

Collaborative Disaster Recovery Planning through a Consistent, Complete, Controlled Vocabulary

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Two Key Learnings from Conference 2015...

- **Comprehensive Disaster Management:** Includes attention to all phases of the Disaster Management Cycle – *prevention, mitigation, preparedness and response, recovery and rehabilitation*. It includes emphasis on **reducing risk**.
- **Knowledge Management and Learning** is a key strategic pillar in the Comprehensive Disaster Management Portfolio

Introduction

- Many Caribbean countries are susceptible to natural disasters which have the potential to inflict extensive damage on a country's society and infrastructure.
 - The longer it takes to return to normalcy, the greater will be the effect on what might already be a fragile economy.
- Comprehensive DRP requires significant resources, the coordination and collaboration of a number of stakeholders and the access to a number of disparate data sources.
- The cost of DRP planning and implementation makes it infeasible for some countries to undertake individually.
- Beneficial to collaborate and share data and knowledge resources not only for cost effectiveness but also to improve quality.

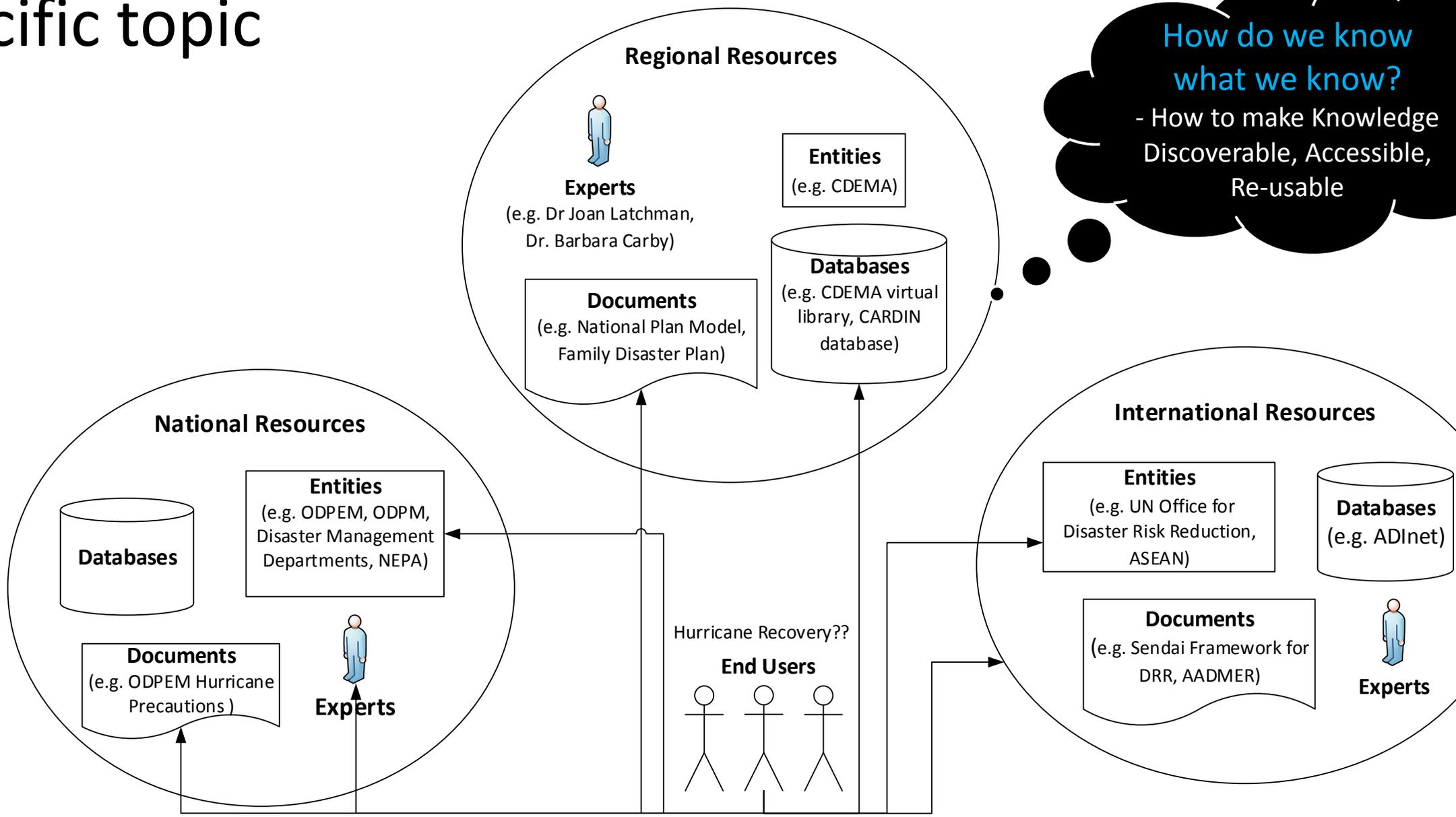
Introduction

Premise: For collaboration to be effective a *common vocabulary* is essential.

