

Workshop on “Meta-Guidelines” for Climate Change Adaptation

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# Developing Capacity and Resilience

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# Some questions to be answered

- How to foster end-to-end collaboration?
  - including DRM and DRR
- How to build ownership and leadership?
- How to sustain measurement and analysis?
- How to leverage resources for capacity development?
  - including pooling/sharing international resources, less duplication can cover wider subjects



# Messages

- Too many issues and challenges not only within CCA but IWRM
  - And too much information available and will be available
- Leveraging and networking
  - Can improve understanding and awareness
  - Synergize resources – experts, skill workers, finance, etc
  - But will result in more information
- We need to look at possible alternatives/pathways to handle these massive information in a coherent manner, effectively

# Need for Capacity Building

- UN Water - on capacity building in Water Resource Management
- “Innovation and research are critical for developing appropriate solutions. And greater institutional capacity and human capacity are needed, both within the water domain and in areas or sectors outside the water domain. Capacity development can occur through traditional forms of education, on the job training, e-learning, public awareness raising, knowledge management and professional networks.”

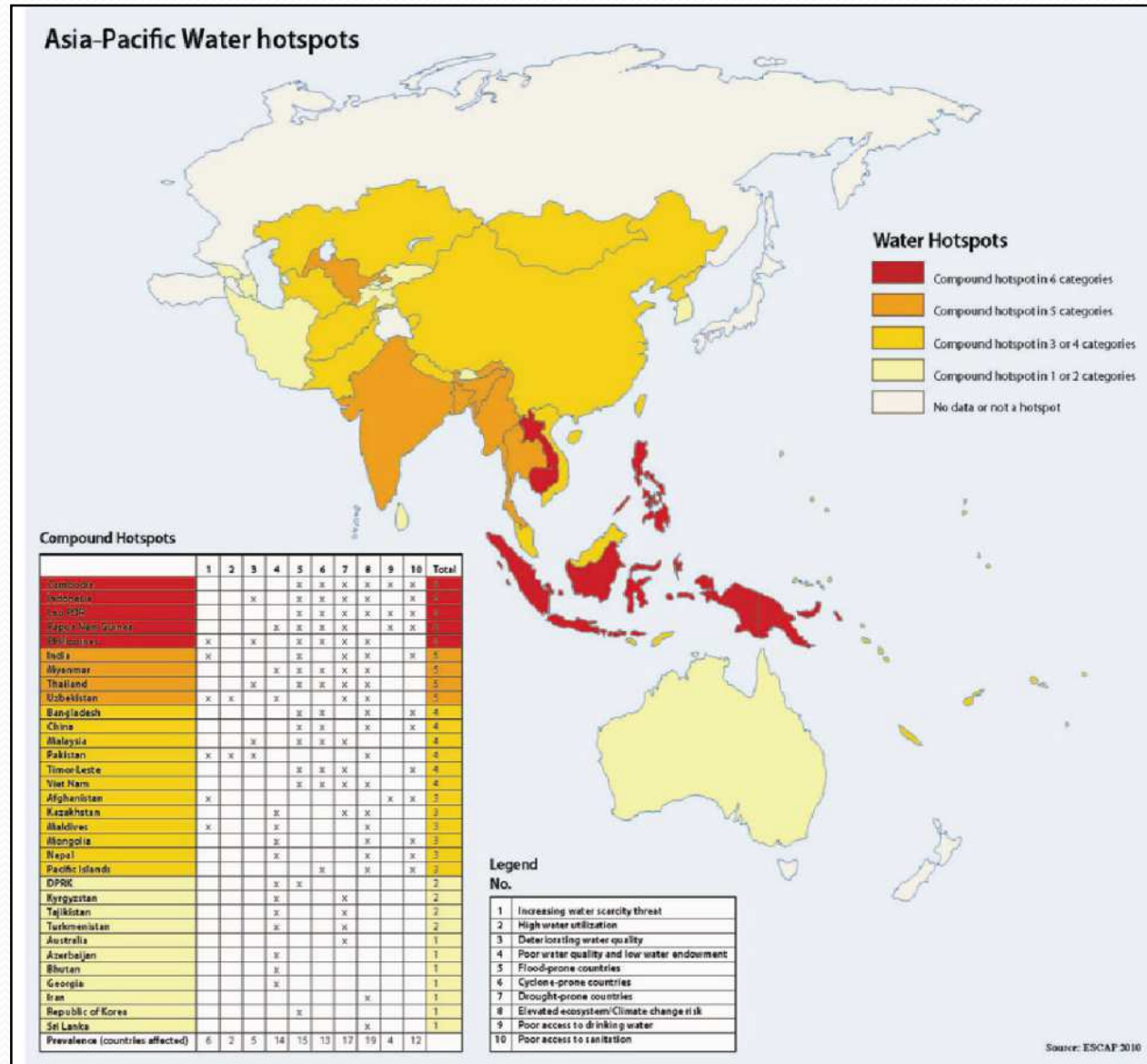




## ESCAP develop AP Hot spots – base on 10 Challenges from existing publications, 2009-10

- Increasing Water Scarcity threat
- High water utilization
- Deteriorating water quality
- Poor Water quality and low endowment
- Flood Prone countries
- Cyclone prone countries
- Drought prone countries
- Elevated ecosystem/climate change risks
- Poor access to drinking water
- Poor access to sanitation

# Water Hot-spots



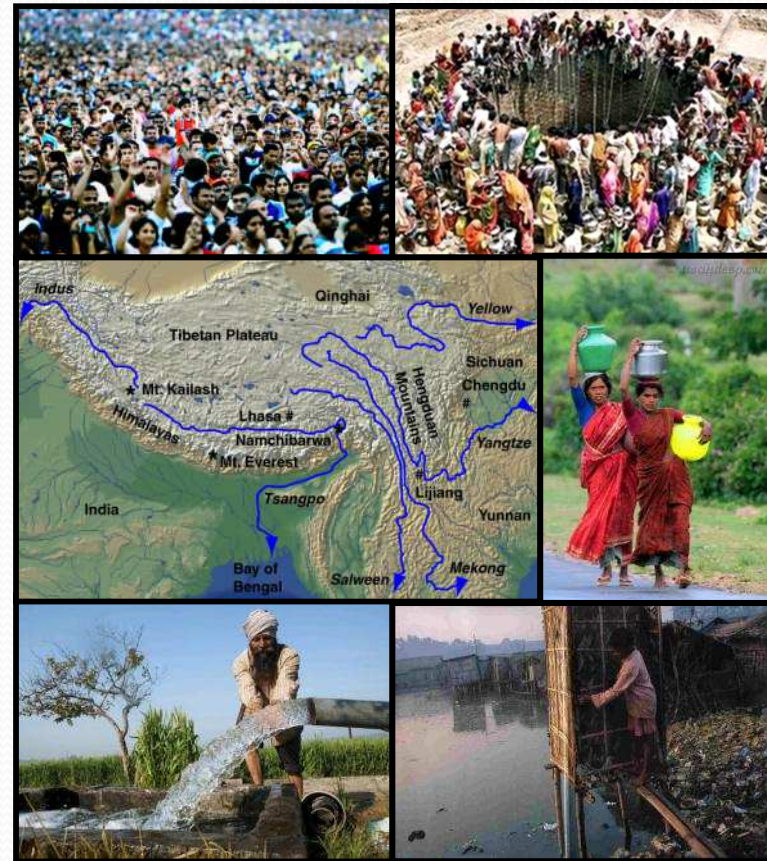
