

# Helen Ross

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Assisting communities and government in  
identifying water management risks in a changing  
climate in the Solomon Islands



Australian Government

AusAID

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# IWC members and partners

## Members



## Partners



## Supporters



# Products and services

## **Education and training – Training future water leaders**

- Master of Integrated Water Management
- Tailored education programs to build capacity

## **Applied research – Changing the world**

- Integrated water resources management (social, environmental, economic)
- Water, sanitation and hygiene

## **Consultancy services – Expert advice for Australia and overseas**

- Scientific and strategic policy and planning advice

# Australian Water Research Facility

- Research partnership between Australian Agency for International Development (AusAID) & IWC to conduct research on water and development issues in the Asia Pacific region
  - to:
    - contribute to aid effectiveness
    - increase research being undertaken on water in the Pacific
    - build research partnerships

# Challenges in IWRM and ICM

- Understanding the water/catchment 'system' in interdisciplinary terms
  - biophysical, social, economic, management, and change processes
- Choosing and managing collaborative and participatory processes
- Combining these well for an effective and adaptive process towards resilience and particular outcomes

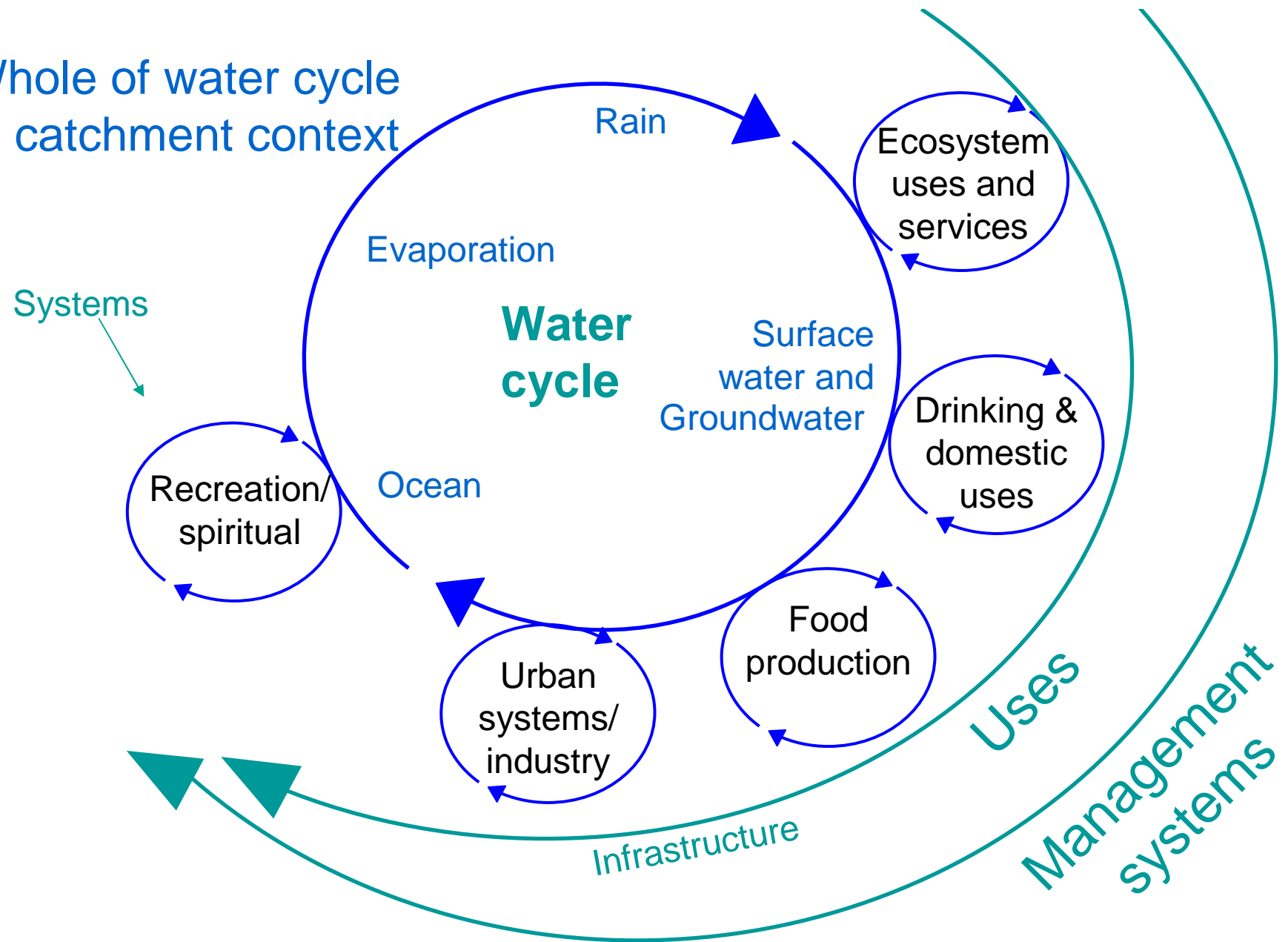
# Understanding a catchment system

- Water cycle in that context
  - including surface and ground water
- ‘Uses’ of water
  - ecosystem, drinking, agriculture, urban, recreation, cultural and spiritual attachments
  - extractive and non-extractive
- Management arrangements
  - formal and customary or informal

