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The Northern Mallee Pipeline: Exploring community perceptions of its impact

Summary Report

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The Wimmera Mallee Water Supply System

A pipe dream comes true

Introduction

This report is a summary of the study undertaken by WIDCORP during May—October 2006 to assess the impacts and lessons learned from the Northern Mallee Pipeline Project (NMPP). This summary report presents an overview of the previous evaluations of the NMPP; the study approach; key findings of the community perceptions of the economic, environmental and social impacts of the pipeline; and future research opportunities. More background information and detailed findings can be found in the Report (www.widcorp.com).

The Wimmera Mallee Water Supply system historically delivered stock and domestic water across the dryland Wimmera Mallee region of Victoria via open earthen channels from storages in the Grampians to farms and town storages across the region (van Veldhuisen, 2001). Whilst this system was critical for the development of agriculture and communities within the region, wastage of approximately 40,000ML of water through evaporation and seepage across this system was increasingly of concern (RWC, 1991).

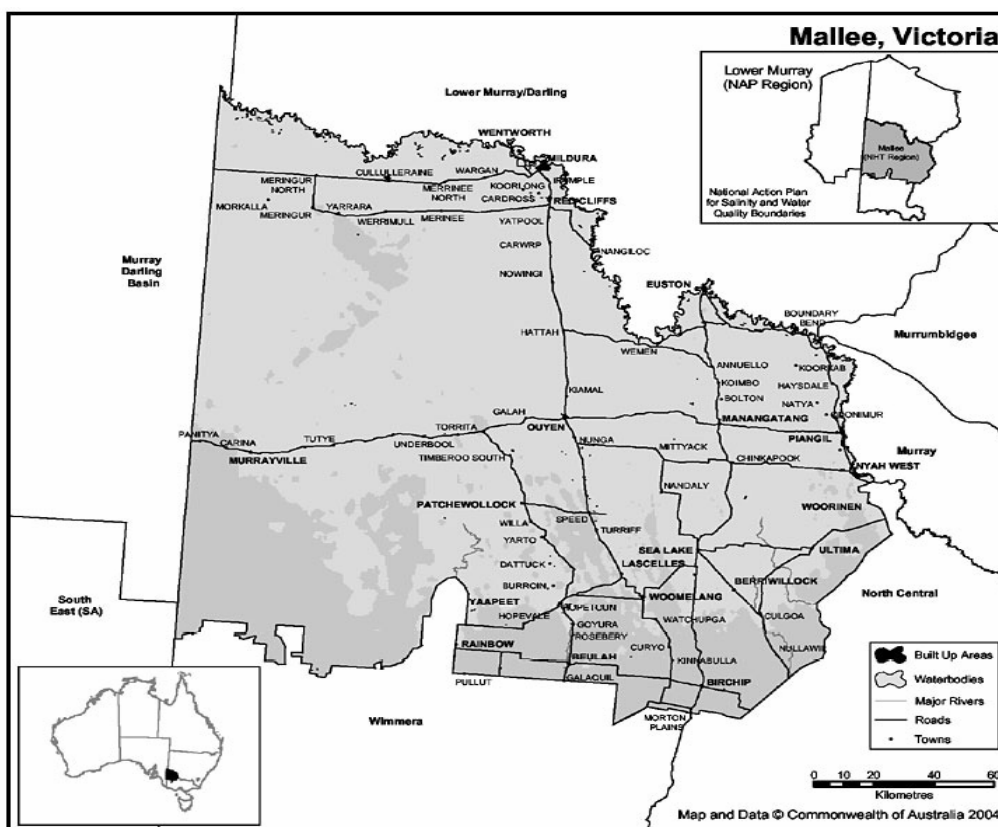
In response to this situation, the Northern Mallee Pipeline Project (NMPP) was initiated in the early 1990's by the Rural Water Commission (RWC). This major infrastructure project replaced the delivery of open channel water to the Northern Mallee farms and towns with a pipeline supply from the Murray River.

