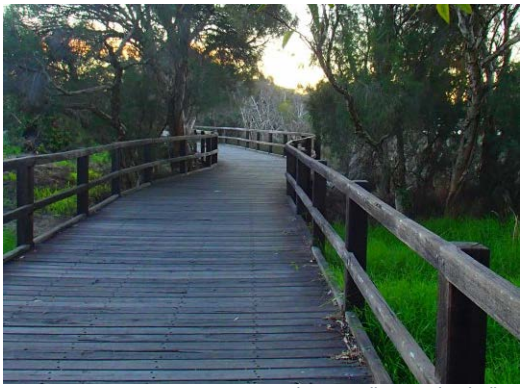
THE UNIVERSITY OF WESTERN AUSTRALIA | Centre for Environmental Economics & Policy

Water

CAPABILITY STATEMENT

UWA's Centre for Environmental Economics and Policy addresses complex, multi-faceted environmental problems through quality multidisciplinary research, engagement and training.

Our Centre specialises in providing socio-economic research and policy analysis in water, including for: integrated water management, water pollution from nutrients and sediment, water supply, water-sensitive urban design, blue-green economy and a circular economy. Our work aims to inform policy and provide evidence through economic analysis, including prioritisation and community values.



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WHY CHOOSE US?

1. We have established collaborations with researchers from leading universities and partnerships with research institutes.
2. We have more than 20 years' experience working on nationally funded research programs, industry projects and providing consulting services.
3. Our internationally recognised experts can support your organisation by:
   a. Conducting quality research, policy analysis and state-of-the-art bio-economic modelling.
   b. Developing and applying economic tools and frameworks to improve decision-making processes.
   c. Delivering customised training and activities to build capacity among your staff and key stakeholders.

SKILLS AND SERVICES

- Interdisciplinary research
- Bio-economic modelling of environmental issues
- Economic evaluation, investment choice and prioritisation frameworks
- Design and evaluation of environmental policies
- Valuation of non-market benefits, and conducting benefit transfer
- Informing adoption of environmental practices
- Environmental decision support tools
- Business case development/Benefit Cost Analysis
- Questionnaire/survey design and analysis
- Focus group facilitation & semi-structured interview techniques
- Multi-stakeholder project management
- Tailored training packages, including workshops and knowledge-sharing activities

OUR PARTNERSHIPS

- Australian Research Council
- CRC for Water Sensitive Cities
- Water Sensitive Cities Institute
- WA Department of Water & Environmental Regulation
- NSW Department of Planning, Industry and Environment
- Water Corporation of Western Australia
- CSIRO
- Swan River Trust
- World Bank (China)
- ARC's Centre of Excellence for Environmental Decisions (CEED)

OUR PEOPLE

Our centre consists of highly qualified academic staff, senior research fellows and postgraduate research students. Our **Water Team** is led by:

PROF DAVID PANNELL

Prof. Pannell is an environmental and agricultural economist who specialises in economic evaluation, risk, prioritisation and policy analysis. He is a prolific researcher, recognised with several awards, and has supervised 30+ PhD students to completion. He collaborates with a wide variety of industry & government organisations to help them improve their planning and decision-making processes.

DR ABBIE ROGERS

Dr Rogers' specialisation is in promoting systematic integration of social and environmental values in evidence-based decision making for natural resource managers and policy makers. Her research work is highly applied with significant experience in delivering stakeholder activities, including training, workshops and seminars.