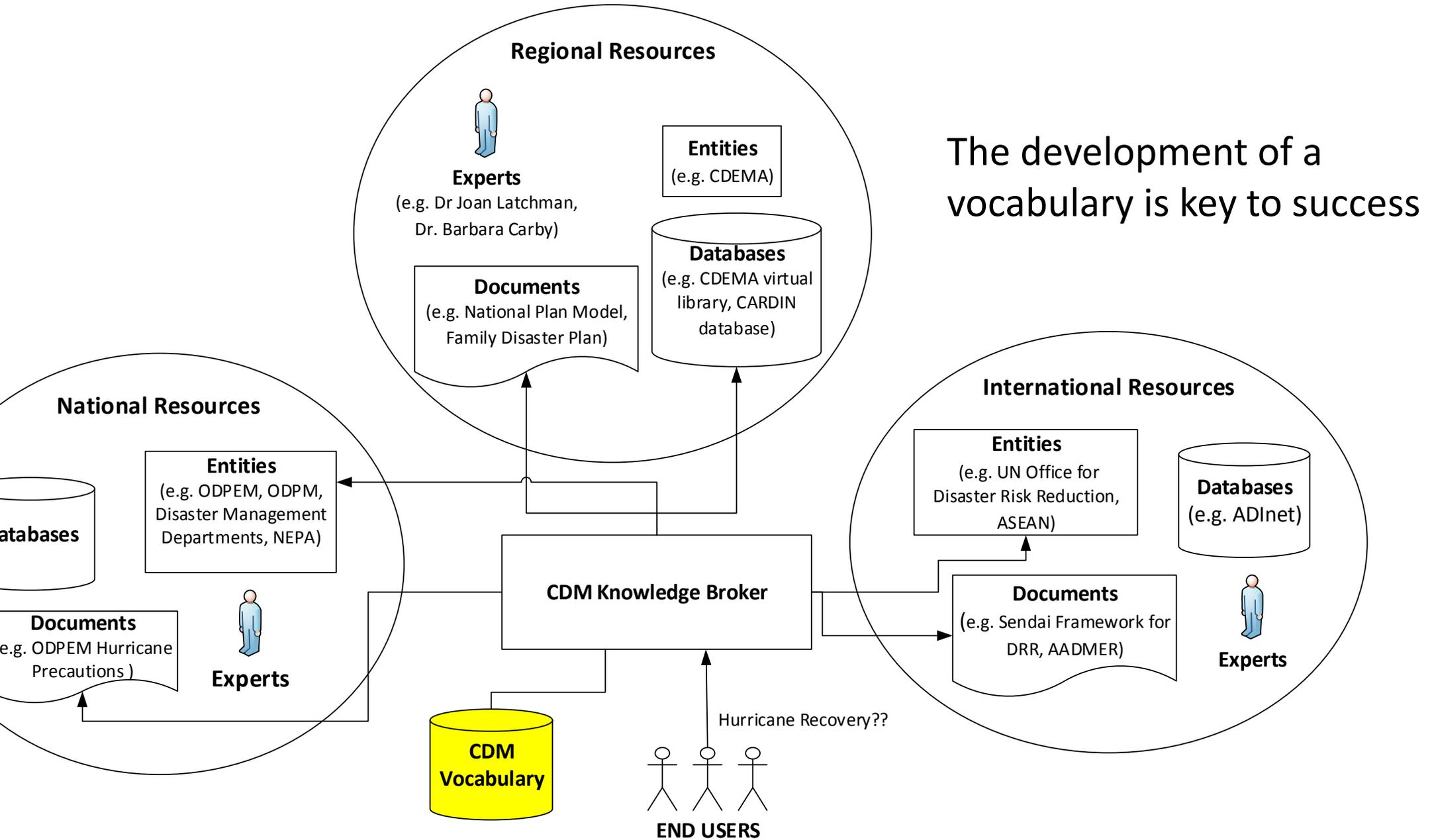
Research Goals

- Demonstrate that implementing this common vocabulary as an online, interactive shared resource can lead to the cost-effective development of consistent, complete and comprehensive plans.
- Emphasize the benefits / *imperative* of a collaborative and shared approach to designing this vocabulary in a Caribbean context.
- Demonstrate how the functional utility of the online interactive vocabulary with several use-cases and applications.