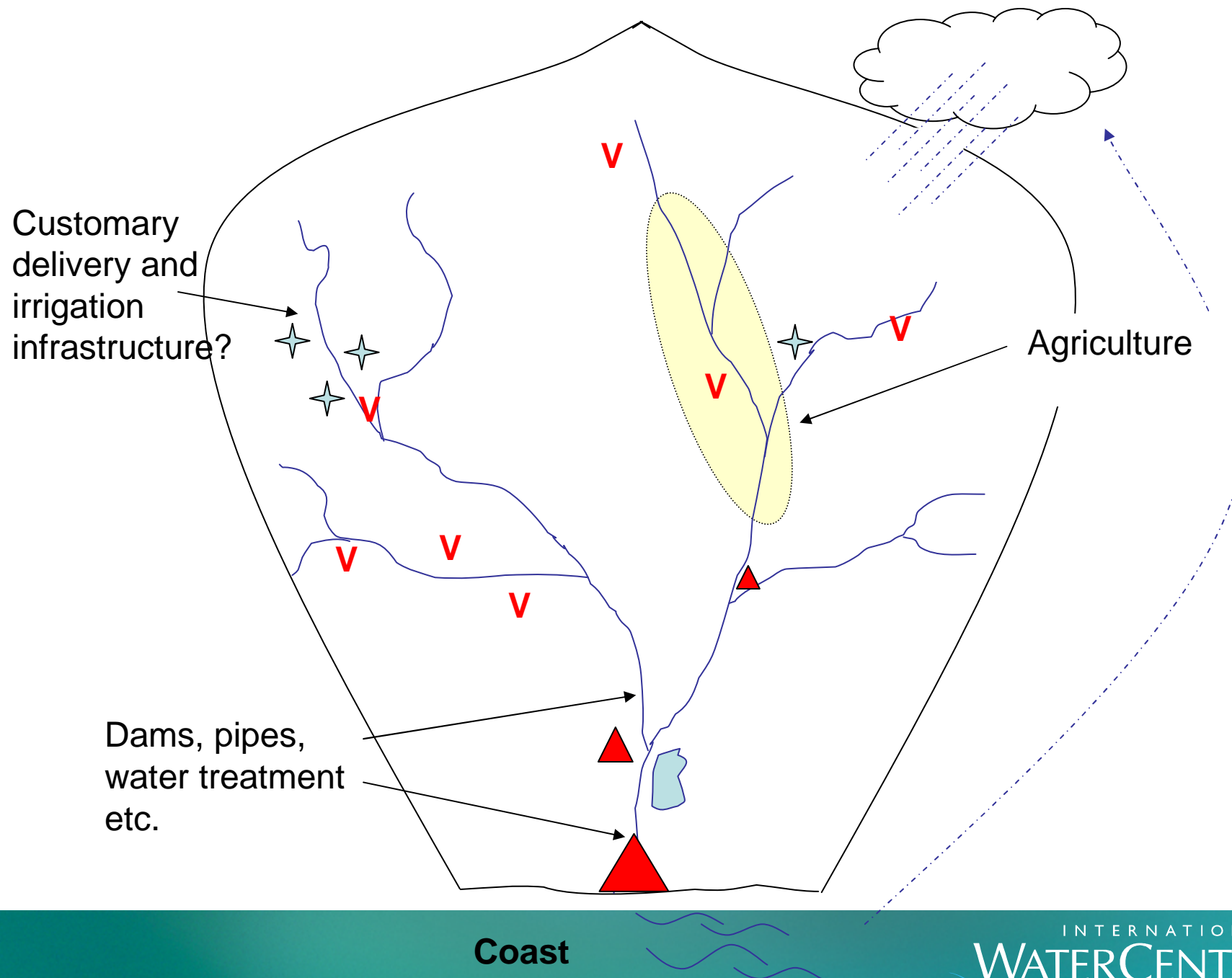
# Our framework

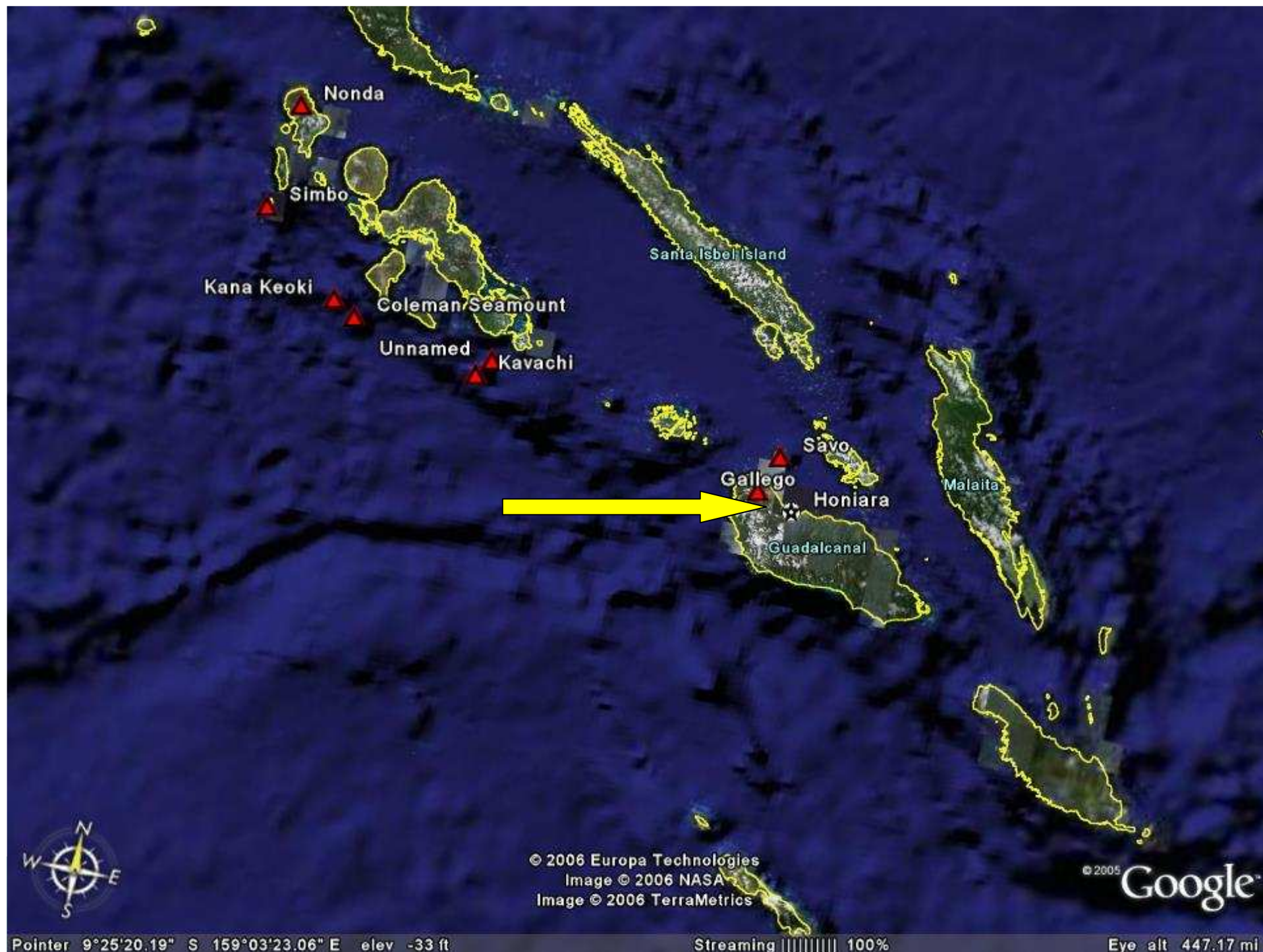
- Underpinning theory
  - environment-behaviour studies/ social-ecological systems, Maslow's hierarchy of needs
- Can be used conceptually or lead to numerical modelling
  - with any systems analysis tool e.g. causal loop, Bayesian Belief Networks
- Designed for any culture, and data-poor contexts
- Supports many outcomes
  - planning, risk assessment, impact assessment...