■ Significance of this study

Capturing the implications of this major change in water delivery across the region provides us with an opportunity to understand its regional significance and document the lessons learned

This study provides a review of the impacts of the replacement of the channel /dam system with a piped water supply

The Northern Mallee Region, Victoria



■ The Northern Mallee Region

Location: North West Victoria

Area: 43,000 square kms

Population: 61,095

Economy: broadacre cropping, prime lamb & intensive irrigation

Overview of previous evaluations of the NMPP

Three major evaluations of the Northern Mallee Pipeline Project have been completed. These evaluations indicated that the pipeline has improved:

- Security and quality of water supply
- Flows to the Glenelg and Wimmera Rivers
- Aesthetic quality of gardens and landscapes
- Water recreation
- Cropping on reclaimed land

Upon reviewing these evaluations a number of knowledge gaps were identified.

- Limited ongoing assessment of the impacts of the pipeline
- Limited information available regarding the community perceptions of the impact of the pipeline on the community and farming.

This study of the impact of the NMPP and the lessons learned is the first step in gaining this knowledge and aims to provide a basis for further longitudinal research into the impacts of the Northern Mallee and Wimmera Mallee pipeline projects.

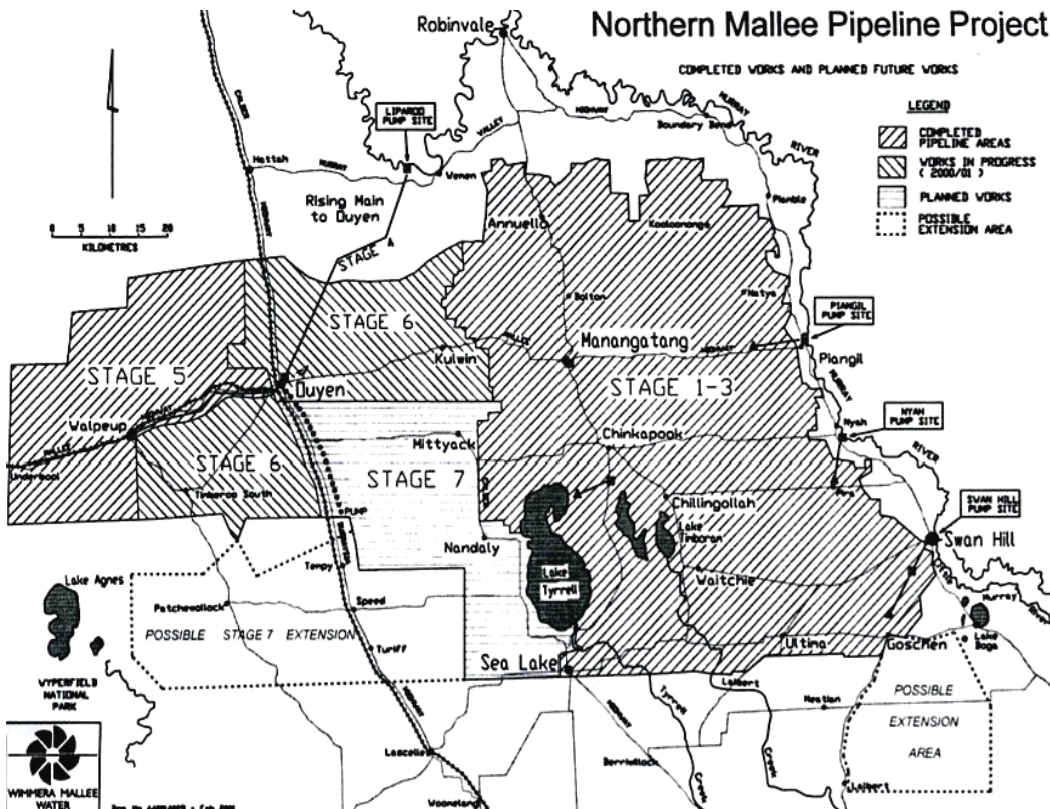
Documents reviewed

Kinhill Engineering Pty Ltd (1995) Northern Mallee Pipeline Review

Snowy Mountains Engineering Corporation (1999) Northern Mallee Pipeline Project Report assessed Stages 1-3 of the pipeline

Brian Garrett & Associates (2001) Evaluation Report of WARMPlan 2001

The Northern Mallee Pipeline Project area, Stages 1-7 (1992-2002)



Northern Mallee Pipeline Project

Aim: to replace channel delivery of water from the Grampians storages to a piped system sourced from the Murray River

