

INFORMATION AND KNOWLEDGE MANAGEMENT FOR CLIMATE CHANGE (IKM4CC) STRATEGIC FRAMEWORK

Guidelines for the Pacific Region



Information and Knowledge Management
for Climate Change (IKM4CC)
Strategic Framework:
Guidelines for the Pacific Region

Griffith University

and

Secretariat of the Pacific Regional Environment Programme (SPREP)

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Griffith University. Managing Climate Change Adaptation Data and Information: A Reference Guide for Element 2, Stream 2 Projects. Available at: <https://www.terranova.org.au/repository/managing-climate-change-adaptation-data-and-information/managing-climate-change-adaptation-data-and-information-a-reference-guide-for-natural-resource-management-nrm-projects>

NSW Government ICT Strategy. Information Management Framework. Available at: <https://www.finance.nsw.gov.au/ict/priorities/managing-information-better-services/information-management-framework>

PARBICA. Recordkeeping for Good Governance Toolkit: <http://www.parbica.org/sharing/publications/recordkeeping-for-good-governance/index.aspx>

Queensland Government Chief Information Office. Information Management Policy Framework. Available at: <https://www.qgcio.qld.gov.au/products/qgea-documents/548-information/2349-information-management-policy-framework>

Queensland Government Chief Information Office. Queensland Government Information Management Policy Framework Definitions. Available at: <https://www.qgcio.qld.gov.au/products/qgea-documents/548-information>

UNISDR. Information and Knowledge Management for Disaster Risk Reduction (IKM4DRR) Framework and Scorecard: Available at http://www.unisdr.org/files/35238_ikm4drframeworkscorecard.pdf

Victorian Government CIO Council. WoVG Information Management Principles. Available at: <http://www.enterprisesolutions.vic.gov.au/wp-content/uploads/2016/02/IM-GUIDE-00-Information-Management-Principles-2.0.pdf>

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USAGE AND DEFINITIONS

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 *IKM* is used as shorthand for *information and knowledge management*.

DEFINITIONS

Information management (IM)	The collection, processing, organisation, storage and dissemination of data and information for a specific purpose ¹ .
Knowledge management (KM)	The leveraging of people, resources, processes and information to achieve a strategic objective ¹ .
Information and knowledge management (IKM)	The dual activities of information management and knowledge management, which may be undertaken as separate or integrated activities within an organisation.
Data	The representation of facts, concepts or instructions in a formalised manner suitable for communication, interpretation or processing ² .
Information	Any collection of data that is processed, analysed, interpreted, classified or communicated in order to serve a useful purpose, present facts or represent knowledge in any medium or form. This includes presentation in electronic (digital), print, audio, video, image, graphical, cartographic, physical sample, textual or numerical form ² .
Information assets	An identifiable collection of data recognised as having value for the purpose of enabling an agency to perform its business functions ² .
Knowledge	A body of understanding that is constructed by analysing information. Knowledge may be recorded or embedded within people in organisations ² .

¹ Definition from UNISDR 2013, Information and Knowledge Management for Disaster Risk Reduction (IKM4DRR) Framework and Scorecard. Geneva, UNISDR.

² Definition from QGCIO 2009, Queensland Government Information Management Policy Framework Definitions. Brisbane, State of Queensland (Department of Public Works).

INTRODUCTION

This document was developed by the Pacific iCLIM Project and SPREP, in consultation with Fiji, Tonga and Vanuatu Government representatives working in the areas of environmental management, climate change and disaster risk management. Regional development and information management experts from organisations in the Pacific region including SPREP, SPC, GIZ, PARBICA, UNDP and USP were also consulted and provided valuable feedback.

The purpose of this document is to guide the development of strategic frameworks for managing data, information and knowledge relevant to sustainable development and the related areas of climate change and disaster risk management. This guidance is for governments, agencies, regional bodies and other organisations in the Pacific region. Summary advice on key information management issues is provided as an Annex.