## Whole of water cycle in catchment context









# Solomon Islands assistance – the problem

## Kongulai catchment

- Honiara's reliance
- poorly understood karst limestone system
- irregularity and unreliability of supply
- contractual arrangements and tensions with customary landholders
  - within government issues
- technology and cost of delivery factors







# The strategy

- Partners in country
  - 3 departments initially
  - partners selected the problem and catchment
- SOPAC/GEF/EU link (co-learning)
- Situation analysis
  - basic information and problem analysis

## Cont.

- Customised participatory process
  - engage all parties, share their knowledge, learn together, build relationships and problem-solving capacity
  - towards purpose (risk assessment)
- Systems analysis
  - conceptual, Bayesian
  - interdisciplinary! Technical and social
- Risk assessment

# Customised participatory process

- Engaged key parties
  - Government departments
  - Kongulai customary landowners
  - NGOs
- Staged process
  - separate then drawing together
  - building understandings then designing routes to solutions
  - building relationships
  - building capacity
- Appropriate process(es) for people and context



# Landowner process



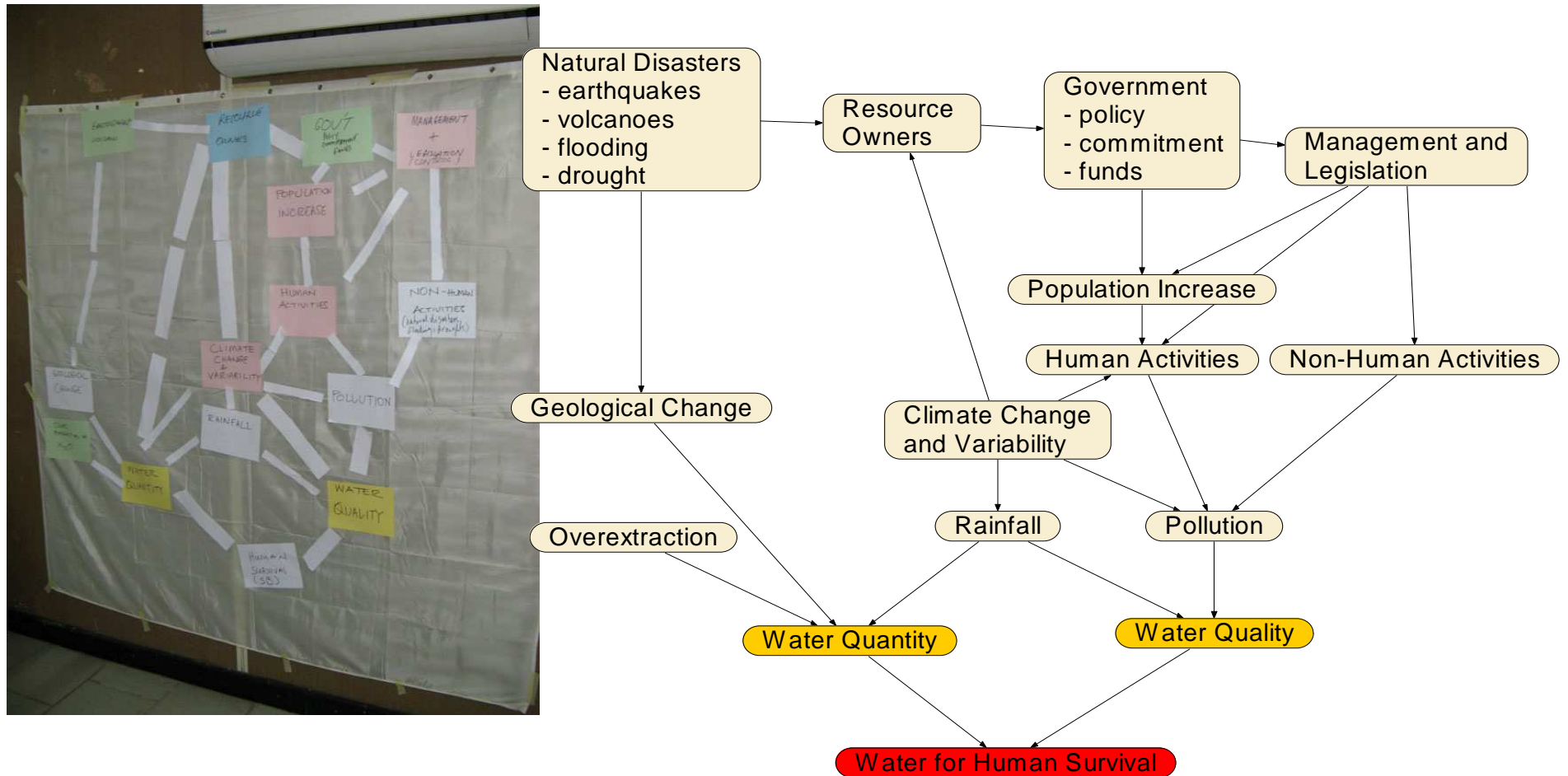
**Eliciting customary knowledge – 2D maps**