Duration: Completed in 7 stages between 1992-2002

Area: 65,000Ha; 1700 farms; 12 towns

Funding: Federal & State governments; landholders

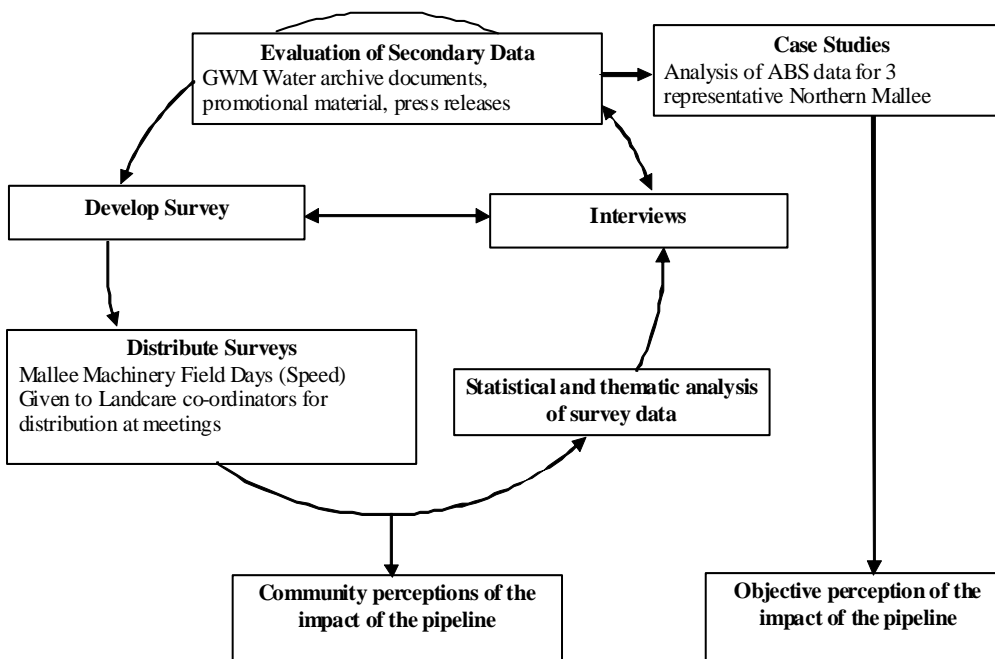
Study objective

The main objective of this study was to gain an understanding of how a change in water infrastructure has impacted on the community and farming.

Method

The study approach used a triangulation method to assess the impacts of the pipeline. This approach uses multiple methods including interviews, observations, questionnaires and written secondary sources to strengthen data validity and reliability. Statistical and quadrant analyses were used to analyse the survey data. Thematic analysis was used to assess the themes in the written secondary data and interviews. The data from these analyses were converged and a number of trends in the data were identified. These trends are summarised in this report rather than conclusive statements about the impact of the pipeline.

The study approach: triangulation



The aims

To investigate the social-economic profile of the Northern Mallee region pre and post pipeline construction

To understand the community perceptions of the Northern Mallee pipeline

To provide a basis for further longitudinal research

The Northern Mallee Community Attitudes Survey

Developed by WIDCORP to assess the community perceptions of the impact of the pipeline and important pipeline attributes pre- and post construction

553 questionnaires distributed

10% response rate – 54 completed and returned

Small sample representative of 11 Northern Mallee postcodes

Over 150 newspaper articles dated between 1992-2002 were sourced from:

The North West Express; Wimmera Mail Times; The Buloke Times; Herald Sun; The Donald-Birchip Times; The Swan Hill Guardian; The Wedderburn and Inglewood Express; North Central News; Warracknabeal Herald; The Mail-Times; The Hopetoun Courier

Economic impacts

The economic base of the Northern Mallee is largely based on broad-acre cropping and prime lamb in the southern areas and intensive irrigation in the northern areas. A large part of this region is national park which attracts many tourists annually. With the introduction of the pipeline it was anticipated that a secure supply of high quality water would boost the economics of the region by encouraging the development of new businesses and an influx of tourists (RWC, 1991). This study explored whether the community believed that the pipeline enhanced these economic aspects of the region.

