacts of long term climate change; incorporating adaptation to climate-change risks and related vulnerabilities into existing institutional and decision-making processes ("mainstreaming"), at both the community level and the national planning level; recognizing the role of gender-sensitive approaches in enhancing communities' resilience, through community-based ("bottom-up") vulnerability assessment and participatory adaptation planning approaches; promoting a real community engagement in the processes addressing climate-related risk; delivering tangible adaptation measures through practical demonstration projects at selected pilot sites; and selecting a foundation for a strategic approach to replicate and upscale adaptation at the Pacific regional level.
Project Scope	Community; National
Project Type	Capacity Building; Knowledge Communication; Pilot / Trial / Demonstration Project; Planning and Governance; Policy Support
Project Status	Completed
Start Date	01/01/2009
End Date	30/06/2015
Duration	78 months
Project Objective	To reduce vulnerability and increase adaptive capacity to the adverse effects of climate change in key development sectors identified by 14 participating countries and territories in the Pacific. The key sectors identified are: 1. Coastal zone management 2. Food production and food security 3. Water resource management
Donor	Global Environment Facility; Australian Agency for International Development
Total Funding (USD)	20,800,000
Amount (Donor Currency)	USD 20,800,000
Implementing Countries	Cook Islands, Federated States of Micronesia, Fiji, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Solomon Islands, Samoa, Tokelau, Tonga, Tuvalu, Vanuatu
Related Documents	PACC Project Document http://www.sprep.org/att/publication/000829_PACC_PRODOC_300708.pdf; PACC Technical Reports http://www.sprep.org/pacc/publications/technical-reports; PACC Programme (SPREP) http://www.sprep.org/attachments/Publications/CC/PACC_Programme.pdf; PACC Experiences http://www.sprep.org/pacc/publications/experiences; PACC Mainstreaming Guide http://www.sprep.org/attachments/Publications/CC/PACC_Mainstreaming_2014.pdf;
Related Projects	PACC+ http://projects.pacificclimatechange.net/projects/pacc-australia-undp-sprep-partnership-programme-pacific-adaptation-climate-change
Related Links	PACC Website http://www.sprep.org/pacc; PACC Country Projects http://www.sprep.org/pacc/country-projects
Implementing Agency	United National Development Programme; Secretariat of the Pacific Regional Environment Programme
Project Contact	Peniamina Leavai
Topics	Agriculture, Forestry and Fishing - Agriculture; Agriculture, Forestry and Fishing – Food security; Climate Change – Adaptation; Climate Change – Resilience; Climate Change – Risks; Climate Change – Vulnerability; Natural Resources and the Environment – Coastal Zone; Natural Resources and the Environment – Natural Resource Management; Water

Focus Area	capacity building; mainstreaming; communication and awareness; community-based approach; planning; sustainability
Tags	demonstration projects; upscaling; community engagement
Outcomes	The three outcomes that the project is striving to achieve are: 1. Policy changes to deliver immediate vulnerability-reduction benefits in the context of emerging climate risks are defined in all PACC countries ('mainstreaming'). 2. Demonstration measures to reduce vulnerability in coastal areas (Cook Islands, Federated States of Micronesia, Samoa and Vanuatu), food production (Fiji, Papua New Guinea, Palau and Solomon Islands) and water management (in Marshall Islands, Nauru, Niue, Tonga, Tokelau and Tuvalu) are implemented in selected communities ('demonstrations'). 3. Capacity to plan for and respond to changes in climate-related risks are improved ('knowledge')

EXAMPLE METADATA RECORD: DATA COLLECTION

For a good practice example, see the following record from the CSIRO Data Access Portal:

Projections of coral bleaching risk in the Western Pacific under different levels sea surface temperature increases

