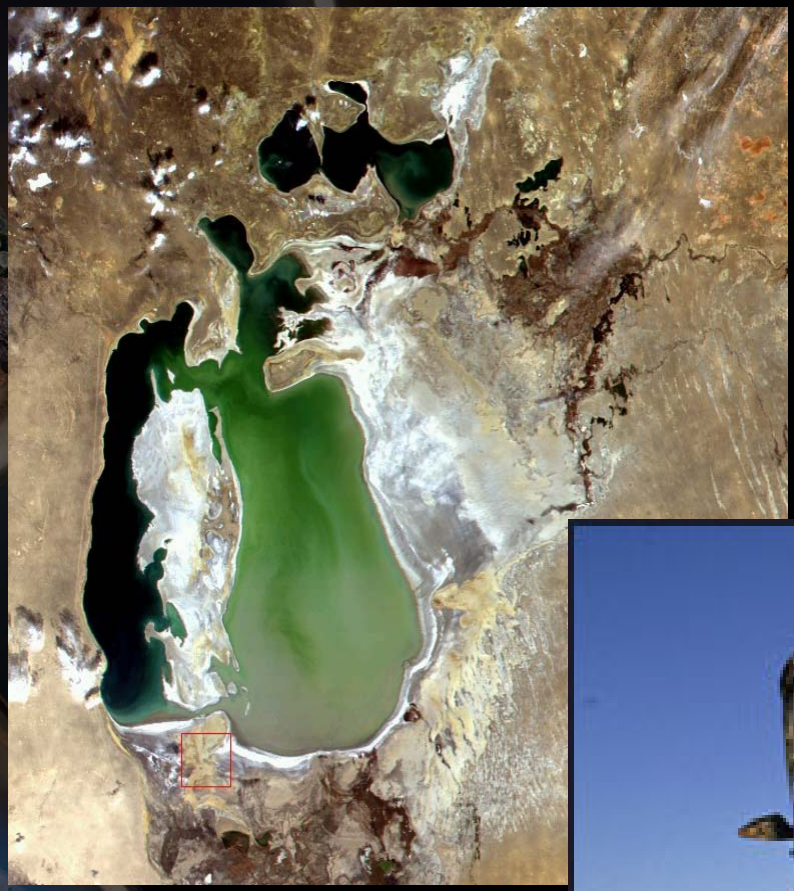

WATER USE AND SUSTAINABLE DEVELOPMENT IN COAL MINING – A CASE STUDY FROM CENTRAL QUEENSLAND

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Manager – Environment, BMA Coal[2]

The use of water to support mining operations in remote areas represents a significant challenge to all mineral companies operating in Australia. When infrastructure and management systems provided by the company are also involved in supplying local communities and rural industries, the multiple stakeholders and different values involved introduce a complexity that reflects overlapping and sometimes conflicting priorities associated with the concept of sustainable development.

This paper describes a joint project between BMA Coal and the University of Queensland's Sustainable Minerals Institute which used a modified risk management technique to evaluate a section of the BMA water infrastructure in Central Queensland. The Sustainability Opportunity and Threat Analysis (SOTA) technique has been designed to consider opportunities, as well as threats, that could affect the viability of an operation and its ability to contribute to sustainable development objectives. Once key threats and opportunities have been identified, the focus is then on selecting controls for managing priority risks/opportunities and developing indicators for gauging progress in these areas.

The technique was applied to the water life cycle for a portion of the BMA system including both operating mines and communities. In the process a number of broad issues suitable for inclusion in company strategic planning processes were identified. The risk management approach proved to be a useful tool for focusing attention on sustainability issues which might not otherwise be captured. The main challenges have been to ensure that opportunities as well as risks are properly identified, and that sufficient regard is paid to the interests and concerns of external stakeholders.