Problem: Finding knowledge resources related to a specific topic



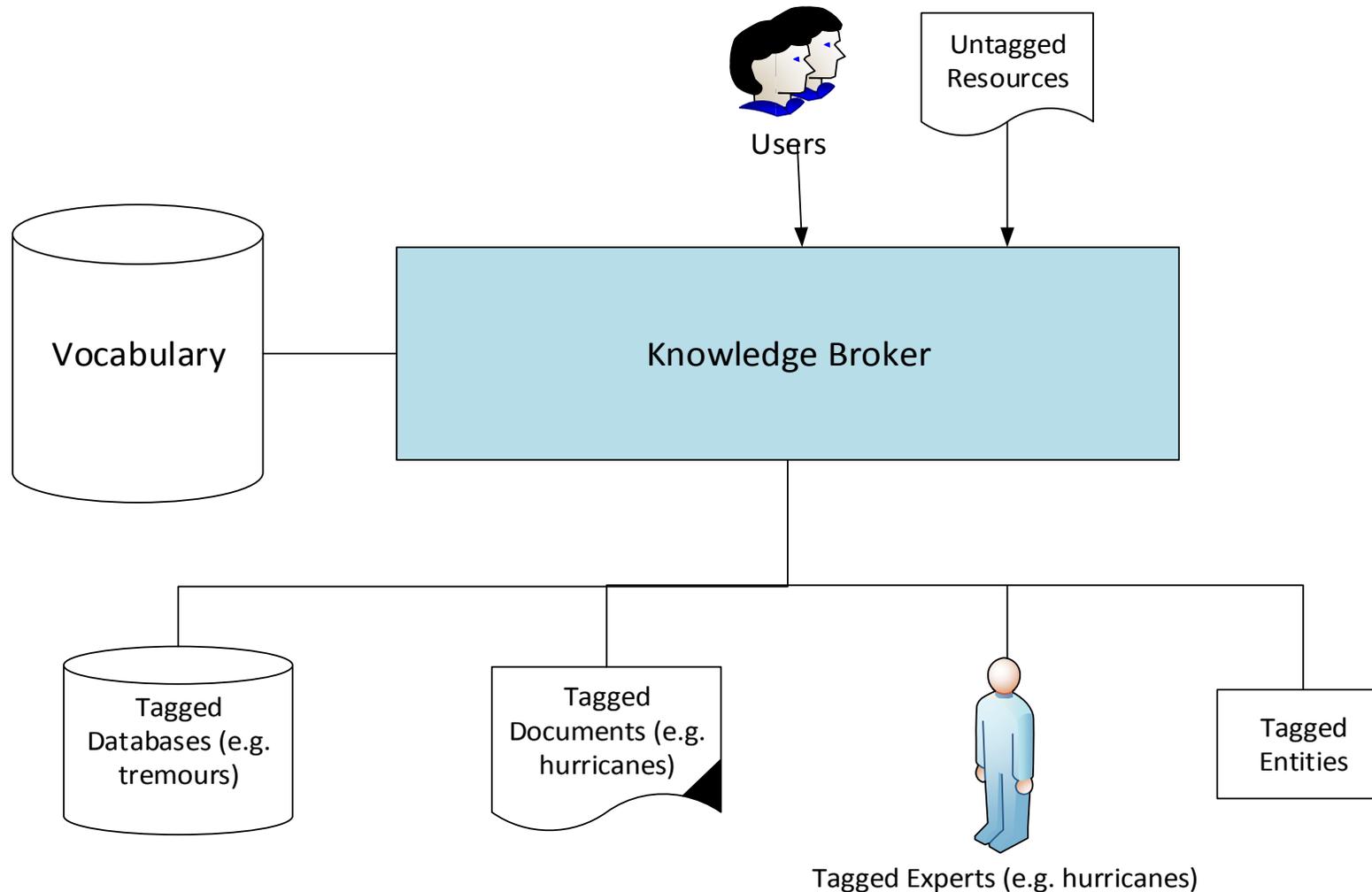
Approach: Development of a Knowledge Broker



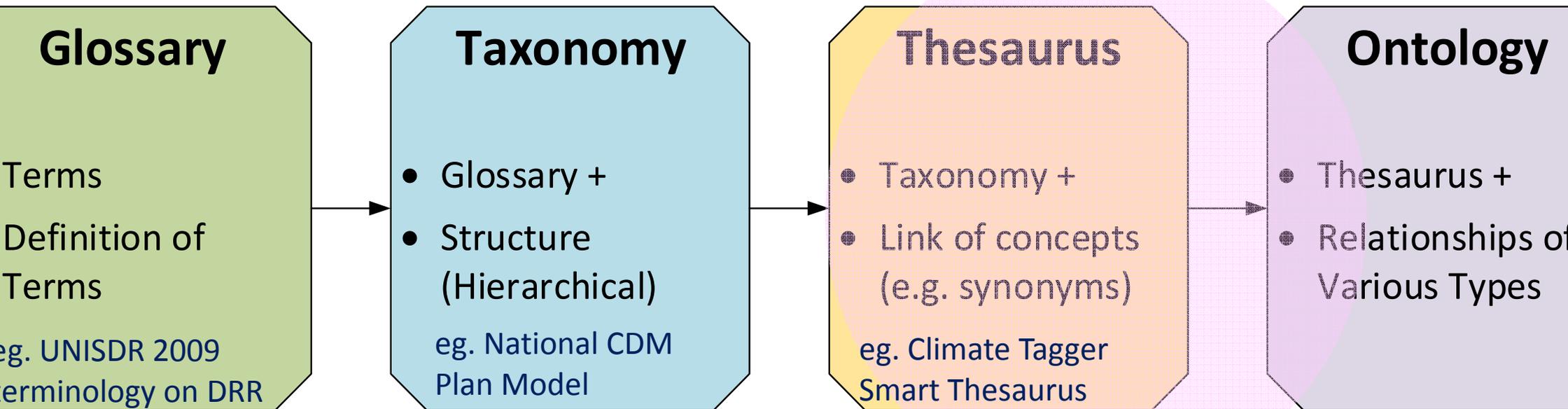
Proposed Solution: Knowledge Broker

Example Questions:

- 1) What does Comprehensive Disaster Management Mean?
- 2) Where can I find knowledge resources on Hurricanes?
- 3) What is this document I have about?
- 4) Does my disaster recovery plan conform to the DRP template?

