Project 3.2

SUSTAINABLE WATER ALLOCATION

COOPERATIVE RESEARCH CENTRE FOR CATCHMENT HYDROLOGY

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CATCHMENT HYDROLOGY

Project 3.2
Enhancement of the Water Market Reform Process

Project Objectives

Water trading began in the mid 1980's but the economic impacts on regional towns and communities are by no means clear. Our aim is to conduct a socio-economic analysis of the guidelines and procedures for trading in mature water markets, and thereby provide guidance for future policies.

Expected Outcomes

- Evaluation of current constraints to trade and water market activity in the Fitzroy and Goulburn-Murray catchments
- Development of possible strategies to minimise any negative impacts of water markets on regional communities and towns
- Development of a suite of predictions as to the nature and structure of water markets in sub-catchments of the Fitzroy and Goulburn-Murray
- Experimentally tested policy options for water trading rules and procedures in mature and immature water markets in sub-catchments of the Fitzroy and Goulburn-Murray

Target problems

Water trading began in the early 1990's with the expectation that trade would redistribute water to more efficient uses, and the market is still evolving with experience. The question remains whether water trading is leading to an efficient and equitable distribution of water. As well as environmental outcomes, there are economic impacts on regional towns and communities. This project will provide water authorities and governments with insights to assist them with long-term strategic planning, and development of trading rules and procedures. To date, outcomes of water trading have been simulated using optimization models, but this project will use actual market data and traders to describe and simulate outcomes of trade. To date there has been little research work performed on such policy evaluation in Australia.

Research Plan

The project will evaluate existing trading rules and procedures and their impact on regional towns and communities and, in partnership with industry and other interest groups, develop scenarios and rules and procedures for trade in the year 2010. The rules and scenarios will be tested on the ground in controlled simulated trade experiments with irrigators and other possible traders. The information gleaned will be used to fine-tune the assessment and recommendations of future water trading rules and market structures to ensure efficient and equitable outcomes to trade. The various aspects of the project will meet a number of industry needs, including an examination of the equity and justice issues surrounding infrastructure, environmental and regional economic impacts of water trade, strategic development of trading rules and procedures, and community opinion of water management systems.

The Cooperative Research Centre for Catchment Hydrology is a cooperative venture formed under the Commonwealth CRC Program between:

- Brisbane City Council
- Bureau of Meteorology
- CSIRO Land and Water
- Department of Land and Water Conservation, NSW
- Department of Natural Resources, Qld
- Department of Natural Resources and Environment, Vic
- Goulburn-Murray Water
- Griffith University
- Melbourne Water
- Monash University
- Murray-Darling Basin Commission
- Southern Rural Water
- The University of Melbourne
- Wimmera Mallee Water

Associates:

- Hydro-Electric Corporation, Tas
- SA Water
- State Forests of NSW

This study will:

- Collate existing knowledge and explore synergies between water markets in the focus catchments
- Evaluate current water markets and isolate limitations to adoption of trade
- Evaluate water-trading models using available trade data for sub-catchments of the Goulburn-Murray River system
- Evaluate existing guidelines and procedures for trading in those catchments on the basis of promoting trade and an efficient and equitable distribution of water
- Develop predictions of future market structures and develop sets of trading guidelines and procedures for sub-catchments of the Fitzroy River system
- Conduct experiments to simulate trade under alternative market regimes
- Evaluate the hydrological and environmental outcome of trade under such regimes

Key Research Tasks - 2000-2003

- The key research tasks over the next three years will be to:
- Collate existing knowledge and explore synergies between water markets in the focus catchments
- Develop predictions of future market structures and develop sets of trading guidelines and procedures for sub-catchments of the Fitzroy and Goulburn-Murray
- Conduct experiments to simulate trade under alternative market regimes

Linkages

This project will link with:

- Project 1.1 Development of a catchment modelling toolkit
- Project 3.1 Integrated water balance, climatic and economic models
- Project 5.1 Modelling and forecasting of hydroclimatic variables in space and time

End users and Stakeholders

The method of policy evaluation proposed in this project is at the cutting edge and has not yet been widely used in Australia to date. There are potentially large numbers of end users who are active in the development of national, regional and local water policy frameworks.

Staff Involved

Project Leader	Dr John Tisdell (Griffith University)
Researchers	Dr John Ward (Griffith University) Mr Peter Brinsley (Department of Land and Water Conservation) Prof Chris Cocklin (Monash University) Mr Chris Carroll (Department of Natural Resources, Qld) Mr Ed Donohue (Department of Natural Resources, Qld) Mr Geoff Earl (Goulburn-Murray Water)

Participating Organisations

Department of Land and Water Conservation NSW • Department of Natural Resources, Qld • Goulburn-Murray Water • Griffith University • Monash University

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