http://dx.doi.org/10.4225/08/551413D6B8141

APPENDIX II: THE DUBLIN CORE METADATA ELEMENTS

Dublin Core Metadata Element Label	What goes in the element field?	Equivalent element in Pacific Climate Change Portal (PCCP) Document Library
Contributor	The name of the entity responsible for making contributions to the resource. E.g. a person, an organisation, or a service.	Related name
Coverage	The spatial or temporal topic of the resource, the spatial applicability of the resource, or the jurisdiction under which the resource is relevant.	Location
Creator	An entity primarily responsible for making the resource. E.g. a person, organisation, or a service	Author(s)
Date	A point or period of time associated with an event in the lifecycle of the resource.	Publication date
Description	An account of the resource, e.g. an abstract, a table of contents, a graphical representation, or a free-text account of the resource.	Description
Format	The file format, physical medium, or dimensions of the resource, e.g. file type, size, number of pages	Physical description
Identifier	An unambiguous reference to the resource within a given context	ISBN
Language	A language of the resource	Language
Publisher	An entity responsible for making the resource available e.g. a person or organisation	Publisher
Relation	A related resource	Related project
Rights	Information about rights held in and over the resource e.g. a statement about copyright and licensing	Rights statement
Source	A related resource from which the described resource is derived	n/a
Subject	The topic of the resource, e.g. keywords, key phrases or classification codes	Topics/Tags/Focus area
Title	A name given to the resource, i.e. the name by which the resource is known	Title
Type	The nature or genre of the resource, e.g. is it a document, a dataset, a collection, an event, an image, a physical object	Resource type

APPENDIX III: LINKS TO USEFUL RESOURCES

METADATA CREATION

Data One – Best practices for describing scientific data sets https://www.dataone.org/best-practices/describe

Australian National Data Service Metadata Guide: http://ands.org.au/guides/metadata-working

Writing Good Metadata (from Marine Metadata Interoperability project): https://marinemetadata.org/guides/mdataintro/writegoodmdata

USGS Metadata Guide: http://www.usgs.gov/core_science_systems/csas/metadata/index.html

METADATA STANDARDS

DCC Disciplinary Metadata Standards Listing: http://www.dcc.ac.uk/resources/metadata-standards

AS/NZS ISO 19115 Geographic information – Metadata - Parts 1 and 2 - an internationally-adopted schema for describing geographic information and services http://www.dcc.ac.uk/resources/metadata-standards/iso-19115

ANZLIC Metadata Profile (an Australian/New Zealand Profile of AS/NZS ISO 19115:2005) - for describing geographic information and services: http://www.anzlic.gov.au/resources/metadata

ISO 15836 Information and documentation – The Dublin Core metadata element set– a basic, non-discipline specific standard, consisting of a core set of 15 metadata terms that can be used to describe a wide variety of resources (e.g. web resources, physical resources, objects). It is one of the most widely used metadata standards: http://www.dcc.ac.uk/resources/metadata-standards/dublin-core

ISO 639.2 Codes for the representation of names of languages – Part 2– 3 letter codes for representing languages: http://www.loc.gov/standards/iso639-2/php/code_list.php

ISO 3166-1 Codes for the representation of names of countries and their subdivisions - Part 1 - 3 letter codes for representing countries: https://en.wikipedia.org/wiki/ISO_3166-1_alpha-3

ISO 8601 Data elements and interchange formats—Information interchange— Representation of dates and times – international standard covering the exchange of date and time-related data, to avoid misinterpretation of numeric representations of dates and times: https://en.wikipedia.org/wiki/ISO_8601

CONTROLLED VOCABULARIES

Vocabularies: Dictionaries, Ontologies, and More (from Marine Metadata Interoperability project). Includes listing of well-known controlled vocabularies. https://marinemetadata.org/guides/vocabs

GEMET - the GEneral Multilingual Environmental Thesaurus: http://www.eionet.europa.eu/gemet

AGROVOC - FAO's multilingual thesaurus covering agricultural science and technology: http://aims.fao.org/standards/agrovoc/concept-scheme

REEGLE Clean Energy & Climate Glossary and Thesaurus: http://www.reeep.org/clean-energy-and-climate-glossary-thesaurus

ISO 25964 Information and documentation - Thesauri and interoperability with other vocabularies – the international standard for creating a thesaurus to support information retrieval: https://en.wikipedia.org/wiki/ISO_25964

APPENDIX IV: PACIFIC CLIMATE CHANGE PORTAL TOPICS VOCABULARY (V2.0 FEBRUARY 2016)

This is a two-level, controlled vocabulary developed for use with the Pacific Climate Change Portal, and applicable more broadly to the Pacific region. It covers the subject areas that are directly related to, or can be associated with, climate change and disaster risk management. It can be used to classify resources (documents, projects etc.) according to theme or topic.

