

# Australia-India Brahmani Basin Project

Working in Partnership with the Government of India to improve water management in the Brahmani Basin

## The aim of our water work internationally and in India

CSIRO is working both nationally and internationally to help inform policies and strategies for supporting effective water resource management. The aim is to improve the livelihoods and economic well-being of people in large and complex river basins, currently in Australia, Asia, the Pacific and South America.

The organisation helps deliver intelligent and sustainable water management solutions in regions of increasing demand due to growth across water resource sectors. They also help improve access to safe water in a highly variable and changing climates and in considering the needs of the environment.

One of the organisation's recent international water projects has been to identify key future challenges and opportunities for water – its use, planning and management – in the Brahmani Basin in India.

This project has been undertaken as part of the Memorandum of Understanding on water between the Governments of India and Australia. The project established a partnership between the Government of India and CSIRO, in building capacity in the Government of India to sustainably manage their water resources and enabling CSIRO to adapt research to meet the water resource challenges of India.



## The challenge

India's water resources are under growing pressure, with scarcity a main concern due to climate pressures and more investment needed to address access to water resources. In the Brahmani Basin, rural communities are impoverished and lack access to a reliable food resource.

## Our response

For this project, CSIRO used a modelling approach to understand the current available water resource, and explore potential investments in water management with a view to improving agricultural production to underpin improved livelihoods in the Basin. Agriculture makes a vital contribution to the Indian economy. While it contributes close to 16 % of GDP it underpins livelihoods, with 60 % of the population being dependent on this sector. Irrigated agriculture is a large and growing contributor to the Indian agricultural economy and improving irrigation water delivery is a critical need.

The CSIRO project used a river system model of the Brahmani Basin to address issues of improved management of water resources for agriculture, industry, energy, critical human needs and the environment. The project assessed the benefits of investments in current infrastructure in the Basin and in the development of new infrastructure. It also explored potential impacts of climate change.

## The results

Project outcomes include the model and modelled scenarios that were designed to support a Basin planning process; a scenario reporting tool; and synthesis and technical reports. This model has been shared with central and state governments. A capacity building program in model development and application was also undertaken, with training events held at the National Water Academy facilities in Pune and a model developed in partnership for the Baitarni Basin.

### Flow Impacts

Scenario **B**

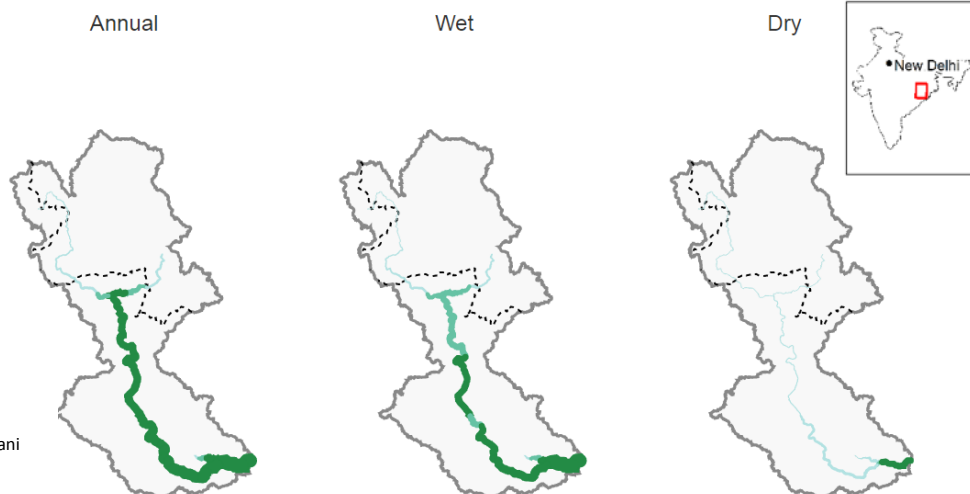
#### Legend

- 0 - 5000 MCM
- 5000 - 10000 MCM
- > 10,000 MCM

Scenario B: the most recent level of development - existing crop mixes and delivery efficiency

The most recent level of development. All storages are present, infrastructure management, operational rules and crop types and areas planted are reflective of today's practices.

Source: Pollino et al (2016) Modelling for river basin planning: a demonstration in the Brahmani Basin, India: Synthesis report.



## The legacy

<https://publications.csiro.au/rpr/pub?pid=csiro:EP165669>

CSIRO has established an enduring partnership in India to continue to meet the challenges of sustainably managing water resources. This legacy is embodied in relationships formed, use and application analysis methods and an understanding of how to communicate science to action in policy. The outcomes from the project have the potential to underpin a dialogue to support developing a basin plan for the Brahmani Basin.

## Acknowledgements

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*This factsheet designed and implemented by CSIRO contributes to the South Asia Sustainable Development Investment Portfolio and is supported by the Australian Government.*



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We do this by using science to solve real issues. Our research makes a difference to industry, people and the planet.

### FOR FURTHER INFORMATION

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