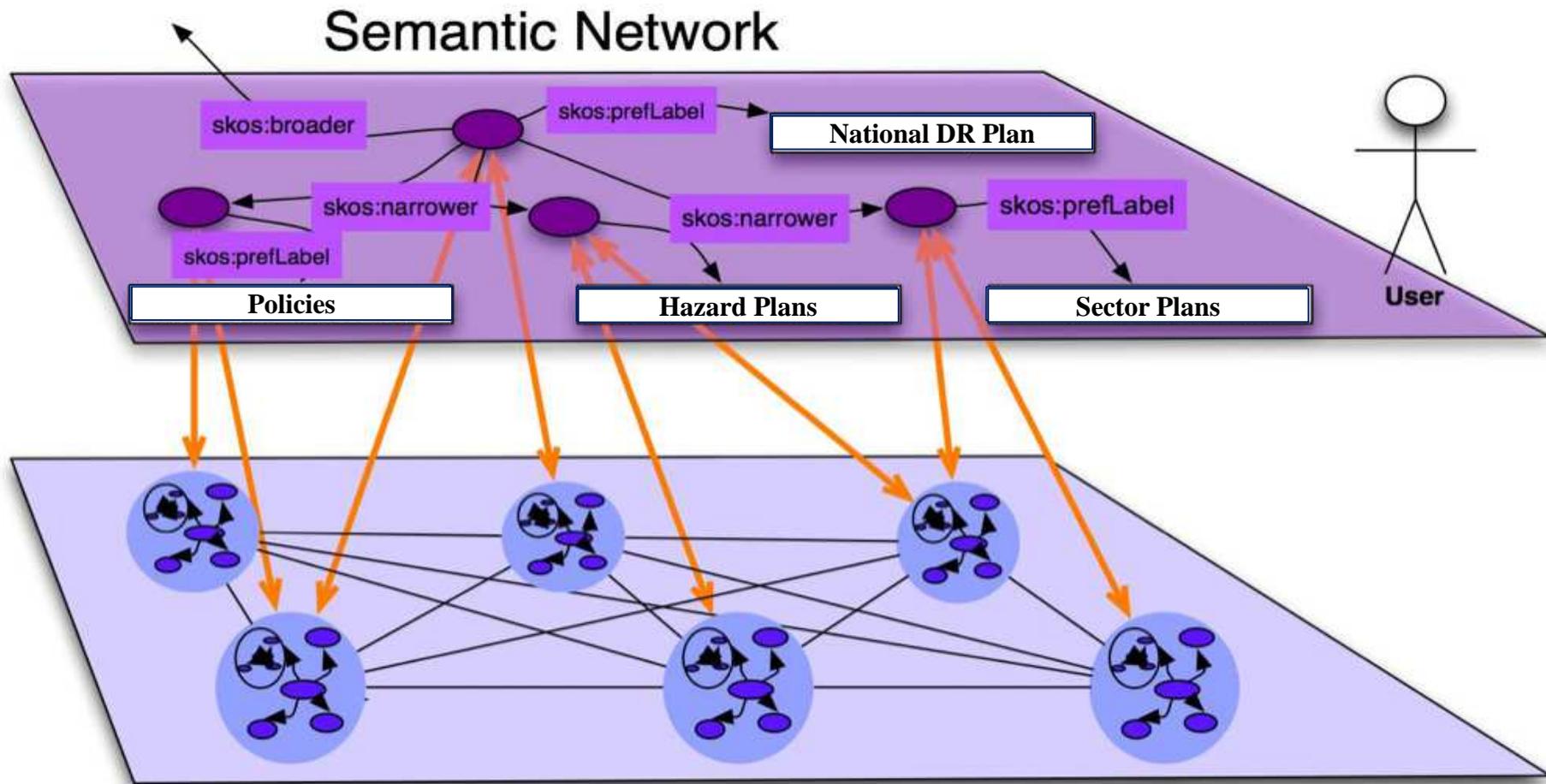


Knowledge Organization Systems (Controlled Vocabulary)