Summary of study findings on the economic impacts of the pipeline:

- Many survey respondents (66.1%) believe that the pipeline has improved the region's economy.
- Secondary data indicated that some farmers were disappointed with the costs associated with the pipeline, with on-farm set-up costs being viewed as high.
- 51% of survey respondents agreed that the pipeline has led to excessive water costs.
- 37% of open-ended survey responses expressed concern regarding costs of piped water.

Quadrant analysis

A statistical analysis that compares the average importance of the benefit relative to the perception that the benefit has been achieved

This analysis enables the various benefits to be classified into four quadrants:

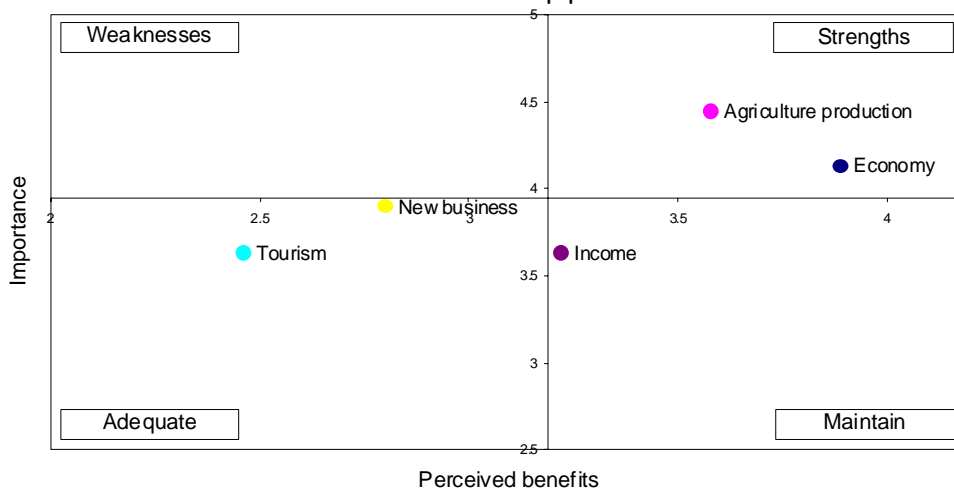
Strengths: High benefit and importance rating

Weaknesses: Low benefit, high importance rating

Adequate: Low benefit and importance rating

Maintain: High benefit, low importance rating

Quadrant analysis - perceived economic benefits and important attributes of the pipeline



Open-ended survey responses

“too highly priced for no good reason”

“costs are so high...if water was always regular, maybe worth it”

“cost per KL of water is very high...high price to pay for a nice garden”

This is a summary of the community perceptions of the economic impacts of the pipeline based on the convergence of multiple data analyses.

Benefits

- Improved economy
- Increased agricultural production

Limitations

- Limited attraction of tourism & new business to the region

Concerns

- Excessive water costs

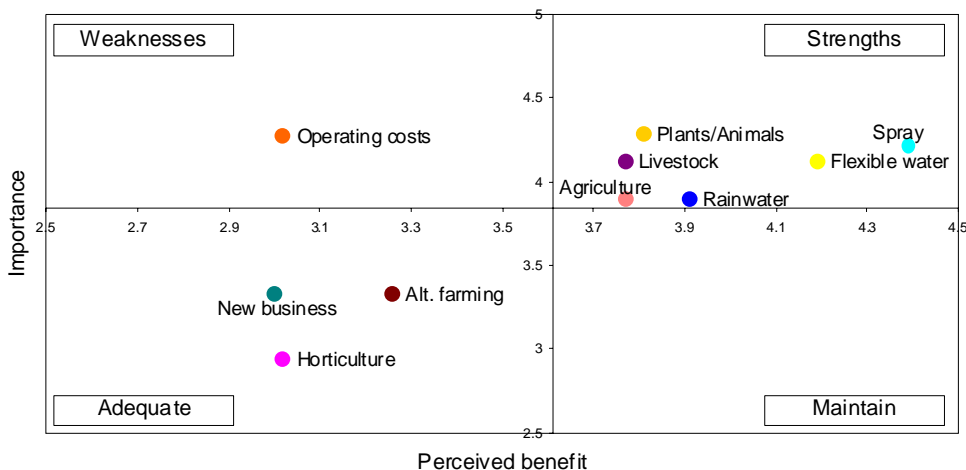
Farming impacts

Broad-acre farming is the predominant source of income for many Northern Mallee families and it relies on water for cropping cereals, wool production and prime lamb. Prior to the introduction of the pipeline it was becoming increasingly difficult to maintain stock in this region due to limited water availability and poor water quality. It was anticipated that the pipeline would secure a high quality water supply which would not only enable farmers to keep stock but improve livestock condition. This study explored the community perceptions of the impact of the pipeline on their farming practices.