(Source: UNESCAP, 2011)



# AP Regional Challenges, 2011

*ESCAP preparation for 2APWS, 2013?*

- Population growth
- Urbanization
- Groundwater Depletion, Impact on Agriculture
- Pollution of Water sources
- Inadequate sanitation
- Poor water quality – public health concerns
- Water related disasters
- Water-Food-Energy nexus
- Water disputes





# Challenges in Capacity Gaps in CCA

*Case study – ASM Malaysia*

- **Challenges**
  - **Governance and Institutional Capacity**
  - **Climate Change Projections and R&D Capacity**
  - **Information Management Capacity**
  - **Stakeholders Awareness and Participation**
  - **Technical Management Capacity**

*From: Lee Jin and Lavanya Iyer , 2011, Academy Science s of Malaysia  
Study on the Status of Climate Change Impact on Water Related Issues  
- For ASM Task Force on Climate Change and Water Resources*

# Challenges in Technical Management Capacity

*Case study – ASM Malaysia*

- ***Water Bodies Management Capacities***
  - Rivers
  - Lakes
  - Aquifers
  - Coastal Areas
- ***Water Use Management Capacities***
  - Potable Water Supply
  - Agriculture & Irrigation Water Supply
  - Hydropower
  - Navigation
  - Fisheries
  - Water Ecosystems
  - Competing uses
- ***Water Management Capacity***
  - Floods
  - Water Pollution
  - Water Scarcity/Droughts
  - Human Health



# A “Wicked Problem”?

- Too much information?
- Multiple and competing users?
- Too complex?
- Opaque? – politics, private, communities
- etc

# H.G. Wells, The Brain: Organization of the Modern World , 1940

- "An immense and ever-increasing wealth of knowledge is scattered about the world today;
  - knowledge that would probably suffice to solve all the mighty difficulties of our age, but it is dispersed and unorganised.
  - We need a sort of mental clearing house: a depot where knowledge and ideas are received, sorted, summarized, digested, clarified and compared."