RECENT OUTPUTS

- Tools: 'INFFEWS' – an investment framework benefit-cost analysis and non-market valuation tools for water-sensitive design of urban environments, designed for CRC for Water Sensitive Cities.
- Training videos: INFFEWS
- Industry Notes: BCA Tool, Value Tool, Insights on applying INFFEWS
- Case Studies: Assessment of non-market benefits of implementing large-scale water sensitive urban design; Assessment of social preferences of water sensitive housing features; Subiaco strategic resource precinct case study: non-market valuation of recycled water
- Ranking projects for water-sensitive cities: a practical guide.
- Review of non-market values of water sensitive systems and practices
- Stakeholder needs assessment report & stakeholder engagement strategy
- The capitalized value of rainwater tanks in the property market of Perth
- Expert judgements and community values on preference heterogeneity for protecting river ecology in Western Australia
- The value of restoring urban drains to living streams
- Community perceptions of the implementation and adoption of WSUD approaches for stormwater management
- The most cost-effective ways to maintain public open space with less water
- Public preference for drinking water
- Using improved markets to reduce over-extraction of groundwater.

CONTACT US

For enquiries, potential collaborations or new partnerships, contact:

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Water

RELEVANT PUBLICATIONS – JOURNAL ARTICLES

Bennett, J., Cheesman, J., Blamey, R. & Kragt, M.E. (2016). Estimating the non-market benefits of environmental flows in the Hawkesbury-Nepean River. Journal of Environmental Economics and Policy, 5(2): 236–248.

Blackmore, L., Iftekhar, S., and Fogarty, J. (2020). Subiaco Strategic Resource Precinct Case Study: Non-Market Valuation of Recycled Water – Final Report. Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities

Buurman, J. J. G., Lee, T. K., Iftekhar, M. S. and Yu, S. M. (2021). Strategies to promote the adoption of sustainable drainage by private developers a case study from Singapore, Urban Water Journal 18(1), pp. 61-67.

Cooper, B., Burton, M., Crase, L. (2018). Valuing improvements in urban water security: evidence of heterogeneity derived from a latent class model for eastern Australia. Applied Economics, 50 (31), pp. 3364-3375.

Cooper, B., Burton, M., Crase, L. (2018). Willingness to pay to avoid water restrictions in Australia under a changing climate. Environmental and Resource Economics, pp. 1-25.

Fogarty, J., Polyakov, M., Iftekhar, M.S. (2017). Equitable and efficient systems of water utility charges in the face of a changing water supply mix**.** Working Paper 1706, Agricultural and Resource Economics, The University of Western Australia, Crawley, Australia.

Gibson, F., Tapsuwan, S., Walker, I., Randrema, E. (2015). Drivers of an urban community's acceptance of a large desalination scheme for drinking water. Journal of Hydrology, 528, pp. 38-44.

Gunawardena, A., Hailu, A., White, B. & Pandit, R. (2016). Estimating marginal abatement costs for industrial water pollution in Colombo. Environmental Development 21, pp.26-37.

Gunawardena, A., Wijeratne, S., White, B., Atakelty, H., & Pandit, R. (2017). Industrial pollution and the management of river water quality: A model of Kelani River, Sri Lanka. Environmental Monitoring and Assessment, 189(9), 457.

Gunawardena, A., White, B., Hailu, A., Wijeratne, E.M.S. & Pandit, R. (2018). Policy choice and riverine water quality in developing countries: an integrated hydro-economic modelling approach. Journal of environmental management, 227, 44-54.

Gunawardena, A., Iftekhar, S. & Fogarty, J. (2020). Quantifying intangible benefits of water sensitive urban systems and practices: an overview of non-market valuation studies. Australasian Journal of Water Resources, 1-14.

Hone, S., Crase, L., Burton, M., Cooper, B., Gandhi, V.P., Ashfaq, M., Lashari, B., Ahmad, B. (2020). Farmer cooperation in participatory irrigation in south Asia: Insights from game theory. Water 2020, 12, 1329.

Iftekhar, M.S., Zhang, F., Polyakov, M., Fogarty, J. and Burton, M. (2021). Non-market values of water sensitive urban designs: A case study on rain gardens, Water Resources and Economics, 34.

Iftekhar, M.S., Blackmore, L. and Fogarty, J. (2021). Non-residential demand for recycled water for outdoor use in a groundwater constrained environment, Resources, Conservation and Recycling, 164.

