Mainstreaming and modelling

Applying gender analysis to a water management modelling framework

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LAND AND WATER
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For the water sector, the advent of gender mainstreaming presents an opportunity to build on existing efforts to include and acknowledge **all** users and managers of water

Why include gender in modelling?

To work towards the 1992 Dublin Statement on Integrated Water Resource Management that enshrines the importance of gender in water management[2], CSIRO through the Sustainable Development Investment Portfolio (SDIP), is progressing down a path to mainstream gender in modelling.

Current water modelling methodologies rarely include gender. For example, responses from the Stockholm Environment Institute (SEI) 2017 survey of SEI water and energy model users showed that 88% thought that gender and social equity issues should be included in their modelling research. However, only 7% of responders said it was currently included[3]. This survey covered modelling practitioners from both genders.

The SEI's study revealed a desire to include gender in modelling related research but acknowledged in reality this is not occurring, perhaps partly because of a lack of established methods[4].

Gender mainstreaming

'the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality.'[1]

Method

Using an Australian standard for best practice in modelling – Black et al.'s Guidelines for Water Management Modelling [5] – we asked

'When building a model to support water management, would considering gender in every stage of the modelling process create different and better outcomes for the men and women affected by water management decisions and policies?'

To test this, we reviewed three key steps in the Guidelines and provided a range of examples and illustrations that show how gender analysis can be integrated within the modelling process.

1 Problem definition

- Gender considerations inform modelling objectives and scope
- Include gender social goals as criteria for success and design relevant reporting metrics
- Use gender analysis to reveal contextual social relations and build conceptual models
- Account for missing gender-specific knowledge by identifying the risks of such knowledge gaps and assessing the implications for confidence in modelling results

2 Option modelling

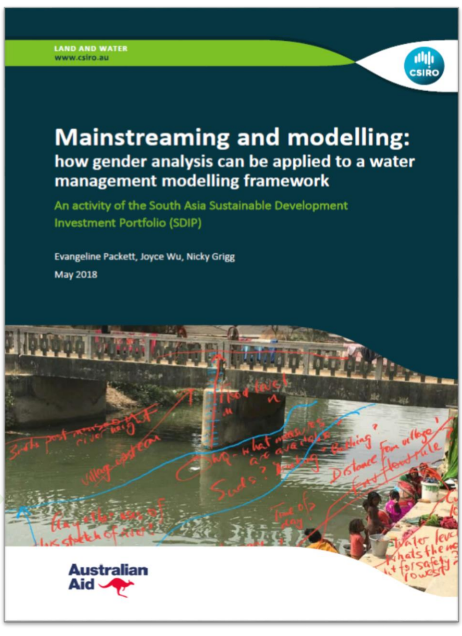
- Quantified gendered relationships with water are more readily incorporated directly into models, however qualitative relationships can also be used
- Gender disaggregated data reveals insights and options that may be masked by aggregated data
- Gender specific objectives can be used to inform appropriate choice of calibration objectives and procedures
- Formal uncertainty analyses can be used to explore consequences of uncertainties inherent in gender-related modelling
- Scenarios can be developed to explore gendered power structures or analysed for gender effect

3 Decision making

- Use selection methods to examine gender distributions of option effects
- Examine selection criteria to assess different assumptions of success
- Include stakeholder engagement in model development to inspire and empower people to make change

Where human relationships with water are excluded from a hydrological model that aids decision making, then water management decisions may miss crucial information with respect to the distribution of their effects[6]. If this distribution cannot be accounted for, that uncertainty should be included in the uncertainty analysis and communicated to decision makers.

The CSIRO SDIP team is committed to exploring how to have a more interdisciplinary approach towards modelling, as well as building greater participation and input from different groups of water users, including women and marginalised groups. The 'Mainstreaming and modelling' report has been generated from this work, and opens new possibilities for how we design and build models in the future to better address gender-specific needs.



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