Summary of study findings on the farming impacts of the pipeline:

- Overall the pipeline has had a positive impact on farming.
- Security of water supply for stock and increased effectiveness of spray units are considered the main benefits.
- Farmers have made some changes to their broad acre farming practices.
- Very few new agricultural enterprises have been developed.

Quadrant analysis: perceived farming benefits and important attributes of the pipeline



This is a summary of the community perceptions of the farming impacts of the pipeline based on the convergence of multiple data analyses.

Benefits

- Increased flexibility of water systems
- Effectiveness of pesticides & spray units
- Improved livestock
- Reduced use of rainwater

Limitations

- Reduced pests & weeds
- Increased financial security
- Improved quality of farm life
- Farm operating costs
- Limited opportunities for new business

Concerns

- On-farm set up costs

Comments from newspaper articles post-pipeline construction

“the quality of land once traversed by channels (has) already improved as a direct result of piping”

- The Swan Hill Guardian, 9.08.2000

“channel seepage has put sizable areas out of production”

- The North West Express, 12.11.1998

Open-ended survey responses

“only for having this pipeline we would not be running sheep”

“due to the drought we wouldn't be able to run stock without the pipeline”

Environmental impacts

The prolonged dry period in the Northern Mallee region prior to the pipeline combined with the inefficiency of the channel water delivery system had a number of significant environmental consequences. Water wastage through seepage and evaporation, declining water quality and reduced in-stream flows into the Wimmera and Glenelg Rivers were long recognised as unsustainable. The introduction of the pipeline was expected to improve water security and quality with the aim of the project being to save 50,000ML of channel water per year. This study explored the community perceptions of the impact of the pipeline on the environment.

Summary of study findings on the environmental impacts of the pipeline:

- The community have a mixed reaction to the overall impact of the pipeline on the environment.
- Primary and secondary data indicate that the main benefits are improved water security for domestic and gardening purposes and reduced water wasted.
- The community misses the aesthetics of water in farm dams.
- Concern was expressed for the loss of wildlife.

Comments from newspaper articles post-pipeline construction

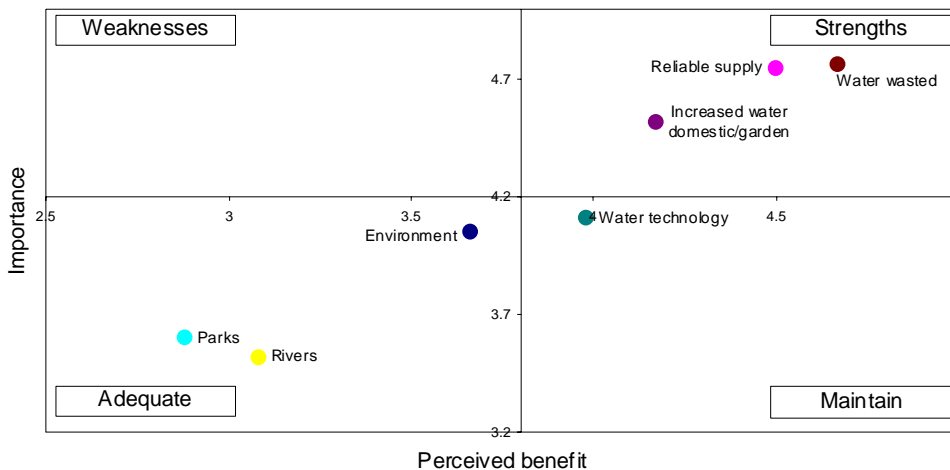
“security of supply the year round”

- The Buloke Times, 19.10.1998

“farming aside, I now have a lovely garden with vegies, flowers...lawn”

- The Swan Hill Guardian, 9.08.2000

Quadrant analysis: perceived environmental benefits and important attributes of the pipeline



Open-ended survey responses

“...the loss of dams has had a detrimental effect on wildlife”

“In the searing heat...I was told of the stress suffered by native birds/ animals...one feels helpless to defend or help them ”

This is a summary of the community perceptions of the environmental impacts of the pipeline based on the convergence of multiple data analyses.