In addition, these framework guidelines are accompanied by a set of information and knowledge management guidelines³ that provide greater direction on selected information management topics and practices. Additional resources will be developed over time, based on user priorities and feedback.

THE IMPORTANCE OF IKM

Information is a resource of critical importance to governments and other organisations. It flows through every work process, and impacts every decision.

Information is a valuable asset. The goal of IKM is to enable organisations to control, administer, use and share these assets in a secure, efficient and accountable manner that maximises their impact and return on investment.

Good information and knowledge management can:

- *Enable evidence-based policy and decision making*
- *Save an organisation time and money*
- *Reduce staff time and effort required to locate and access relevant information*
- *Avoid the need to continually re-create corporate knowledge*
- *Protect the government's interests*
- *Protect the community's interests*
- *Create opportunities for innovation through information reuse*
- *Facilitate economic opportunities, growth and investment.*

IKM, SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE

The United Nations' *2030 Agenda for Sustainable Development* outlines the three dimensions of sustainable development - economic, social and environmental – and calls for integrated solutions to the sustainable development challenges faced by developing countries.

³ IKM4CC Guidelines are available via the Pacific Climate Change Portal: <http://www.pacificclimatechange.net/document/information-and-knowledge-management-climate-change-ikm4cc-complete-set>

Within the Pacific region, the draft Strategy for Climate and Disaster Resilient Development in the Pacific (SRDP) outlines the linkages between sustainable development, disaster risk management and climate change responses. It highlights the need for “open and ready access to reliable sources of traditional and contemporary information... to manage disaster and climate risks in an effective and efficient manner”⁴.

KEY CONSIDERATIONS

- *1: Sustainable development goals and the related issues of climate change and disaster risk management should be considered as part of all planning, decision-making and policy processes.*
- *2: Given the broad scope of sustainable development, climate change and disaster risk management, relevant information will be both produced and required by organisations working in many different sectors.*
- *3: Sustainable development, climate change and disaster risk management are areas of high public interest. Citizens and communities need information about how these issues will affect them, and what they can do to minimise, adapt to or cope with likely impacts.*

GOALS OF IKM FOR SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE

IKM can address these considerations and help achieve the following goals:

- *Goal 1: Planners and decision-makers have easy access to reliable, accurate and up-to-date data and information to assist in the goals of sustainable, climate and disaster resilient development*
- *Goal 2: information is managed in a way that enables a regular flow of information between sectors*
- *Goal 3: information held by governments and other organisations in the region is managed and packaged so it can be understood and utilised by citizens and communities.*

WHY HAVE AN IKM FRAMEWORK?

An IKM strategic framework can provide both a vision and a pathway for the implementation of mature and innovative information management practices. Such practices are critical to ensuring that information is successfully managed and utilised as a valued strategic asset.

An IKM framework also allows greater clarity and agreement on overarching goals and intended outcomes. It outlines key principles, policies, practices and standards that must be adhered to, and provides detail on the enabling environment required for successful implementation.

SUGGESTED APPROACH TO STRATEGIC FRAMEWORK DEVELOPMENT

The approach to developing a strategic IKM framework outlined in this document is based on four key recommendations:

- 1. Base the framework on information and knowledge management principles;*
- 2. Link principles to intended outcomes for governments, organisations and citizens;*
- 3. Build policies and procedures around the key stages of the information life cycle;*
- 4. Identify the people, systems and processes required to enable successful IKM.*

⁴ Strategy for Climate and Disaster Resilient Development in the Pacific (Draft v.17), accessed 29 March 2016 <http://gsd.spc.int/srdp/>

IKM PRINCIPLES AND OUTCOMES

Suggested principles and outcomes to ensure the value of climate change information is maximised:

PRINCIPLE 1: RECOGNITION OF VALUE

- Outcome 1.1. Information is recognised and governed as an asset of strategic, operational and administrative value.
- Outcome 1.2. IKM is recognised as core organisational business and is embedded in relevant strategies, policies and processes.