AGRICULTURE, FORESTRY AND FISHING

- Agriculture
- Aquaculture
- Crops
- Deforestation
- Fisheries
- Food Security
- Forestry
- Livestock
- Pests
- REDD / REDD+

CLIMATE CHANGE

- Adaptation
- Carbon
- Carbon sequestration
- Climate change science
- Climate models
- Climate projections
- Greenhouse gases
- Impacts
- Loss and damage
- Mitigation
- Ocean acidification
- Resilience
- Risks
- Sea level rise
- Vulnerability

CULTURE AND TRADITIONAL KNOWLEDGE

- Cultural heritage and preservation
- Culture
- Language
- Religion and belief systems
- Traditional ecological knowledge
- Traditional knowledge

DISASTER RISK MANAGEMENT

- Adaptation
- Complex emergency
- Cyclone
- Disaster management
- Disaster preparedness
- Disaster relief
- Disaster response
- Disaster risk

DISASTER RISK MANAGEMENT (continued...)

- Disaster risk reduction
- Drought
- Early warning system
- Earthquake
- Fire
- Flood
- Geological hazard
- Hazard
- Heatwave
- Hydro-meteorological hazard
- Landslide
- Loss and damage
- Mitigation
- Natural hazard
- Resilience
- Storm
- Storm surge
- Technological hazard
- Tsunami
- Volcanic eruption
- Vulnerability

ECONOMICS AND FINANCE

- Climate finance
- Economic development
- Economics
- Finance
- Low carbon development
- Sustainable development
- Trade

EDUCATION AND TRAINING

- Adult education
- Community education
- Literacy
- Preschool education
- Primary education
- Schools
- Secondary education
- Teachers and teaching
- Tertiary education
- Vocational education

EMPLOYMENT

- Unemployment
- Wages
- Working conditions

ENERGY

- Emission reduction
- Emissions
- Energy efficiency
- Low carbon energy
- Renewable energy
- Renewable energy targets

GOVERNMENT, LAW AND ADMINISTRATION

- Climate negotiations
- Governance
- International agreements
- Law and regulation
- Monitoring and evaluation
- Organisations
- Panels and working groups
- Policy and planning

HEALTH

- Communicable diseases
- Disease prevention and control
- Mental health
- Non-communicable diseases
- Nutrition
- Public health
- Sanitation

HUMAN SETTLEMENTS

- Housing
- Land tenure
- Land use
- Regional planning
- Rural settlements
- Urban planning
- Urban settlements

INDUSTRY

- Construction and Engineering
- Insurance
- Manufacturing
- Mining
- Telecommunications
- Tourism
- Transport
- Waste management

INFORMATION TECHNOLOGY AND INFORMATION MANAGEMENT

- Information management
- Geographical information systems
- Information technology
- Knowledge management

METEOROLOGY AND WEATHER

- Atmosphere
- Climate
- Meteorology
- Rainfall
- Snow and ice
- Temperature
- Tides
- Weather

NATURAL RESOURCES AND THE ENVIRONMENT

- Air quality
- Biodiversity
- Coastal zone
- Conservation
- Degradation
- Ecology and ecosystems
- Habitat restoration
- Inland waters
- Land forms and cartography
- Islands
- Natural resource management
- Oceans
- Pollution
- Reefs
- Soils
- Vegetation
- Wildlife

POPULATION AND DEMOGRAPHICS

- Demography
- Migration
- Population growth

SECURITY AND CONFLICT

- Conflict
- International relations
- Security

SOCIAL DEVELOPMENT

- Ageing
- Civil society
- Crime
- Gender
- Human rights
- Poverty
- Social conditions
- Social services
- Women
- Youth

TECHNOLOGY

- Technology transfer

WATER

- Water quality
- Water rights
- Water security
- Water storage
- Water supply

Qualifiers (These are an extra set of terms that can either be appended to any term in the Vocabulary, or can be used as a separate list to describe the focus of a resource. In the PCCP, a separate metadata field called "Focus Area" has been created that uses this list as the associated vocabulary.)

assessment
best practice guides
capacity building
case studies
communication and awareness
community-based approach
engagement
environmental impact assessments
indicators
infrastructure
lessons learned
mainstreaming
management
mapping
monitoring
planning
statistics
surveys
sustainability
techniques
training manuals and tools
vulnerability assessments