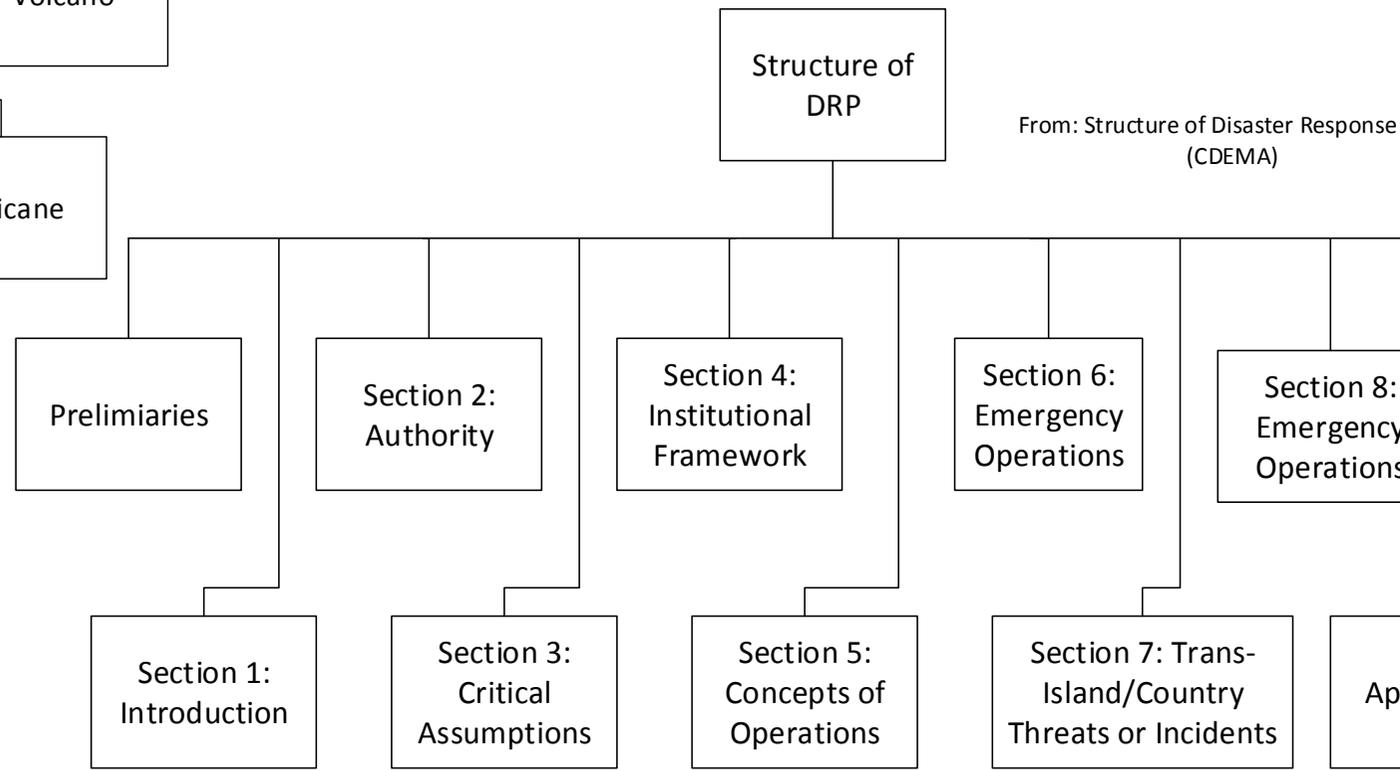
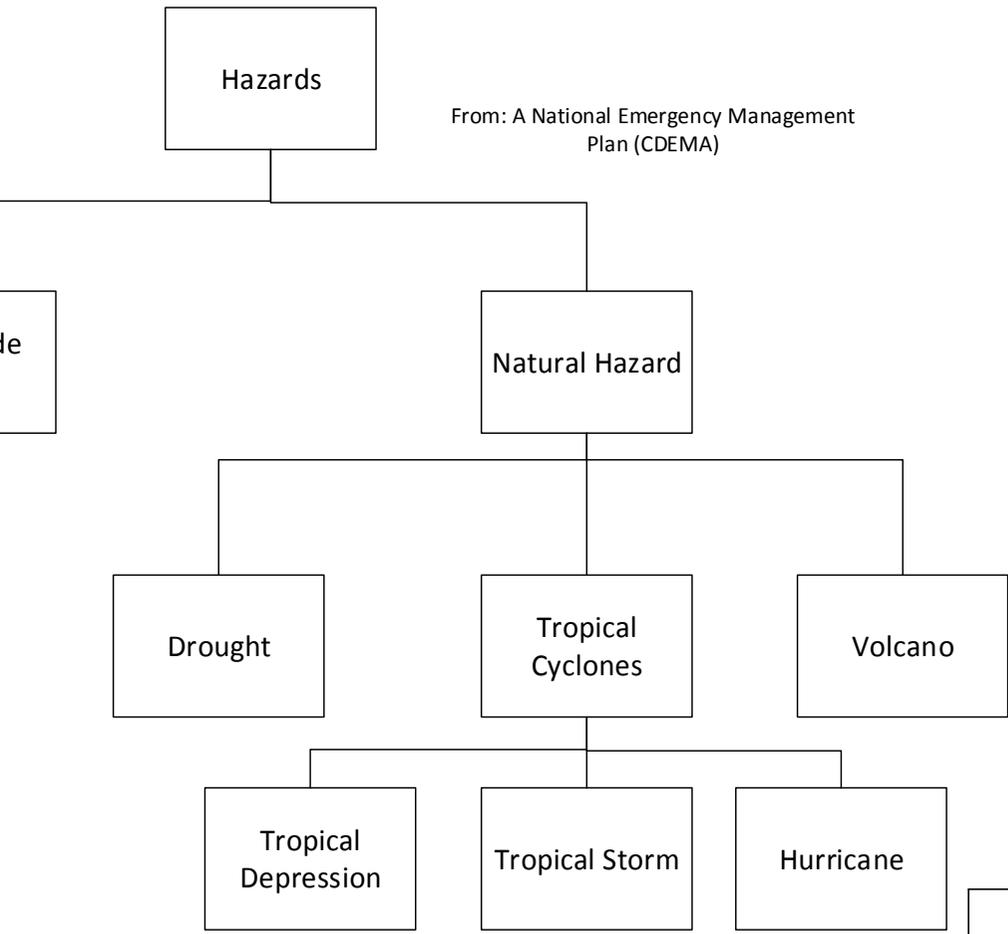
- Define Concepts, hierarchy (broader/narrower), complex relationships
- Based on Linked Open Data Standards (RDF/XML, SKOS, SPARQL, etc.)
- Kind of MetaData /MetaKnowledge about knowledge artifacts
- Online, Interactive and Referencible (*Vocabulary as a Service*)