# Government and NGOs in workshops



# System understanding



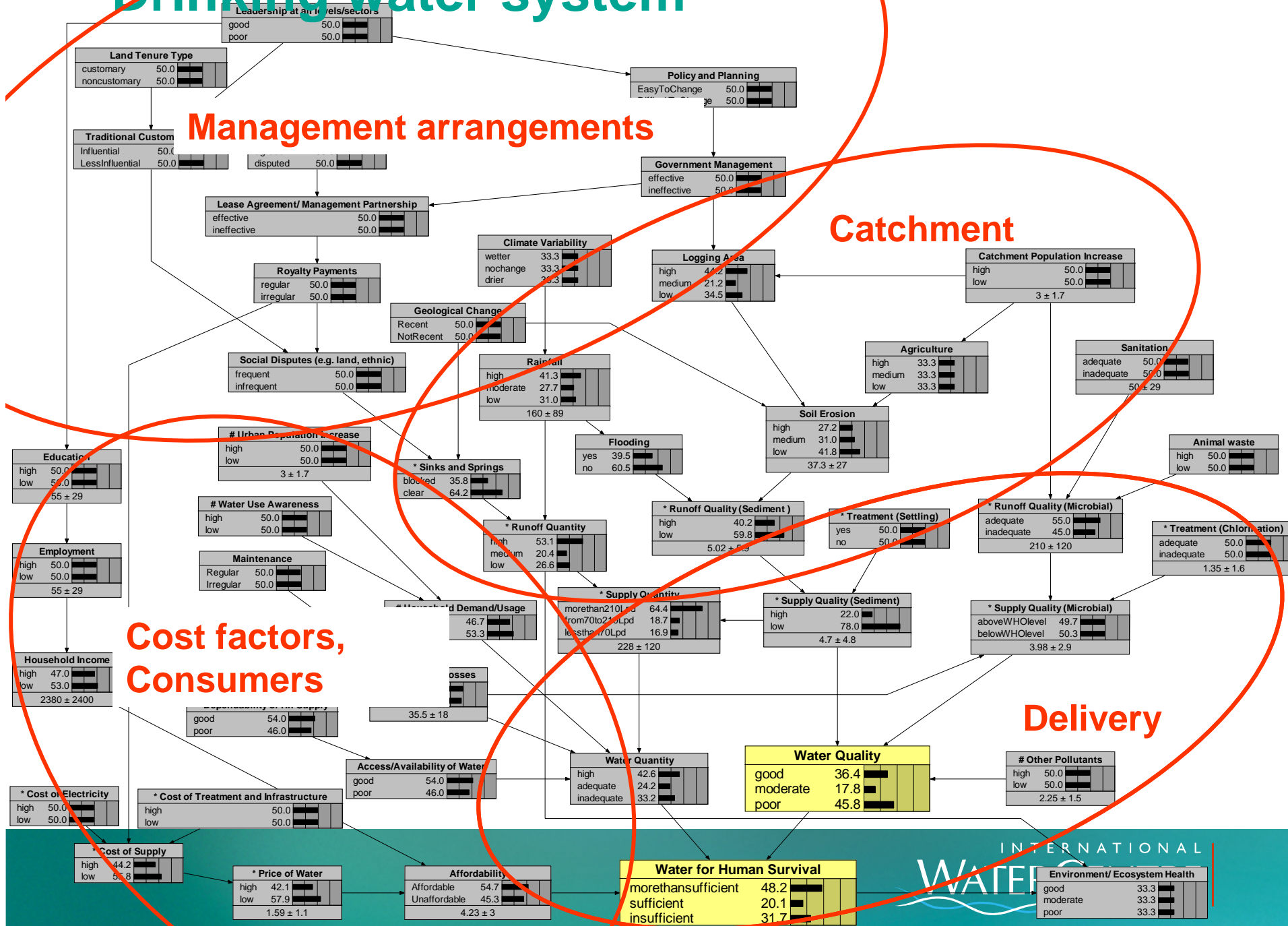
# Drinking water system

## Management arrangements

## Catchment

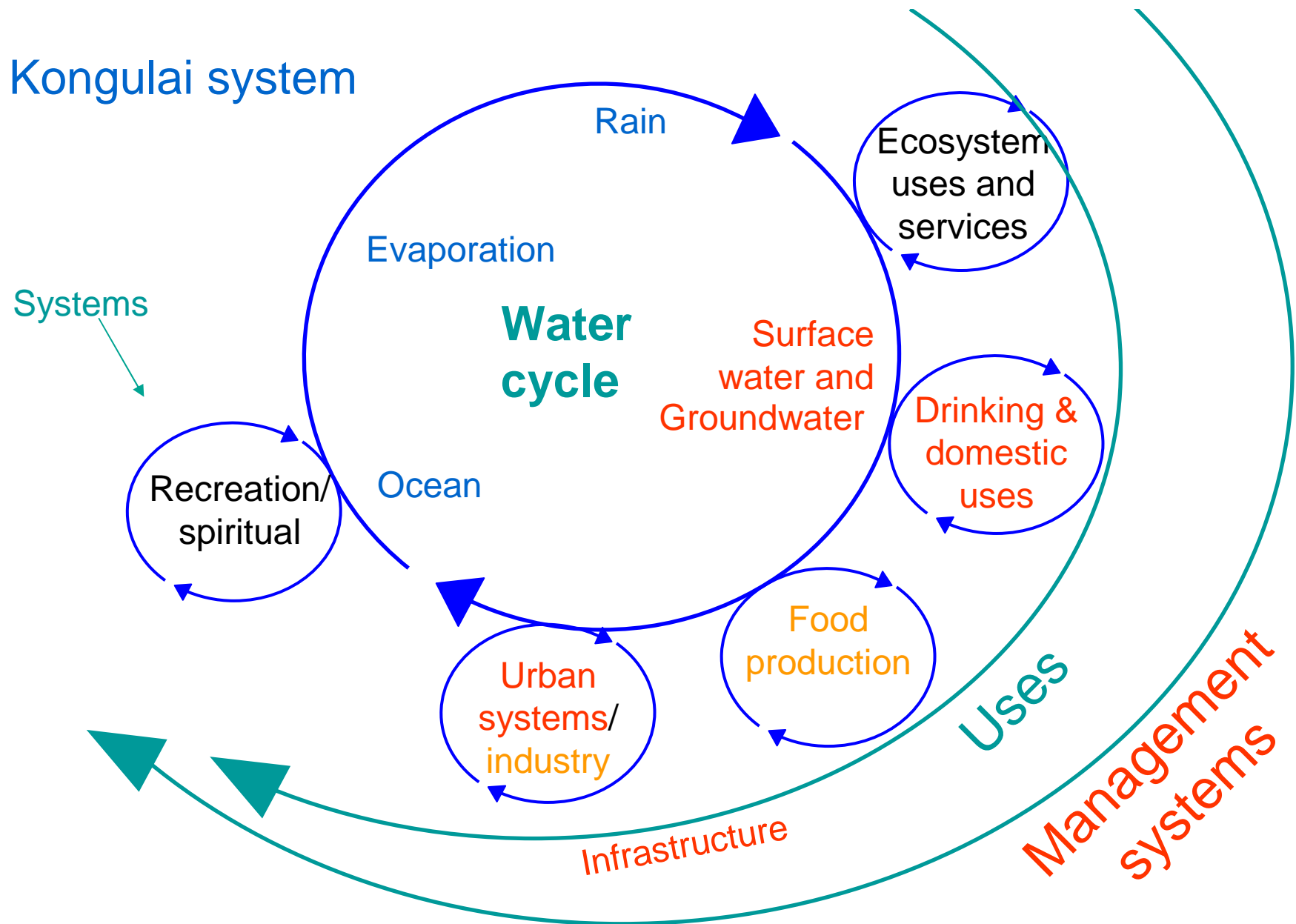
## Cost factors, Consumers

## Delivery





# Kongulai system



# Main system factors identified

- Natural – karst limestone + source in catchment
  - Earthquakes
  - Sabotage – ethnic tensions
- Management – lease arrangements between customary owners and government
  - Legal background
  - Lease and payment tensions
- Land and water uses - development in catchment
  - Subsistence farming
  - Logging
- Infrastructure - technical aspects of supply system
  - Reliance on diesel – affordability (relation to foreign aid)
  - Poor urban pricing

Thank you  
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