A research project to develop a systems understanding for catchment risk assessment, with a case study in the Solomon Islands (SI), has now traversed a number of stages. Working with an interdisciplinary team, we have developed a theoretical conceptual framework, applied this through a catchment risk assessment of a SI catchment and developed a model for managers to prioritise actions. The process described so far will be familiar to those working on adaptive management endeavors. What is unique from our experience arises from the cultural complexity of the SI, the challenge of developing a systems model covering socio-economic factors, and unexpected benefits that have arisen through a participatory model development process.

This paper explains in detail these unexpected outcomes: the social learning, network building and trust building elements that have emerged. The research has facilitated discussion between parties with long-standing conflict, leading one participant to comment: 'Before the two groups were not talking. Before there was no path through the grass and today we made the first path through the grass. The more it is worn, the clearer the path becomes.' The paper offers a step-by-step process for practitioners to analyse catchment and water systems in an integrated way.
Unexpected Outcomes:
Benefits of catchment systems understanding, Solomon Islands

Presenter: Bronwyn Powell
Research Team: Prof Helen Ross, Dr Suzanne Hoverman, Dr Terry Chan
Partners and participants:
Division of Water Resources, Ministry of Mines and Energy
Solomon Islands Water Authority (SIWA)
Environmental Health Department, Ministry of Health
Customary Land Holders, Non-government organisations
This research is undertaken by the Australian Water Research Facility

- Research partnership between Australian Agency for International Development (AusAID) & IWC for water and development issues in the Asia Pacific region
- Provides AusAID with an interdisciplinary, systemic foundation for assessing water issues and planning aid interventions
- Aims to: Contribute to aid effectiveness; Build research partnerships in the region; Involve young Australian researchers
Solomon Islands case study: research aims

- Develop conceptual framework for systems understanding of catchments and risk assessment
- Undertake catchment assessment and develop model using participatory process in Kongulai
- Quantify model for improved management
- Synthesize process for wider application
Research process

Situation and stakeholder analysis

Participatory process design

Stakeholder participation

Community, NGOs, government (managers),

Managers

Community, NGOs, government (managers),

Adapted from Hart et al. [2006]
Participatory approach

• Followed principles of public participation, including customised design for circumstances and to meet local expectations
• Took local advice, and hired a local interpreter
• Both genders included, and a range of ages
• Events held in comfortable, familiar surroundings
Stage 1: Separate stakeholder consultations to gather different knowledge and views
Conversion to a computer/numerical model

Why use a Bayesian Network? Because it:

- Is based on conceptual cause-effect links
- Is graphically based so can be used/understood by different people (good for communication)
- Can use sparse data and can be combined with expert opinion where there is no data
- Explicitly includes uncertainty
- Is relatively simple to build
- Is flexible and can be changed/updated easily
Common Goals
- Stakeholders united in desire for ‘water for human survival’: quality, quantity, sustainability
- Desire to explore alternative management arrangements

Challenges
- Lack of trust and communication between parties
- History of conflict and problematic institutional arrangements
Stage 2: Combined consultations and model refinement

- Highlighting areas of common concern
- Day-long workshop bringing stakeholders together
- Recap on understandings of catchment
- Confirmation of priorities
- Potential solutions to issues discussed in mixed groups
Stakeholder communication

• Facilitated process enabled groups to interact

‘Before the two groups were not talking. Now they can talk together. Before there was no path through the grass and today we made the first path. The more it is worn, the clearer the path becomes.’ Community interpreter
Stage 3: Model validation and use with managers

- Model refinement and transfer
- Workshop with senior managers to explain and demonstrate model
- Run management scenarios
- Discussion of participation and collaboration options with govt, landowners and NGOs
Stakeholder feedback

Partnerships, relationships, motivation

• Strengthened government relationships
  – Water resources, SIWA, Health
• Opened government-landowner relationships, though trust will take time
• Mobilised landowner interest and motivation
  – Both genders, range of age groups
Outcomes beyond expectations

- Increased networking and dialogue between and within stakeholders
- Partnership and social learning through joint research – parties learning together
- Participatory process leading to relationship building
- Intent of government to use similar process elsewhere in the country
References


For further information visit

[www.watercentre.org/research/awrf](http://www.watercentre.org/research/awrf)
or email b.powell@watercentre.org