Controlled Vocabulary as a Semantic Layer



Knowledge Artifacts: Documents, Databases, Websites, Entities

Example Vocabulary



Benefits/Utility of Knowledge Broker:
Online Interactive Repository and Vocabulary

Case 1: Centralized Access to Repository

- **Questions:**

- How are the DRP documents being produced by various stakeholders stored and retrieved for purposes of sharing?
- Is it easy to find resources when needed, whether documents, data, institutions or people?
- Are national, regional and international resources being shared efficiently?

- **Solution:**

- Ensure that users have one point of call for finding these resources

- **Role of Vocabulary:**

- Disparate resources may use different terms and concepts and therefore the vocabulary will provide the resource for linking these

Case 2: Searchable Document Repository

- **Questions:**

- How are you currently organizing, categorizing and searching for the vast valuable store of electronic documents being created?
- As the number of electronic documents grow how are the stakeholders going to find and access them effectively?
- Is the wealth of documents you have easy to find?

- **Solution:**

- Classify the documents based on a common set of concepts (tags) in the domain
- Use tags to categorize these documents
 - If everyone is allowed to use their own vocabulary to describe documents, you will likely end up with a inconsistent set of terms.
- Documents can be tagged instantly.

- **Role of Vocabulary:**

- Provides a consistent set of words that will be used to describe documents.
- Can place documents in useful clusters, make them all accessible to others and increase the impact of your work.

Case 3: Expert Finder

- **Questions:**

- How do you currently find expertise (e.g. persons, institutions, documents) in a specific area?

- **Solution:**

- Tag not only the documents related to the area but also other resources (e.g. institutions and people)
- When looking for expertise then the system will find all resources related to the area of interest

- **Role of Vocabulary:**

- Provides a consistent set of words that will be used to tag resources

Case 4: Flexible Searchable Mechanism

- **Questions:**

- Can you easily find the meaning of the terms being used in the domain?
- Do you understand the structure of the domain?
- Do different stakeholders use different terms to refer to the same things?

- **Solution:**

- Provide a searchable repository for the definitions in the domain (i.e. glossary).
- The repository is created in such a way that it supports synonymous terms being used to find documents.

- **Role of Vocabulary:**

- In creating the vocabulary the definitions and alternate terms will be defined.
- Synonym search supported through the vocabulary.

Case 5: Classifying New Documents

- Questions:

- If a new document is to be added to the repository how will it be classified?

- Solution:

- Automated tagging of new documents should be supported

- Role of Vocabulary:

- The document is matched against the vocabulary and based on matches tagging is automated.

Case 6: Provide an Interactive Visualization of the Vocabulary

- Questions:
 - Is it easy to understand the domain and the structure of the domain?
- Solution:
 - Develop a visualization of the vocabulary that is interactive.
 - Users can interact with this vocabulary (e.g. traverse)
- Role of Vocabulary:
 - The defined vocabulary will be used for the visualization tool