Water use and sustainable development – a case study from Central Queensland

Robin Evans, Sustainable Minerals Institute
Peter Roe, BHP Billiton Mitsubishi Alliance

Project Background

- SMI focus on sustainability metrics at site level
- Proposal to adopt risk assessment methodology to identify key issues: Sustainability Opportunity and Threat Assessment (SOTA)
- BMA focused on water issues

The SOTA Approach

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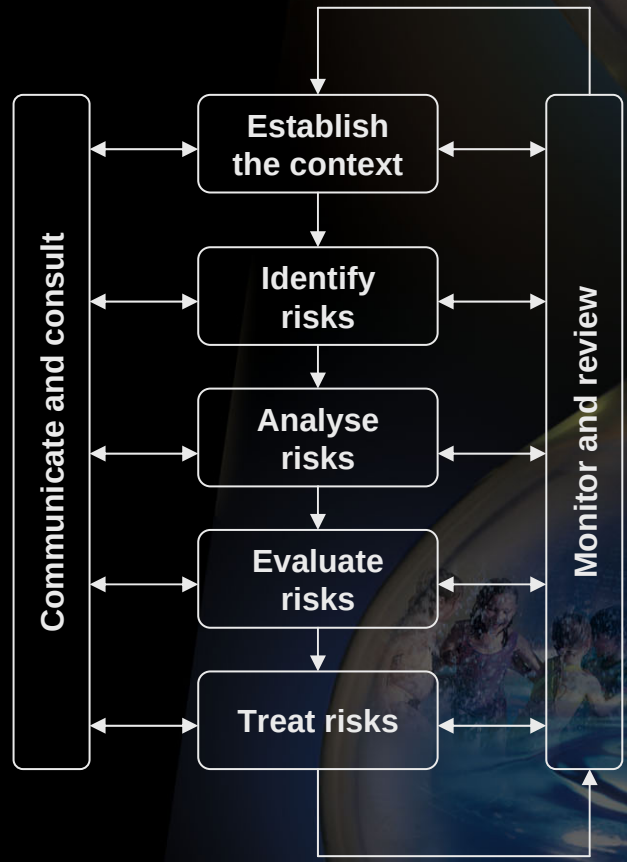
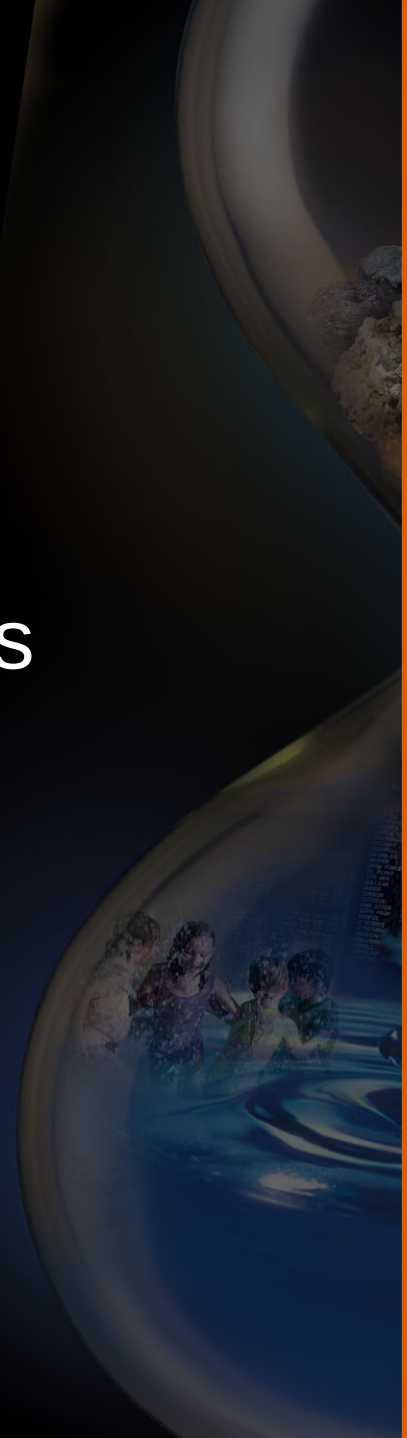
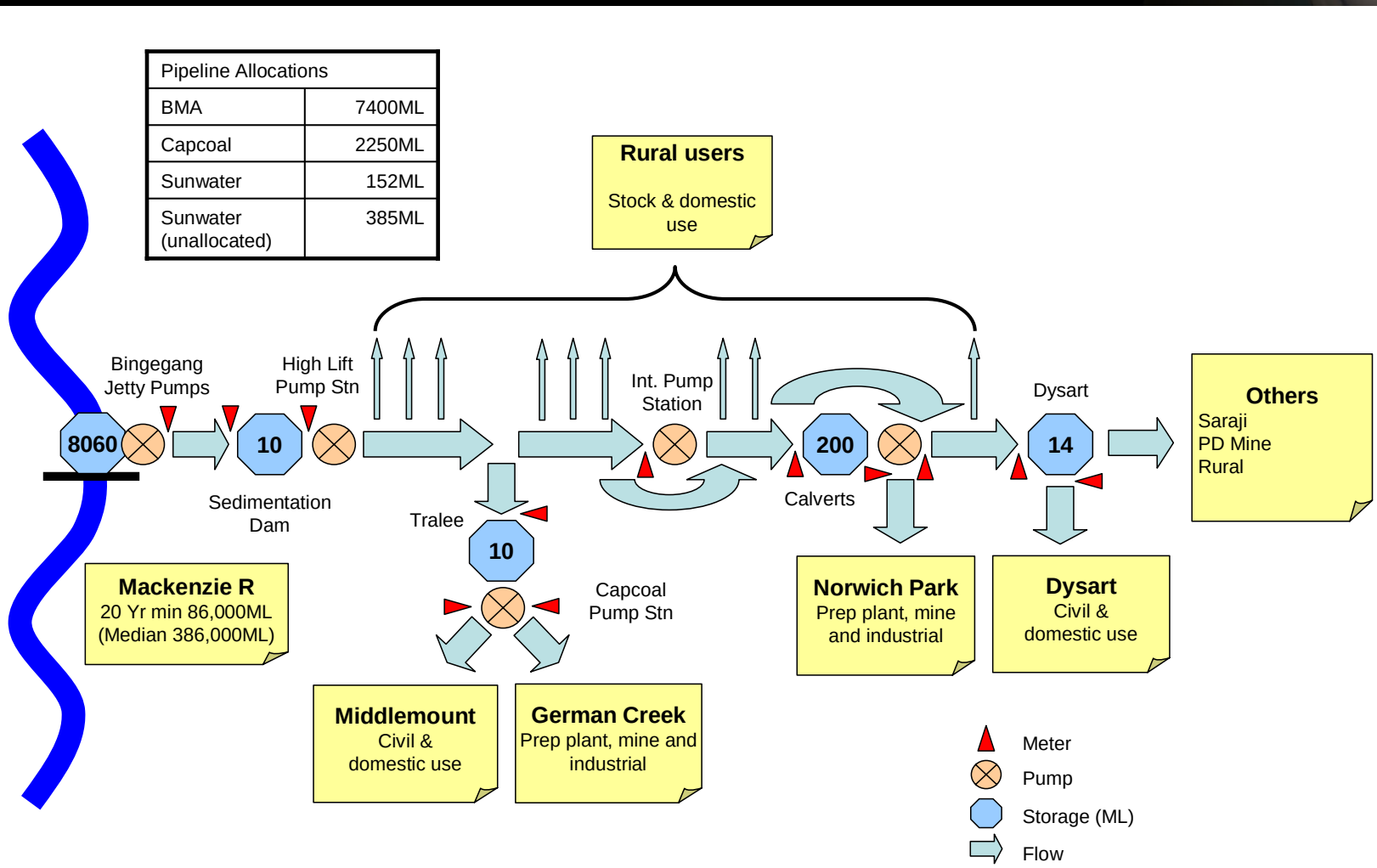