## Water in Climate changed – a Wicked problem?

- ❑ Wicked problem - is *ill-defined* and connected to other intractable problems. Common characteristics are problems that are *dynamic* (changing), *systemic* (interconnected) and *generative* (emergent issues and new dimensions).
- ❑ Therefore, there can be no final, optimal one-off solution to it and *solutions are not truly good or bad* but “*best that can be done*” on a continuing basis as new dimensions and inter-relationships emerge.
- ❑ Because of *inherent differences* in governance, cultural, motivation and attitudes among stakeholders surrounding the problem, *resolution will require a new approach*

## Wicked problems (Cont'd)

- The persistent *challenges caused by current practices and approaches* thus constitute a complex problem with *economic-social-environmental issues* that had been termed “wicked problems” (*Rittel and Webber 1973*).
- *Scientific solutions alone* are *unlikely to succeed* in solving such “wicked problems” because of the nature of the problem as much as the *economic, societal and policy complexity* in which it has to be resolved.
- *Scientific solutions* can be developed for “tame” *well defined problems* that can be solved in isolation, can be broken down into parts which can be solved independently by different groups of people. *Solutions* to different parts of a *larger problem* can then *be integrated into an overall solution*. The same does not hold true for “wicked” *policy problems*.

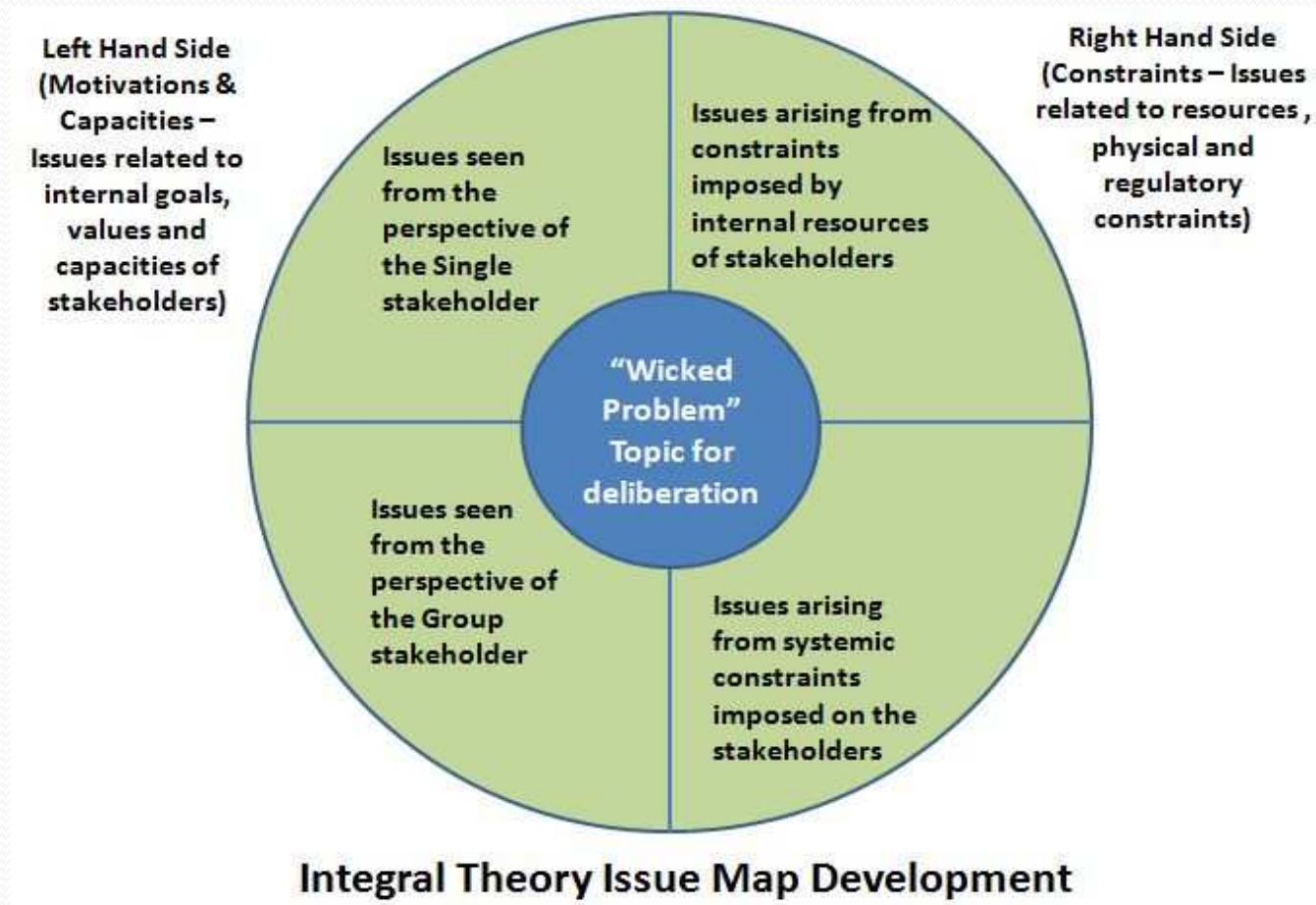