PRINCIPLE 2: GOVERNANCE FRAMEWORK

- Outcome 2.1. IKM is guided by a clearly documented and endorsed governance framework.
- Outcome 2.2. The framework should outline the broad business, organisational and legislative environment within which information is created and managed.
- Outcome 2.3. The framework will typically include key components such as strategies, policies and guidelines to guide the creation, use and management of information assets.

PRINCIPLE 3: LEADERSHIP & RESOURCING

- Outcome 3.1. Strong, visible leadership and adequate resourcing are in place to ensure that IKM is sustainably integrated into systems and work processes.
- Outcome 3.2. Dedicated and skilled staff are in place to support effective IKM.

PRINCIPLE 4: ORGANISATION & CONTROL

- Outcome 4.1. Information is controlled, administered and maintained securely, efficiently and accountably, according to common information management and information technology standards.
- Outcome 4.2. This will help ensure it is securely preserved, reliable, discoverable, accessible, exchangeable and reusable.

PRINCIPLE 5: USE & REUSE

- Outcome 5.1. Information is shared with other agencies and with the public where appropriate, after full consideration of privacy and confidentiality issues and cultural sensitivities of citizens and organisations.
- Outcome 5.2. Information is provided to stakeholders in a way that makes it easy to discover, retrieve, understand, use and adapt.
- Outcome 5.3. The routine use of information to strengthen planning, decision-making, resource allocation, reporting and communication is supported.

PRINCIPLE 6: COLLABORATION & COOPERATION

- Outcome 6.1. Inter-agency and cross-jurisdictional networking and cooperation are formalised at national and regional levels, to enable sharing and standardisation of IKM procedures in the Pacific region.
- Outcome 6.2. Sharing of information and expertise is maximised, duplication of effort is minimised, and the value of information, human and technological capacity in the region is fully utilised.

KEY STAGES OF THE INFORMATION LIFECYCLE

A clear breakdown of the “information lifecycle” requirements of a government or organisation (see Figure 1) can help identify and define the various areas which contribute to effective information and knowledge management, and can guide the development of policies, guidelines and operating procedures. Understanding the steps involved in IKM can also help identify the key enablers required to achieve intended outcomes.

Annex 1 of this document provides a more detailed analysis of the key IKM issues faced at each step of the information lifecycle, and gives summary recommendations for good practice.

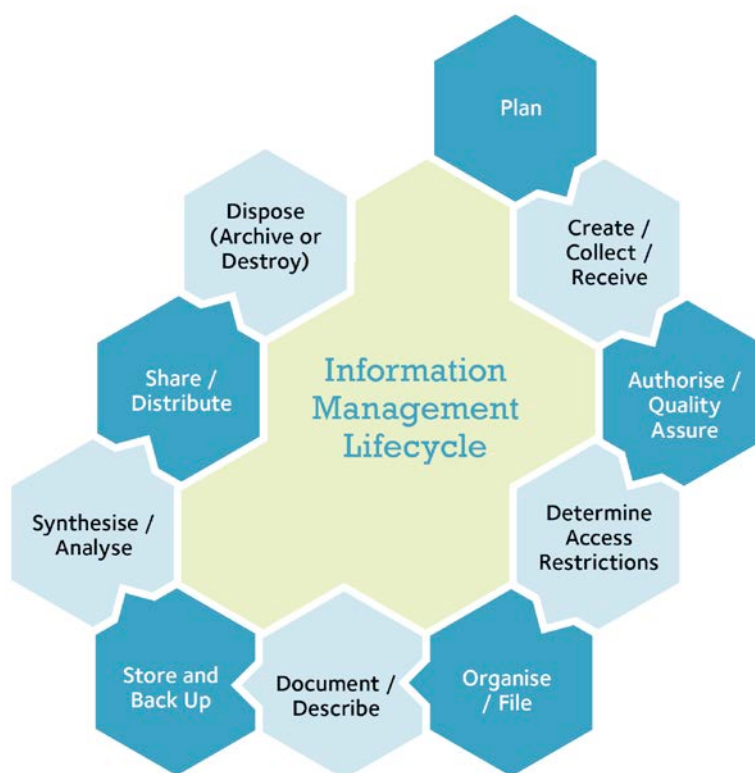


Figure 1. The Information Management Lifecycle

KEY ENABLERS OF SUCCESSFUL IKM

An IKM strategic framework should identify all the people, systems and processes within a government or organisation that enable the successful creation, management and use of information. These typically include:

