

Drought, water, farmers and the law

By John Cherry

With more than 60% of Australia's land surface currently drought declared, coping with drought is clearly the biggest challenge for the rural sector.

Farming the driest continent with one of the most variable climates on earth inevitably involves dealing with drought. According to the Bureau of Meteorology, major droughts have occurred across much of Australia between 1864–66, 1880–86, 1895–1903, 1911–16, 1918–20, 1939–45, 1963–68, 1972–73, 1982–83, 1991–95 and since 2002.¹ Over the longer term, the Bureau suggests we tend to have three good years and three bad years out of every 10. If the recent statement from the Wentworth Group of scientists is accurate, the trend might be even longer with maybe four decades of dry years and four decades of wet years in every century, and with Australia entering into a dry period.²

The current drought is recognised as the worst drought in recorded history. The economic effect is enormous, reducing farm production this year by upwards of \$6.2 billion and knocking around 0.7% off Australia's economic growth rate in 2006–07,³ with very significant impacts on the grains, beef, cotton, dairy, fruit, vegetable and parts of the sugar cane industries. Increased grain prices are making intensive animal industries (for example, dairy, poultry meat, pork and beef feedlots) less competitive, while residential demand for nursery plants and landscaping services in southern Queensland has fallen by 35% due to water restrictions on consumers, with a direct loss of more than 850 jobs.⁴

More than a third of jobs in rural industry have disappeared in Queensland in this drought—some 39,000 jobs—wiping out the 27,000 new jobs created during the comparatively 'wetter' years between 1995 and 2000.⁵

Farmers have long accepted that normal on-farm risk management needs to include planning for drought.⁶ That means accepting that very often only a small percentage of a water allocation might be delivered in a dry year. But, government policy has also long accepted that farmers cannot be expected to plan for prolonged drought, or what policy calls 'exceptional circumstances' drought. Typically, this is defined as a one in 20 year event.

When the federal government determines that a drought meets the circumstances of being 'exceptional', then the drought declared region becomes eligible for income support and financial assistance. More than 60% of Queensland is currently drought declared under the federal scheme. In 2005–06, 2,301 primary producers were receiving financial assistance out of an estimated 40,000 primary producers state-wide.⁷ This highlights that most primary producers continue to manage the impact of drought. But, as the drought drags on and incomes fall, federal assistance will become more and more important.

Climate change and variability

With the Bureau of Meteorology forecasting a 60% probability of less than median rainfall this summer, this drought is about to enter its sixth crippling year. The drought is also the hottest in Queensland history. 2005 was the hottest year on record in Queensland,⁸ and Queensland has a 70–85% probability of above average temperatures over the coming summer. Average temperatures have increased across Queensland by 0.6–0.9 degrees since 1950, and are projected to rise by 0.3–3.0 degrees by 2030 and by up to 6.0 degrees by 2070, with inland areas rising more rapidly than coastal areas.⁹



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Higher temperatures and lower rainfall mean substantial reductions in run-off and falls in general levels of soil moisture. In south western Australia, Perth's rainfall has dropped 21% in the past eight or nine years, but streamflow into its dams has dropped by a dramatic 64%.¹⁰ With the CSIRO projecting rainfall declines of up to 15% in most parts of Queensland by 2030,¹¹ we are facing very substantial reductions in water availability for urban and rural uses across Queensland and eastern Australia. In 2005–06, 10 out of 23 main Sunwater irrigation schemes delivered less than 50% of farmers' irrigation water entitlements and five delivered less than 20%. By October 2006, 17 of the 23 schemes had less than 35% water shortage levels.¹²

The combination of lower rainfall and higher temperatures will mean very significant changes to the future of agriculture. Less water will mean more competition for available resources. There will also be changes to cropping and grazing industries as a result of a more variable climate, as well as consideration of the potential spread of new pests and diseases and the higher probability of more extreme weather events. Changes to the suitability and productivity of some production areas will also need to be considered.¹³

Implications for water policy and law

Increasing competition for limited water resources raises several issues about law, certainty of entitlements and the assignment of risk. The 2004 Council of Australian Governments agreed to establish a National Water Initiative (NWI)¹⁴ to address some of these issues. The NWI promotes water planning, determination of entitlements of water based on the environmentally sustainable levels of extraction and trading of entitlements as a means of rationing water resources. The NWI establishes water access entitlements separated from land title as an open-ended share of the consumptive pool of a specified water resources as determined by the relevant water plan.¹⁵ Where a system is over allocated, water plans are to bring the system back to sustainable levels. Detailed and hotly debated provisions outline who carries the risk of resulting changes in allocations:

- Water access entitlement holders bear the risk of any reduction arising from seasonal or long-term changes in climate (including drought), and, up to 2014, from

improvements in the knowledge of water systems' capacity to sustain particular extraction levels.