If all you have is a hammer, then everything looks like a nail!



Stakeholders have different perspectives of the best solution to the problem & will continue to adhere strongly to them,

# Wicked Problem -Integral theory perspectives



*From Lee Jin*



## Handling Wicked Problems

- ❑ One such approach is *Kunz and Rittel's(1970) "Issues Based Information System (IBIS)"* which is an *argumentation-based approach* designed *'to support coordination and planning of policy/political decision processes. IBIS is a framework that guides the **identification, structuring, and settling of issues** raised by problem-solving groups, and **provides information** pertinent to the discourse.'*
- ❑ It involves an *information management system* to capture and manage information to make *it easily accessible, usable and exploitable*
- ❑ It also needs to *capture tacit knowledge*, the elusive element in knowledge management systems, for addressing the problem
- ❑ The system should allow *updates of relevant new issues, facts and lessons* learned as part of the learning cycle

## Origin of IBIS:

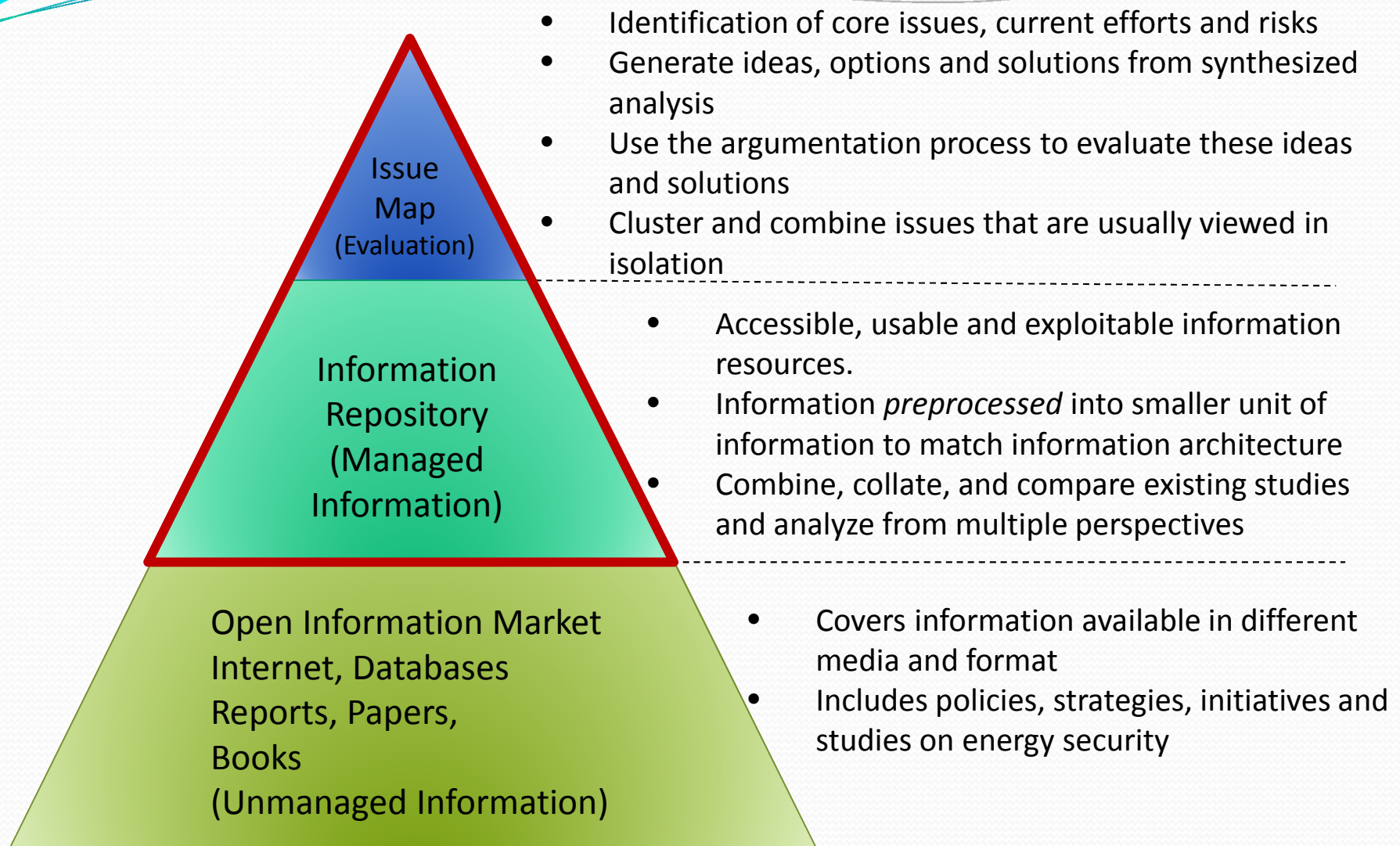
- Introduced by **Horst Rittel**, a Professor in the Science of Design, in the early 70s.
  - IBIS is not an information system but a conceptual framework
- IBIS is designed for the tackling of wicked problems by **developing issue/dialogue maps.**
- The **elements** of the maps can include **issues, facts, positions, questions, ideas, argumentations (pros and cons) and solutions.**