- Laws - any legal requirements relevant to managing data and information.
- Policies and Procedures and Standards - policies, guidelines and operating procedures for managing data and information according to recognised standards.
- Technology - sustainable technology infrastructure and practices to support data and information management.
- Capacity - skills and expertise required to support information and knowledge management.
- Funding - sustainable funding to carry out information and knowledge management activities as part of core business.

SAMPLE IKM STRATEGIC FRAMEWORK FOR THE PACIFIC REGION

Figure 2 provides a sample IKM Strategic Framework for the Pacific based on the approach outlined above.

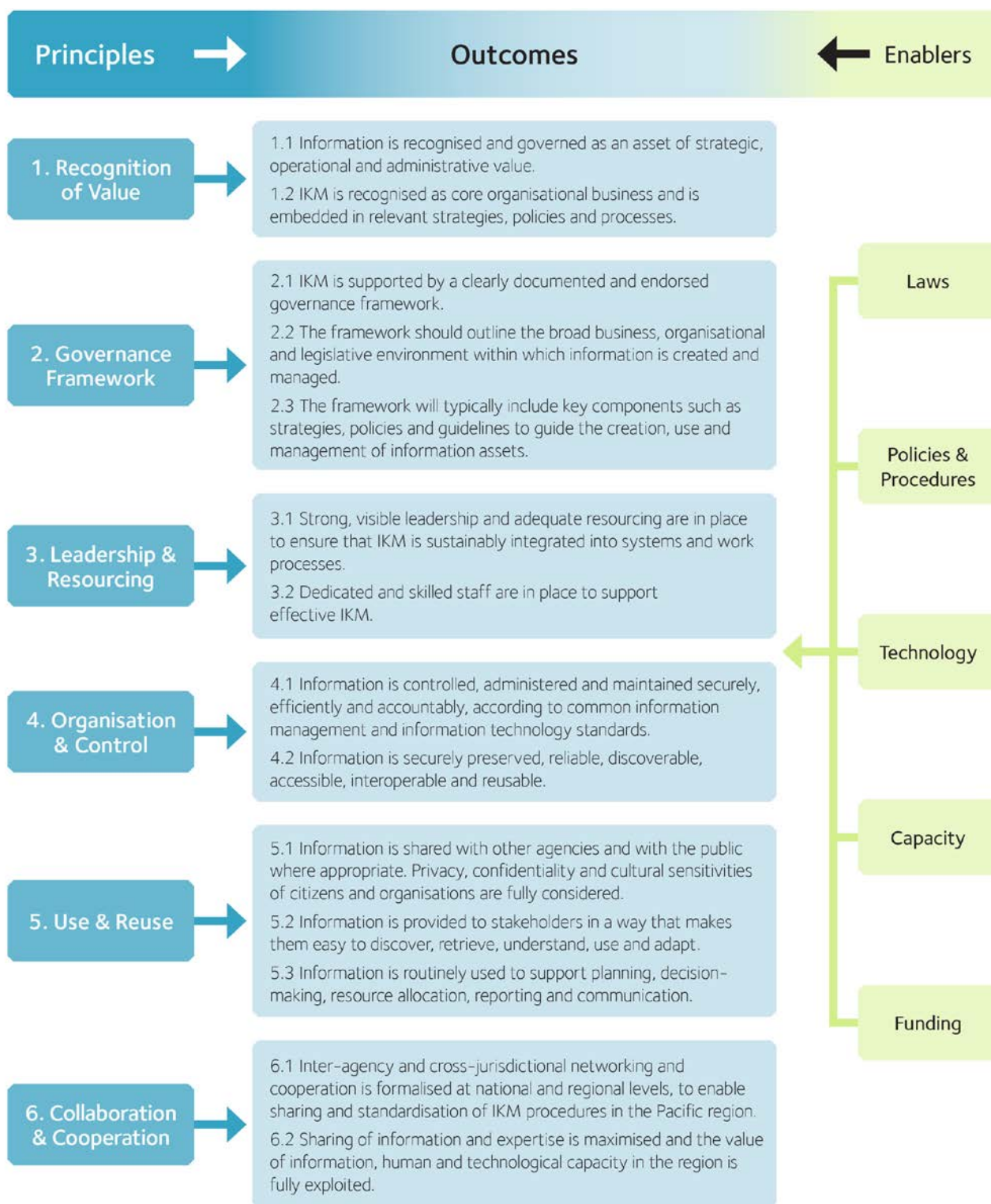


Figure 2. Sample IKM for Climate Change Strategic Framework for the Pacific region detailing Principles, Outcomes and Key Enablers

ANNEX I: KEY INFORMATION MANAGEMENT TASKS, ISSUES AND RECOMMENDED PRACTICES

Task	Key IM issues	Summary advice	Associated Guidelines	Useful Links, Examples or Templates
Planning for information management	Guiding strategies and frameworks Organisational readiness to implement new IM initiatives Strategies and systems for managing information Legislative requirements	Develop an information and knowledge management strategic framework which sets out required inputs, governance arrangements, roles and responsibilities, principles, policies, guidelines, and operating procedures. Choose an information management strategy/system that is most suited to your organisation. Assess the maturity or your current information management activities, and the