

DIALOGUE ON WATER & CLIMATE IN THE MURRAY-DARLING BASIN (AUSTRALIA)

Introduction:

The Murray Darling catchment covers more than one million square kilometers, one sixth of Australia - and includes 24 major rivers. Key issues in the Murray Darling basin in relation to impacts of climate (change) on water management are: biodiversity, salinisation, water quality, rising water tables, water logging and water scarcity.

Estimated changes in stream flow in the east-central Murray Darling basin range from 0 to -20% in 2030 and +5 to -45% in 2070. This would result in water shortages, particularly in winter rainfed systems that are already under stress. This would sharpen competition between different water users, especially where large diversions to river systems are made for industry and irrigation (agriculture). Natural values of wetlands in the Murray-Darling Basin, already affected by dams and irrigation would be placed under even more stress by a decline in rainfall.

Project aim

- To provide better information on the interactions between water management and climatic conditions for land and water management in the Murray Darling basin.

Project activities

- Workshop session with water managers on the Murray Darling case study at the third world water congress of the International Water Association (IWA) in Melbourne (11 April 2002)
- Participation at the HELP Symposium (18-22 August 2002) following after the World Water Week in Stockholm (August 11-17, 2002)
- The Multi-stakeholder workshop took place on 6 September 2002 in Brisbane, Australia as part of the River Symposium



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Photo credits & used literature:

CSIRO, 2001. Climate Change , Impacts for Australia.
www.mdbc.gov.au



COPING WITH WATER & CLIMATE IN THE MURRAY DARLING BASIN: CONCLUSIONS

Some conclusions:

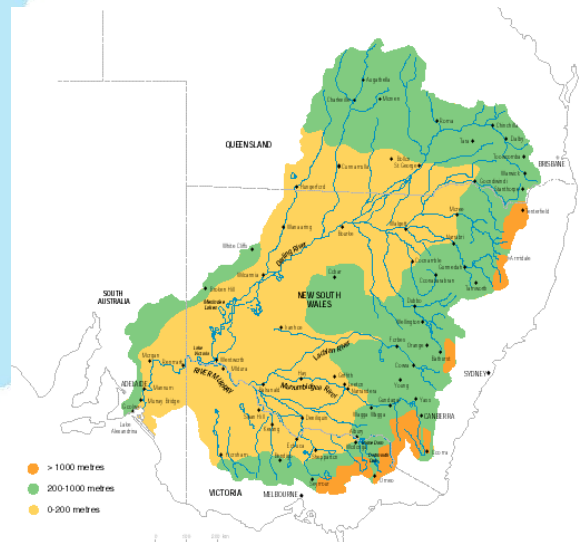
- Integrated management of the MDB water resources, taking into account water requirements for agriculture, municipal use, environment, recreation and others, has to prepare for increasing climate variability and possibly trends of decreasing water availability.
- Tools, such as SWAGMAN, RAINMAN (and the streamflow extension) can help stakeholders to build climate information into risk-based decision making, e.g. by providing seasonal forecasts for water availability to farmers, irrigators and water agencies.
- Most critical climate risks are not so much individual extreme events, but the exceedance of critical thresholds, e.g. water allocation below 50% for more than 5 consecutive years (for irrigation) or water availability below breeding events for more than 10 consecutive years (for bird populations).
- Environmental flows need to be better defined (through ecological benchmarks) and improved in their effectiveness, in order to be accepted by various stakeholders.
- Water trading as practised in the basin for two decades now, has a pilot function for other water-scarce basins, in terms of moving water to highest return value uses.

Next steps

The Murray-Darling Basin Dialogue will be continued in future, e.g. when developing a national initiative on climate research in Australia or the CSIRO Flagship Program "Healthy Country", which has a regional focus on irrigation in the Murray Darling basin.

New integrated science initiatives were recently started, which are partially based on the results of the DWC:

- adaptive irrigation management under global climate change scenarios, and
- understanding long term climate risk to water resources



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