Case 7: Check the Completeness of a Document

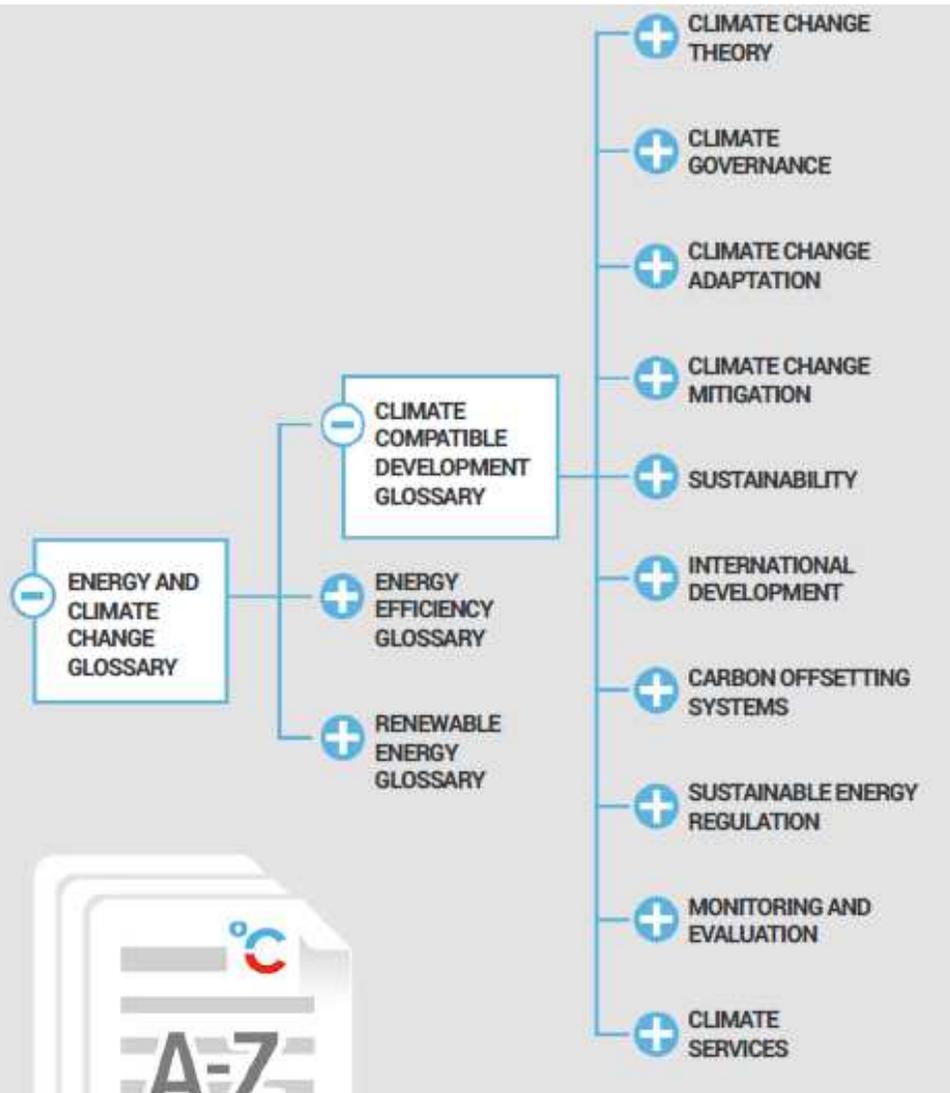
- Questions:
 - Does a given document conform to the template of the document types (e.g. DRP plan template)?
- Solution:
 - Match an existing document against a defined structure to ensure complete
- Role of Vocabulary:
 - The vocabulary will be used to define the structure of a document.

Linkages with the EKACDM Initiative

- **Outcome 1.2: Improved knowledge management and dissemination in CDM >**
1.2.1 Caribbean Disaster Portal established.
 - The Vocabulary can become a knowledge component and a semantic layer for the Caribbean Disaster Portal
- **Outcome 3.2: Increased availability of tools for gender-sensitive CDM into two key economic sectors, SMEs, and other components of the private sector >**
3.2.1 Manuals, modules and online courses for mainstreaming gender-sensitive CDM into key regional economic sectors, business practice for SMEs, and other components of the private sector developed and produced.
 - The design of the Vocabulary will allow for the embedding of key CDM elements such as SMEs and Gender
 - Will become part of the formal quality and completeness criteria of the DRPs by the automated evaluation tool.

Eg. Climate Tagger Smart Thesaurus

<http://www.climatetagger.net/skos-play/>



- The Climate Smart Thesaurus is a vast catalogue of specialized terminology, including mapped links to synonyms and related terms, in five languages and across a range of sectors relevant for climate compatible development
- Extensive Network of Partners
 - US National Renewable Energy Laboratory (NREL) – OpenEI (en.openei.org)
 - Stockholm Environment Institute (SEI) – (www.weADAPT.org)
 - Institute for Development Studies (IDS) – Eldis (www.eldis.org)
 - Climate Knowledge Brokers Group (CKB) – (www.climateknowledgebrokers.net)

Climate Tagger Use-Cases

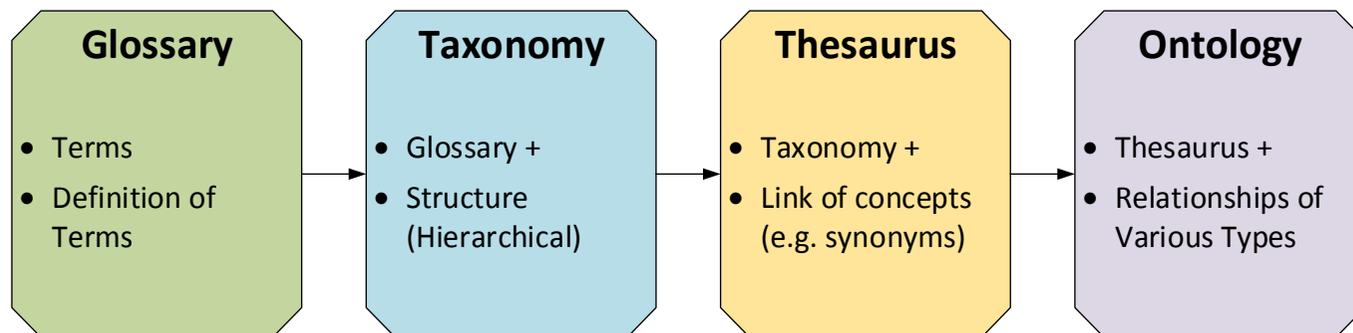
	Organise a previously unsearchable document database
	Cross-link your own resources
	Cross-link your resources with external documents (API functionality)
	Offers definitions, synonyms and links
	Increase your reach by publishing on the Climate Tagger Content Pool (API functionality)
	Multiple language tagging

The Vocabulary / Thesaurus is the key to the Kingdom!