readiness of your organisation to implement and support any new systems or processes. You may like to use or modify an existing assessment tool. Make sure new initiatives have high level support, are demand-driven, standards-based, sustainable, and can be monitored and evaluated. Comply with any legislation, regulations or policies in place in your country or department, e.g. Government Information & Records Management, Information Security Policy, Copyright Legislation, Privacy Legislation, Freedom of Information Policies.	Details of relevant guideline from the Information and Knowledge Management for Climate Change (IKM4CC) Guidelines⁵ IKM4CC Guideline 2: Preparing for Successful IKM, includes: • Strategic IM frameworks • IM readiness and maturity • Overview of strategies and systems for storing and organising information	Model Recordkeeping Policy (PARBICA Guideline 3) http://www.parbica.org/sharing/publications/recordkeeping-for-good-governance/index.aspx Digital recordkeeping – choose the best strategy (PARBICA Guideline 14) http://www.parbica.org/sharing/publications/recordkeeping-for-good-governance/index.aspx Digital Recordkeeping Readiness Self-assessment Checklist (PARBICA Guideline 13) http://www.parbica.org/sharing/publications/recordkeeping-for-good-governance/index.aspx Information Management Maturity Measurement Tool IM3 (Victorian Government) http://prov.vic.gov.au/government/information-management-maturity-measure-tool-im3

⁵ IKM4CC Guidelines available via the Pacific Climate Change Portal <http://www.pacificclimatechange.net/document/information-and-knowledge-management-climate-change-ikm4cc-complete-set>

