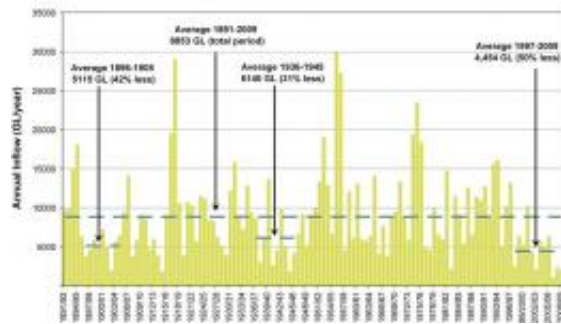


Australia needs better plan for variable water future

September 29 2010



Inflows to the Murray River showing the current drought in the context of longer term water and climate variability. (Murray-Darling Basin Authority)

The delivery of sustainable water supplies in Australia will require water managers and engineers to factor in a range of predicted variations in climate and long-term demand for water resources, according to a CSIRO climate and water expert, Dr Francis Chiew.

“With an expected decline in water availability in parts of Australia comes the need for more reliable quantification of historical and likely future water availability,” Dr. Chiew said today in an address to the Practical Responses to [Climate Change Conference](#) in Melbourne.

“Predictions of future water availability and runoff characteristics are improving rapidly with more data becoming available and with the rapid

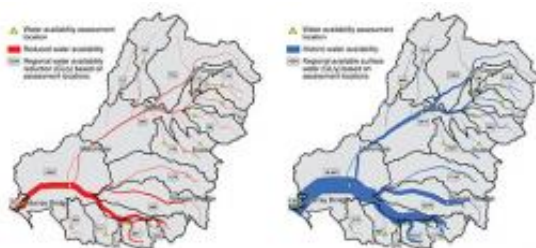
progress in climate and water science.

“However, the range of plausible future projections is likely to remain large.

“Water planning and management decisions always need to consider the balance between risk and rewards, and whether the system can adapt to climate change and other factors affecting water availability such as water interception activities like farm dams, plantations and other types of development.”

Dr. Chiew said tools for estimating climate change impacts on water availability ranged from simple rules of thumb to modelling based on [Global Climate Model](#) projections, downscaling of climate model projections to catchment-scale climate, and hydrological models.

Recent unprecedented low stream-flows recorded in parts of Australia had shown that current water management plans are inadequate to deal with the high variability in [water availability](#), whatever the root cause.



Decline in average annual water availability in the Murray-Darling Basin under a median future climate in 2030 (left) compared with the 20th century average (right), modelled by the CSIRO's Murray-Darling Basin Sustainable Yields project

“There is evidence linking the ‘shift’ in the hydroclimate in the far south-west and south-east of Australia to climate change. However, it is difficult to separate a climate change signal from the high natural variability,” Dr. Chiew said.

“Projections from climate models suggest that southern Australia is likely to be drier on average in the future and that extreme [rainfall](#) events are likely to be more intense in the future. The drier conditions have implications for water security and the more intense [extreme rainfall](#) events have implications for flood design and on related water quality problems, particularly in high-runoff events following long dry periods.”

Climate change represented a major and complex challenge for water planning, but it was not the only challenge.

“Climate change needs to be considered in the context of other drivers such as water interception activities, existing levels of water use and proposed development activities, and the complex interactions between these and a whole range of other factors,” Dr. Chiew said.

Provided by CSIRO

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