- Beyond 2014, water entitlement holders bear the first 3% reduction in entitlements, with the remainder shared between Commonwealth and state governments.
- Governments bear the risks of any other reduction arising from changes in government policy (for example, new environmental objectives).¹⁶

Following his November 2006 Water Summit, the Prime Minister announced the commissioning of the CSIRO to report by the end of 2007 on sustainable yields of surface and groundwater systems within the Murray Darling basin. He said the study would be 'quite crucial to an understanding of the challenge we have ahead'. Acknowledging the possible impact on allocations, he said:

'I do not believe that people can be dealt with in a way that doesn't involve proper compensation for something to which they're entitled.'¹⁷

Significant changes to sustainable yields will impact on water plans and entitlements, a point acknowledged in the Prime Minister's January 2007 National Plan for Water Security with \$3 billion set aside for buying entitlements and structural adjustment assistance. The government has gone to great pains to state that water entitlements will be respected. However, the plan is particularly concerning for Queensland irrigators who, despite a water planning process that commenced in 1997, still do not have secure tradeable water entitlements determined for much of the state's Murray-Darling catchments. This could place Queensland at a disadvantage if the Prime Minister succeeds in persuading the states to hand over constitutional responsibility for water management in the Murray-Darling to the Commonwealth—a key condition for funding under the \$10 billion 10-year national plan.

Water investments by farmers are by their nature very expensive and very long term, and require a degree of certainty. In 2002–03, irrigators spent more than \$405 million on new irrigation equipment and \$133 million on earthworks. Twenty-eight per cent of irrigators cited uncertainty of water allocation, 26% cited inadequate water availability and 48% cited lack of financial resources as the key impediments to making further changes to irrigation practices, although 44% did intend making further changes in the next year.¹⁸

If Australian irrigation is to improve its water use efficiency to cope with the challenges of climate change and variability, then a degree of certainty of entitlement is crucial. If governments are to move to reduce entitlements to meet new scientific benchmarks on sustainability, then careful consideration needs to be given to appropriate structural adjustment measures to help irrigators use water more efficiently.

Different regulatory approaches

The trailblazing Queensland Government Rural Water Use Efficiency program is an example of the sort of initiative needed to help agriculture adjust to climate variability and change. The first stage of this program (1999–2003) resulted in savings of more than 300,000 megalitres across Queensland rural industries through the provision of targeted incentives, education and training services. The cotton industry improved water efficiency by 12.8% up to 2002, saving the equivalent of 68,000 megalitres.¹⁹ The cane industry generated savings of around 210,000 megalitres, with growers' investments running at a \$3.30-1 ratio to government incentives,²⁰ and the dairy industry achieved an 11% increase in efficiency.²¹ Unfortunately, since then, the program has been pared back significantly. If Australian agriculture is to fully come to terms with the challenges of climate change and variability, then a national program based on the Queensland program but on a much larger scale will be required.

All evidence shows that when it comes to achieving natural resource management policy targets in a landscape farming environment, voluntary measures and incentives will deliver better outcomes than 'command and control' law reforms.²² Voluntary measures can also prove to be more economically efficient in that they give firms greater flexibility in how they achieve environmental improvements.²³ Regulation is likely to be unsuccessful where it does not align landholders' priorities with government objectives,²⁴ and unlikely to be cost-effective in a diffuse environment.²⁵ While water allocations are, of necessity, a legal entitlement that must be defined by law, the irrigator community would much prefer a voluntary approach to achieving water

savings through efficiency measures rather than compulsory acquisition or reduction of entitlements.

Farmers in Queensland have also been exploring with the state government the expansion of industry-led best management practices programs as a means of delivering public policy sustainability and industry profitability objectives. To this end, in March 2005 the Queensland Premier and the Queensland Farmers' Federation signed a memorandum of understanding to promote the adoption of industry-led Farm Management Systems (FMS) programs. The FMS programs have been recognised in the State Water Plan and in the 'Smart State' Economic Strategy as a key initiative in promoting profitable, sustainable farming. In October 2005, the Primary Industries Ministerial Council agreed to assess the feasibility of a national voluntary approach to farm management systems, which could feed into the next round of the Natural Heritage Trust.²⁶

Future directions for the NWI

The extended drought in eastern Australia is raising questions about the adequacy of catchment water planning and the impact of water pricing reforms being implemented under the National Water Initiative. Water resource plans are being prepared progressively in all major Queensland river catchments. But farmers in drought affected areas are now questioning whether these plans will encourage the changes in irrigation systems required to better cope during periods of variable and low rainfall. The reasons for this vary, but, significantly, there is insufficient attention being given to addressing seasonal water sharing arrangements and developing adequate performance monitoring. Demands on both supplemented and unsupplemented systems will increase with growing urban demand for



high reliability supplies and higher rural usage rates with the introduction of water trading. Current water sharing arrangements between urban and rural sectors and between different irrigation users will have difficulty coping with these pressures. Lower than expected rainfall in the future could only exacerbate demand and supply mismatches, which could mean the loss of substantial irrigation production and undermining of the viability of many irrigation areas.

Contrary to the high expectation of some Canberra policy makers, water trading is unlikely to provide great benefits to Queensland agriculture, particularly in the short term. Farmers are facing the costs of water reforms in terms of increased prices and charges, but expected benefits from water trading and efficiency gains are taking considerably longer to achieve. At best, determination and trading of entitlements is at least another five years away for most major Queensland river systems. Tradable entitlements for unsupplemented rural supply will also be more difficult to achieve depending upon local conditions and constraints, including geographic limitation to trading.

Water is the most fundamental input for agricultural production. Modern agriculture is becoming more intensive, and more reliant on irrigation and modern technology. But with climate variability and change, competition for water will become more intense. This will create some significant policy, legal and economic challenges for governments and for industry. Partnership approaches, good science, policy certainty and well crafted structural adjustment programs are needed to ensure that farmers are able to effectively manage the risks of climate change and continue to farm sustainably and profitably across Australia, while ensuring the needs of the environment and urban users are also met.

Endnotes

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