Creating new information	File naming Version control Asset registers Copyright and licensing	Name new files according to a systematic naming convention. Give files titles that reflect what is in the files and are understandable to people using the files. Use a system to keep track of document versions e.g. a version control table within a document. Store master copies securely in a single location and limit 'write' access to them. Consider the use of an asset register to record details of major documents or datasets your organisation has created. If your country has copyright laws, any new information you create will probably be subject to copyright and people may be limited in the use they can make of it. Consider licensing information outputs with a Creative Commons licence, so others can more fully reuse or repurpose them, while still giving your organisation credit.	IKM4CC Guideline 5: Copyright, Legal and Ethical Issues, includes: • Copyright and licensing issues • Open licensing and Creative Commons licences	File Names and Folder Structures (UK Data Archive) http://data-archive.ac.uk/create-manage/format/organising-data Version Control and Authenticity (UK Data Archive) http://data-archive.ac.uk/create-manage/format/versions Digital recordkeeping – choose the best strategy (PARBICA Guideline 14) http://www.parbica.org/sharing/publications/recordkeeping-for-good-governance/index.aspx Copyright and Licensing toolkit http://www.oerafrica.org/copyright-and-licensing-toolkit Creative Commons Factsheets http://creativecommons.org.au/learn/fact-sheets/
Sourcing existing information	Information stocktakes Copyright and licensing	A formal stocktake can help you to discover and record what information your organisation or other organisations hold. Make sure you define the purpose and scope of your stocktake before you start. Use an inventory to record details about the information you discover. Before you use or share information created by other organisations, check for any copyright, licensing or other terms-of-use restrictions. You may also discover relevant information by searching other climate change repositories, or using a search engine like Google or Google Scholar.	IKM4CC Guideline 3: Sourcing and Sharing Information, includes: • Data Stocktake Guidelines and templates • Key Climate Change Repositories • Internet Searching Techniques and Tips Guideline 5: Copyright, Legal and Ethical Issues	Example: Stocktake for the Environment Domain Plan 2012 (Statistics NZ) http://www.stats.govt.nz/browse_for_stats/environment/environmental-economic-accounts/environment-domain-plan-stocktake-paper.aspx

Collecting or receiving information	Data sharing agreements/MOUs Asset registers	If you need to collect information regularly from other departments or organisations, consider formalising the arrangement with a data sharing agreement or MOU. Consider the use of an asset register to record details of major documents or datasets that your organisation has collected or received.	IKM4CC Guideline 3: Sourcing and Sharing Information, includes: • Data Sharing Guidelines • Key components of data sharing agreements	Good Practice Guide to Sharing your Data with Others (Australian National Statistical Service) http://www.nss.gov.au/nss/home.nsf/NSS/E6C05AE57C80D737CA25761D002FD676?opendocument
Transferring information	Secure data transfer Data encryption	Avoid transferring personal or confidential information via email or through a file sharing service like Dropbox. If you must use email to transfer sensitive information, encrypt it first using an industry-standard encryption technology like PGP (Pretty Good Privacy). When transferring data using CDs or Flash Drives (USB sticks), make sure the original data is stored and backed up elsewhere.		Transmitting and Encrypting Data (UK Data Archive) http://data-archive.ac.uk/create-manage/storage/encrypt
Authorising or Approving information	Access control Master copies Authenticity checks	Prevent unauthorised changes to information and data by having a process which outlines who can access and edit documents. Maintain authenticity by keeping a single master file, and control 'write' access to master files. For datasets, consider using infrastructure that offers authenticity checks such as checksums, and provides reports of file corruptions and instances of unauthorised access.		Version Control & Authenticity (UK Data Archive) http://data-archive.ac.uk/create-manage/format/versions
Organising/filing information	File naming Folder naming and structures Use of Business Classification Schemes	Use meaningful file names that uniquely identify files and provide clues to their content and status. Avoid very long file names, and avoid using spaces and special characters. Create a logical folder structure to organise information on network drives so staff can locate information when they need it. Use your organisation's functions and activities as a basis for your folder structure and naming. Consider implementing a business classification scheme based on your organisation's functions and activities. The development of a classification scheme usually requires input from a records management expert.	IKM4CC Guideline 2: Preparing for Successful IKM, includes: • Overview of strategies and systems for organising and storing information	File Names and Folder Structures (UK Data Archive) http://data-archive.ac.uk/create-manage/format/organising-data Tips for Managing Shared Folders (PARBICA Guideline 14, Appendix A) http://www.parbica.org/sharing/publications/recordkeeping-for-good-governance/index.aspx Developing and Implementing Record Plans for Core Business