Benefits

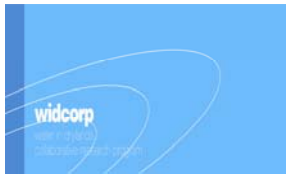
- Water security
- Increased water availability for domestic & garden purposes
- Reduced amount of water wasted

Limitations

- Limited increase in water available for parks and rivers

Concerns

- Loss of wildlife



Social impacts

Recreational water in the form of on-farm dams and off-farm Lakes has played a large role in the social lives of many Northern Mallee community members. Yabbying, swimming, fishing and water skiing has been a feature of many family traditions and holidays. With the water shortage prior to the pipeline many of the lakes had dried, leaving a hole in the social activities of these families and increasing the importance of on-farm dams. This study explored the community perceptions of the impact of the pipeline on recreational water use in the region, social activities and social well-being.

Summary of study findings on the social impacts of the pipeline:

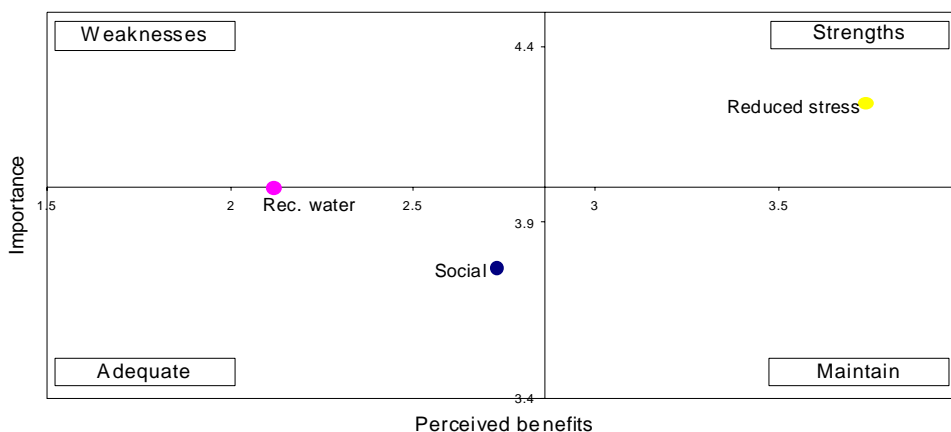
- The community perceptions of the social impacts of the pipeline are mixed.
- Improved community spirit and quality of life and reduced levels of stress and anxiety are considered the main social benefits.
- There was a negative response to the impact of the pipeline on recreational water use, with 64.8% of survey respondents making comments regarding the loss of yabbying, swimming and fishing in dams.
- Latter stages of the pipeline (Stages 4-7) were seen by most survey respondents (65.6%) to have a negative impact on the region's recreation and entertainment , compared to the earlier stages (18.2%)

Comments from The North West Express, 30.07.1998, during pipeline construction

“the importance of saving this Lake (Walpeup) is paramount to the value of this community's standard of living”

“there will be no recreation water within a 100km radius of the lake”

Quadrant analysis: perceived social benefits and important attributes of the pipeline



Open-ended survey responses

“it has ruined water recreation activities”

“[I miss] yabbying and swimming in family dams ...social and family gatherings”

This is a summary of the community perceptions of the social impacts of the pipeline based on the convergence of multiple data analyses.

Benefits

- Improved quality of life
- Reduced level of stress & anxiety
- Improved community spirit

Limitations

- Loss of recreational water
- Limited improvements in the aesthetic quality of the region

Concerns

- Loss of on-farm recreational activities; yabbying and swimming
- Loss of water in Lakes for skiing and swimming

Key findings

The findings summarised in this report are reflective of trends in the data rather than conclusive statements regarding the impacts of the pipeline. They are a guide to the community perceptions of the impact of the pipeline on the community and farming and provide a basis for further longitudinal research.