# Key Benefits

1. Wicked problems is *broken down into its elements*, i.e. Issues, Facts, Positions, Questions, Ideas, Solutions and Argumentations.
2. Allow the problems to be *viewed and analyzed from many perspectives* – issues, entry types, subject headings and sources.
3. *All evidence* (facts, positions, etc.) must be *tabled*.
4. *Documentation* of our *thought processes*.
5. Above all, *facilitates comprehensive policy engagement*

# Issues-Based Information System (IBIS)



3-Tier Information Management Structure

*From: KK Aw*



# The Multicentric Information Framework

- LinkedIn and Facebook are dedicated relationship management system for professional and social relationships.
- The “Multicentric Information Framework” is a *generic information relationship management system* that can be used to developed dedicated relationship based applications, in this case – Mct-IBIS
- Mct-IBIS – an implementation of the IBIS methodology using the Multicentric Information Framework developed by Multicentric Technology.
  - Website - <http://www.multicentric.com/wapi/mctweb.dll/getobject?objid=1&mid=MCT>  
Website

# IBIS and MctIBIS

- Horst Rittel described IBIS as containing six sub-systems.
  - Most implementation of IBIS focus only on the Issue Maps, ignoring the other five
- Mct-IBIS provide facilities for
  - Issue, Positions, Ideas and solution banks (Rittel: issue bank)
  - Facts (Rittel: Evidence bank).
  - Subject headings tree (Rittel: topic list).
  - Multiple dialogues (Rittel: Handbook).
  - Web based system with entries, reference materials and web links (Rittel: Documentation system).
  - Issue map as hierarchical tree with description or mind map using FreeMind (Rittel: Issue Map).
  - Focus areas
  - Contributors.
  - FIFO and LIFO listing of entries.