Iftekhar, M.S. and Pannell, D.J. (2015). 'Biases' in adaptive natural resource management. Conservation Letters 8(6), 388-396.

Iftekhar, M. S., Burton, M., Zhang, F., Kininmonth, I., Fogarty, J., (2018). Understanding social preferences for land use in wastewater treatment plant buffer zones. Landscape and Urban Planning 178:208-216

Iftekhar, M. S., & Fogarty, J. (2017). Impact of water allocation strategies to manage groundwater resources in Western Australia: Equity and efficiency considerations. Journal of Hydrology, 548, pp. 145-156.

Iftekhar, S., Polyakov, M. and Rogers, A. (2020). Assessment of nonmarket benefits of implementing large-scale WSUD: Greening the Pipeline Case study. Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities

Iftekhar, M.S., and Polyakov, M. (2019). Assessment of non-market benefits of WSUD on a residential development: a case study. Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities.

Mennen, S., Fogarty, J., & Iftekhar, M. S. (2018). The most cost-effective ways to maintain public open space with less water: Perth case study. Urban Water Journal, 15(1), pp. 92-96.

Nordblom, T.L., Hume, I.H., Finlayson, J.D., Pannell, D.J., Holland, J.E. and McClintock, A.J. (2015). Distributional consequences of upstream tree plantations on downstream water users in a public-private benefit framework. Agricultural Systems 139, 271-281.

Polyakov, M., J. Fogarty, F. Zhang, R. Pandit and D. Pannell. (2017). The value of restoring urban drains to living streams. Water Resources and Economics, 17: 42-55.

Rogers, A.A., Burton, M.P., Cleland, J.A., Rolfe, J., Meeuwig, J.J. and Pannell, D.J. (2020). Expert judgements and community values: preference heterogeneity for protecting river ecology in Western Australia. Australian Journal of Agricultural and Resource Economics, 64(2), 266-293.

Zhang, F., Polyakov, M., Fogarty, J. and Pannell, D. (2015). The capitalized value of rainwater tanks in the property market of Perth, Australia. Journal of Hydrology 522, 317-325.

TOOLS - INFFEWS

INFFEWS VALUE TOOL

Iftekhar, M.S., Gunawardena, A., & Fogarty, J. (2020). **INFFEWS Value Tool**. CRCWSC Tool. Available to CRCWSC Participants and WSC Institute partners. Visit website. Request access from m.iftekhar@griffith.edu.au

Iftekhar, S., Gunawardena, A., Fogarty. J., Pannell, D. and Rogers, A. (2020). INFFEWS Value tool: Guideline (Version 3). Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities.

INFFEWS BCA TOOL

Pannell, D (2020). **INFFEWS Benefit: Cost Analysis Tool.** CRCWSC Tool. Request access from david.pannell@uwa.edu.au

Pannell, D (2020). INFFEWS Benefit: Cost Analysis and Strategic Decision Making**.** CRCWSC Technical Report.

Pannell, D (2020). INFFEWS Benefit: Cost Analysis Tool Guidelines**.** CRCWSC Technical report.

Pannell, D (2020). INFFEWS Benefit: Cost Analysis Tool User Guide**.** CRCWSC Technical report.

Pannell, D (2020). INFFEWS Benefit: Cost Analysis Comparison Tool**.** CRCWSC Tool.

Pannell, D (2020). INFFEWS Rough BCA Tool. CRCWSC Tool.

Pannell, D (2020). INFFEWS Rough BCA Tool Guidelines. CRCWSC Technical report.

Available to all CRCWSC Participants, WSC Institute partners and all industry practitioners. Visit website.

BOOKS & BOOK CHAPTERS

Leonard, R., Iftekhar,S., Green, M and Walton, A. (2018). Community perceptions of the implementation and adoption of WSUD for stormwater systems. *In: Approaches to Water Sensitive Urban Design.* Chapter 24. Copyright © 2019 Elsevier