The main findings of this study on the impacts of the pipeline are:

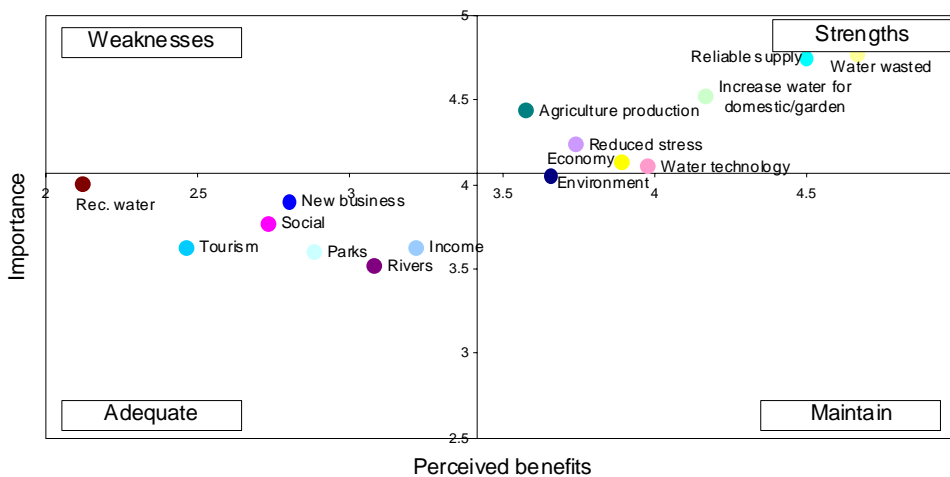
- The community perceptions changed over time from somewhat sceptical to very positive.
- Economic, environmental and social impacts perceived as important by the community were achieved.
- The negative response to the loss of recreational water use hasn't had a negative impact on the overall perception of the pipeline.
- Reliability of water supply for domestic & stock purposes is more important to the community than recreational water.
- Perceived quality of life has improved.

Social-economic profile of three Northern Mallee areas

Analysis of ABS data for Manangatang, Ouyen and Ultima in 1991 & 2001 did not detect any changes in these regions demography or economy that could be related to the pipeline

Trends in these regions population, age and economy were reflective of trends across other rural regions of Victoria

Quadrant analysis: perceived benefits and important pipeline attributes



This is a summary of the community perceptions of the impacts of the pipeline based on the convergence of multiple data analyses.

Benefits

- Increased agriculture production
- Security of supply
- Increased water availability for domestic & garden purposes
- Reduced amount of water wasted

Limitations

- Limited attraction of tourism & new business to the region
- Limited increase in water available for parks and rivers
- Limited improvement in social activities
- Limited increase in water for recreational use

Concerns

- Cost
- Loss of recreational water use
- Loss of wildlife

Follow-up research

The community perceptions of the impact of the pipeline provide a basis for more detailed research into the actual economic, environmental and social impacts of the pipeline. The main aims of the follow-up research will focus on quantifying some of the economic costs and benefits of the pipeline and the social and environmental implications.

- To quantify the economic costs and benefits of the pipeline.
- To quantify the impact of the new water tariff structure on farm income.
- To identify the social-economic profile of Northern Mallee towns and farms pre and post pipeline construction using more specific data.
- To understand how the Northern Mallee community has adapted to the loss of recreational water.
- To identify whether farmers have proactively created biodiversity opportunities for wildlife as a result of the loss of some farm dams.

Other research opportunities

This study highlighted a number of other research opportunities that would enhance the understanding of the impact of the pipeline in the Northern Mallee and provide valuable insight into similar water infrastructure projects elsewhere. These include:

- Longitudinal research to assess the impacts of changes in water infrastructure on communities over time
- Understanding the value of water and its uses and how this might change under different supply and demand conditions
- The role water security plays in:
 - The quality of life of rural communities
 - The uptake of new farming and business opportunities

References

Van Veldhuisen, R. (2001). *Pipe Dreams: A stroll through the history of water supply in the Wimmera Mallee*. Horsham, Victoria: Wimmera Mallee Rural Water Authority

RWC (1991) *Wimmera Mallee System Study: Draft Summary Report*. Kerang, Victoria: RWC