Essential Process for Developing CDM Vocabulary

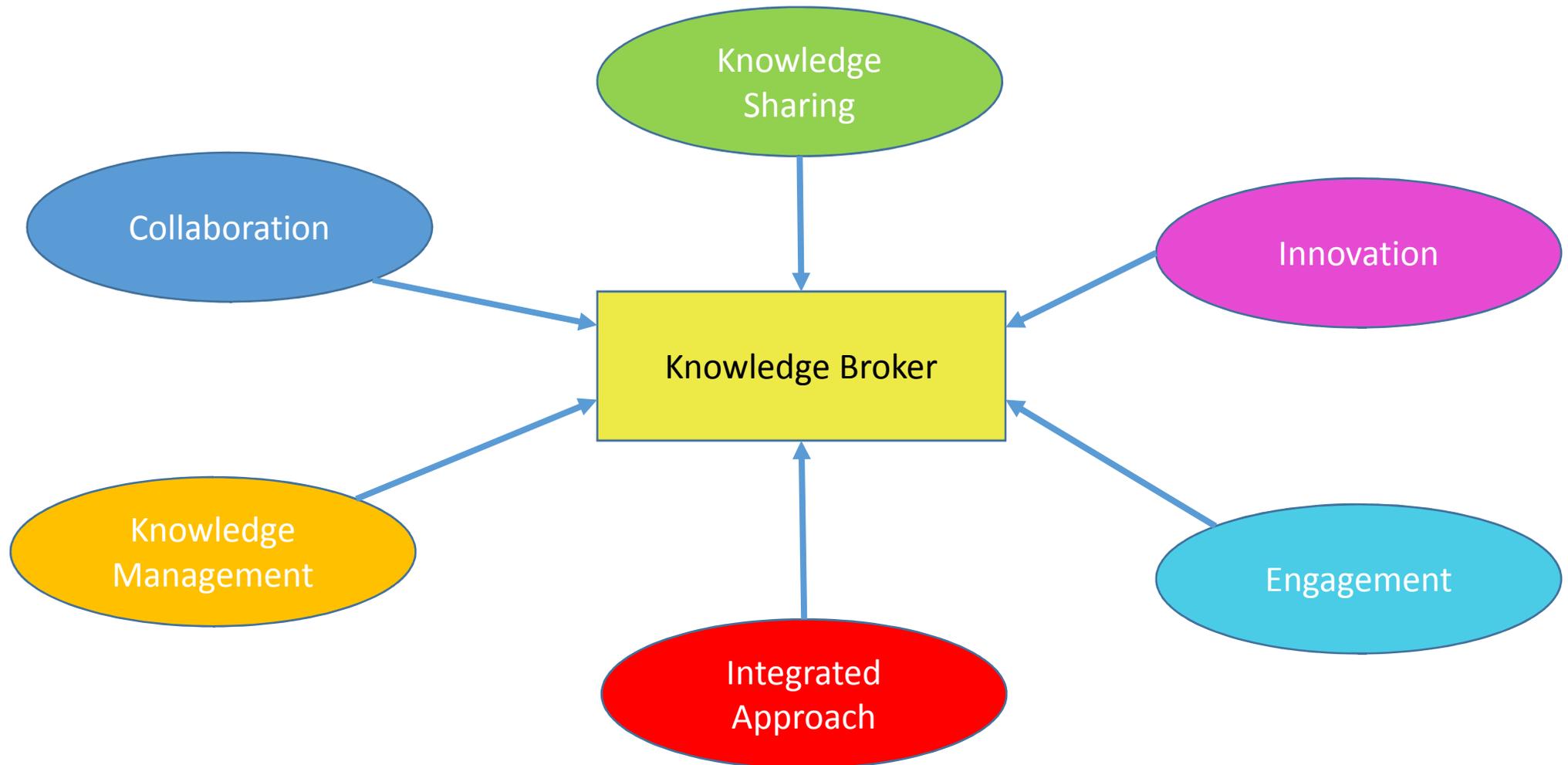
- Iterative and Progressive
- Active engagement, involvement and ownership by the CDM community
- Recognize and reference international standards but address local and regional context
- Based on emerging linked open data standards
 - To allow for integration with other online semantic references e.g. climate tagger



Conclusion

- Effective Knowledge Management in CDM will be enhanced by the implementation of a controlled vocabulary as a public good
- To maximize the benefits of the vocabulary must ensure it is comprehensive, complete, consistent and context-relevant
 - Must meet Caribbean CDM stakeholder needs.
 - This is why we need your input throughout the development process.
- A CDM Vocabulary not only provides a basis for more effective knowledge management but can become an enabler of engagement and innovation

What the Knowledge Broker provides for CDM



Next Steps ...