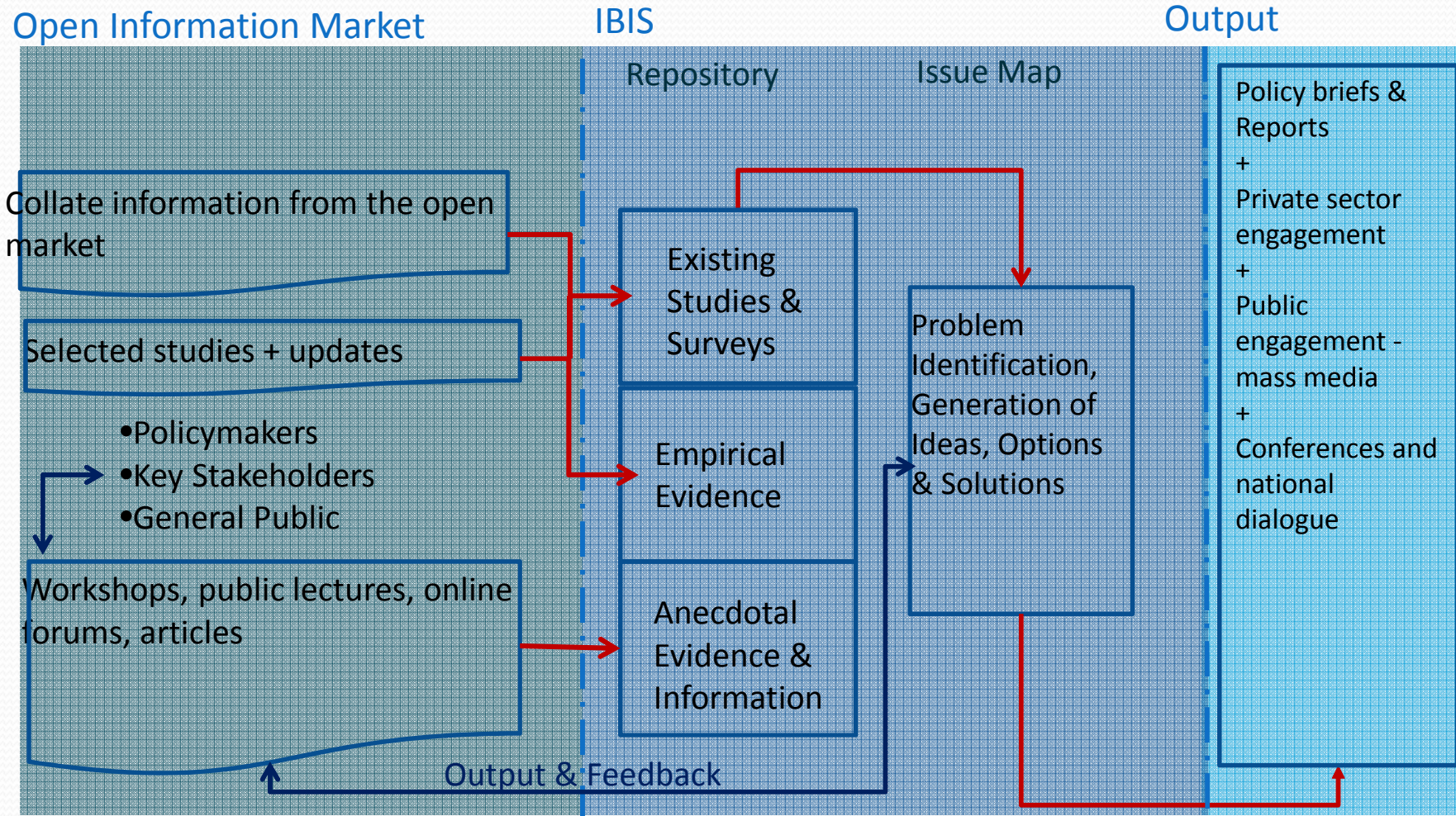


# ASM Case Study recommendations

- Organize to levels of events
  - National Conference –
    - to create awareness among all the stakeholders on the key issues involved in water and climate change
  - 7 thematic workshops
    - Governance and Institutional Capacity
    - Climate Projections and R&D Capacity
    - Information Management Capacity
    - Stakeholder Awareness and Participation
    - Water Bodies Management Capacity
    - Water Use Management Capacity
    - Water Management Capacity
    - Objectives of each thematic workshops
      - To agree on the key issues to be addressed in each theme to adapt to the impacts of climate change on water,
      - To clarify, prioritise and define the strategic action plans and develop their list of activities to address each of the agreed issues.
      - To estimate the indicative costs, where possible, of each of the strategic action plan based on their list of activities.



# Proposed Approach of Mct-IBIS



From: KK Aw



The image features a solid blue background with a gradient that is darker at the bottom and lighter at the top. The top edge is decorated with several overlapping, wavy lines in various shades of blue and cyan, creating a sense of movement and depth. Centered on the right side of the image is the text "Thank you" in a clean, sans-serif font, colored in a light cyan or pale blue that contrasts with the darker blue background.

Thank you