				Functions (PARBICA Guideline 6) http://www.parbica.org/sharing/publications/recordkeeping-for-good-governance/index.aspx
Documenting/describing information (creating metadata)	Metadata standards and schemas Controlled vocabularies	[Explanatory Note: Metadata is structured information that describes physical or digital items such as documents, images and datasets. It can be compared to the “cataloguing” of materials held in a library.] When creating metadata, try to include all the information a person would need to discover, access, understand and use the item you are describing. Follow national, regional or international standards when creating metadata. This will mean the maximum number of people (and computer systems) will be able to understand and interpret the items you are describing. For example: ➤ use or adapt existing metadata schemas or profiles when setting up repositories, e.g. Dublin Core (widely used, simple metadata standard), Darwin Core (for biodiversity data), ISO 19115/ANZLIC metadata profile (spatial data). ➤ use ISO standards for date formats, languages and geographic information. ➤ Use commonly understood terms, preferably from a controlled vocabulary or thesaurus, to describe the subject matter of the item you are describing. Datasets and data collections need extensive metadata if they are to be understood and reused. Describe the “who, what, where, when, why and how” of the data.	IKM4CC Guideline 4: Metadata, includes: • Good practice examples of metadata records • Dublin Core metadata element set • List of common ISO standards and thesaurii • PCCP Climate Change Topics controlled vocabulary	Disciplinary metadata (Digital Curation Centre) http://www.dcc.ac.uk/resources/metadata-standards Vocabularies: Dictionaries, Ontologies, and More https://marinemetadata.org/guides/vocabs Dublin Core (Wikipedia) https://en.wikipedia.org/wiki/Dublin_Core
Securely storing information	Controlling access to information Information backup	Store master copies on your organisation’s network drive, on centralised government-approved storage, or on cloud storage services that have been assessed and approved by your organisation. Do not use portable storage media or a non-approved cloud service like Dropbox for master copies.	IKM4CC Guideline 2: Preparing for Successful IKM, includes: • Overview of strategies and systems for storing	Data Security (UK Data Archive) http://data-archive.ac.uk/create-manage/storage/security Data Backup (UK Data Archive) http://data-archive.ac.uk/create-manage/storage/back-up

		Make regular backups of information to protect against accidental or malicious loss. Always hold at least two copies of information, a working copy and a back-up copy, preferably off site. Use different forms of storage and backup, e.g. network drive and portable hard drive. Be aware that CDs and DVDs are easily damaged by high humidity and changes in temperature.	and organising information	Tips for Managing Shared Folders (PARBICA Guideline 14, Appendix A) http://www.parbica.org/sharing/publications/recordkeeping-for-good-governance/index.aspx
Sharing information	Deciding on suitable accessibility for information Complying with Privacy policies, protecting individuals' identities Ethical and cultural considerations Complying with Copyright laws Using Creative Commons licensing to maximise reuse of information	Share information to the maximum extent possible, through an organisational website or repository (e.g. a government portal) and/or a discipline-specific repository (e.g. Pacific Climate Change Portal, Pacific Disaster Net). Avoid using project websites for long-term storage as they are often not maintained once the project is finished. Consider legal, ethical and cultural issues before sharing information. You will need to limit access to personal information, confidential data (e.g. national defence, endangered species, trade secrets) or culturally sensitive information (e.g. traditional knowledge). Comply with any copyright and licensing restrictions before you share information created by a third party. For example, uploading another organisation's document to a public website without the copyright owner's permission may be a breach of copyright. Information sharing options include full open access, restricted access, and metadata-only access. For restricted information, you can share basic details about the information resource without making the full resource openly accessible. You can tell people what they need to do to access the full resource (e.g. apply for a password, negotiate access with data owners). Where appropriate, license your organisation's information outputs with Creative Commons licences, so others can more fully reuse or repurpose them, while still giving your organisation credit.	IKM4CC Guideline 5: Copyright, Legal and Ethical Issues, includes: • Privacy, confidentiality and consent • Cultural sensitivities & traditional knowledge • Environmental sensitivities • Levels of access to sensitive information • Copyright restrictions • Open licensing and Creative Commons • Website Terms of Use and Disclaimers	Publishing and Sharing Sensitive Data (ANDS) http://ands.org.au/guides/sensitive-data Pacific Regional Framework for the Protection of Traditional Knowledge and Expressions of Culture (SPC, PIFS, UNESCO) http://www.wipo.int/wipolex/en/text.jsp?file_id=184651 AusGOAL Open Access and Licensing Framework http://www.ausgoal.gov.au/ Creative Commons Licences http://creativecommons.org.au/learn/licences/