Key aspects

- Qualitative approach
- Focus on opportunities, incorporate into risk protocols
- Identification of stakeholders
- Information gathering and organising for prompts – identifying “Hazards”
- Participative workshop



Mackenzie River to Dysart

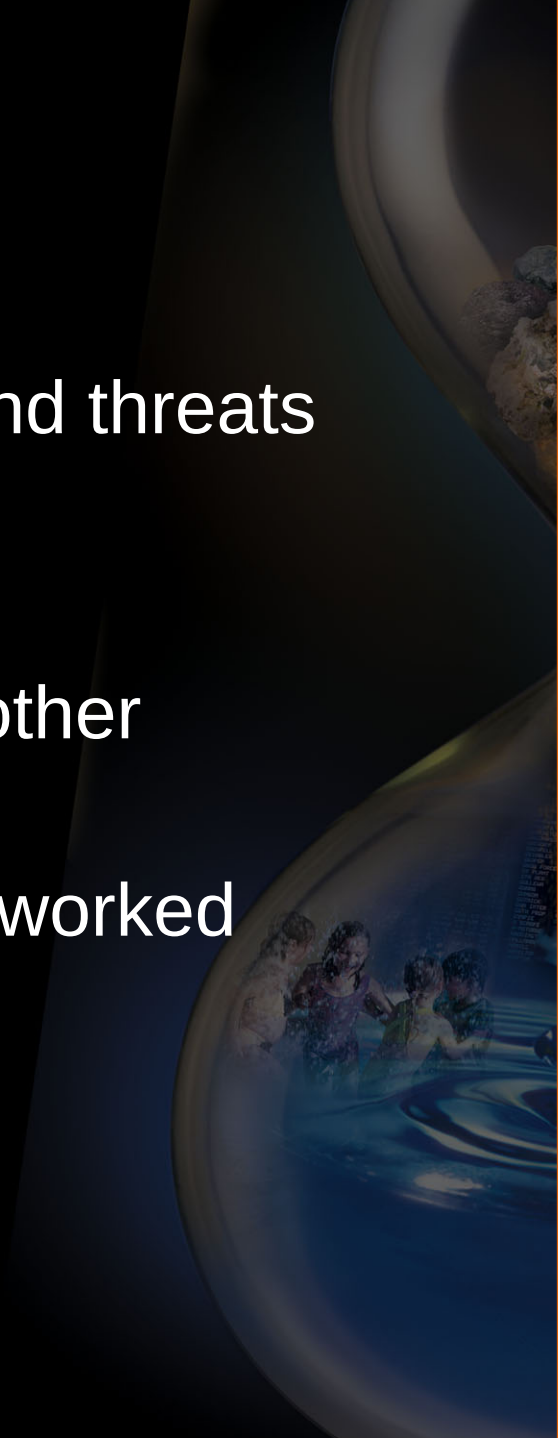


Example

Hazard ID:	Use of fresh water for vehicle washdown
Identify risk:	Opportunity to replace with recycled water from clean mine dam nearby
Analyse risk:	Likelihood 4 out of 5, relatively straightforward. Consequence 2 out of 5, reasonable financial benefit
Evaluate risk:	Risk rating 5 out of 9, worth pursuing
Treat risk:	Commission project to design water circuit, review water quality data

Overall outcomes

- 156 specific opportunities and threats covering all impact areas
- Heavy bias towards threats
- Difficulties in incorporating other stakeholder viewpoints
- Risk assessment approach worked well and was well-accepted



Key issues

- Risks can have positive impacts too, essential to consider for SD
- Water management for the industry is not just a technical issue
- Water affects everyone, and everyone is interested