Reusing information	Complying with copyright laws Seeking permission to reuse information Correctly attributing authors	When using information created by other people or organisations, remember that copyright laws may limit the reuse of original works. Check the terms and conditions of reuse when using copyrighted information, and if necessary seek written permission to reuse. Always attribute (reference or cite) the original author or creator of information you reuse.	Guideline 5: Copyright, Legal and Ethical Issues	Best Practices for Attribution (Creative Commons) https://wiki.creativecommons.org/wiki/Best_practices_for_attribution
Disposal Overview: archiving or destroying information	‘Disposal’ of records ‘Disposal’ schedules Legal requirements	When information reaches the end of its active life, it can be retained permanently as an archive or destroyed. Both of these options are different types of ‘disposal’. Check if your organisation has a disposal schedule that tells you what should happen to information at the end of its active life. If not, consider creating a disposal schedule as part of your organisation’s IM guidelines or policies. Make sure it conforms to any legislative requirements to retain or archive corporate or government information. Check with your National Archives for further information about disposal of government records.		Data Disposal (PARBICA Guidelines 7, 8, 9, 10): http://www.parbica.org/sharing/publications/recordkeeping-for-good-governance/index.aspx
Disposal A: Long-term preservation or archiving	Planning for technological obsolescence Avoiding proprietary file formats Managing storage media Scanning of paper records	Preservation of digital objects needs to be more proactive than paper preservation. One of the key challenges of preserving digital information is dealing with the fact that computer-based technology (hardware and software) goes out of date. Digital information may have to be migrated to new systems and software over time. Where possible, avoid archiving information in digital formats that require access to proprietary technologies (e.g. commercial software). Migrate information to open standards to reduce technological dependencies (e.g. formats like CSV, PDF/A, ESRI shapefile, TIFF). If storing information in proprietary formats, bring records forward as new versions of software are released. Perform regular backups for disaster recovery purposes.		Digital Preservation (PARBICA Guideline 18) http://www.parbica.org/sharing/publications/recordkeeping-for-good-governance/guideline-18.aspx File Formats (Australian National Data Service) http://ands.org.au/guides/file-formats File Formats (UK Data Archive) http://data-archive.ac.uk/create-manage/format/formats

		Carry out routine checks of long-term storage media. Regularly replace media to limit the risk of damage or loss of records (every 2-5 years). Keep storage media in stable, controlled, low-risk, secure environments. Consider creating digital versions (scanning/digitising) of paper-based information, according to standards and specifications. Check with your National Archives for further information about long-term preservation of government records.		Digitisation (PARBICA) http://www.parbica.org/sharing/resources/digitisation/index.aspx
Disposal B: Destruction	Destruction process for sensitive or confidential information Data erasure Physical destruction of digital media	Be aware that deleting files or reformatting hard drives does not truly erase data files. For complete deletion, files must be overwritten using special data erasing software. Both free and commercial data erasing software utilities are available to securely erase files from hard disks. Data erasure may not work completely on solid state drives or flash based media such as USB sticks. The most reliable way to dispose of data is physical destruction. Shredders can be used to destroy paper and CD/DVD disks. Hard disks can be physically destroyed or degaussed (a demagnetising process). Check with your IT department or National Archives for further information on destroying sensitive or confidential information.		Data Disposal (UK Data Archive) http://data-archive.ac.uk/create-manage/storage/data-disposal Compliant destruction of Australian Government Records http://naa.gov.au/records-management/agency/keep-destroy-transfer/destroying-records/index.aspx