National Drought Policy Review
Climatic Assessment Report

Issue

On Sunday 6 July 2008, the Federal Government released the first report of the National Drought Policy Review – the Climatic Assessment conducted by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Bureau of Meteorology (BoM). The other two reports (the Expert Panel's Social Impact Assessment and Productivity Commission's Economic Assessment) will be released in the coming months.

Background

At the Primary Industries Ministerial Forum in Cairns on 29 February 2008, Ministers agreed that current approaches to drought and Exceptional Circumstances are no longer the most appropriate in the context of a changing climate. On 23 April 2008, the Federal Agriculture Minister announced that the Federal Government would conduct a national review of drought policy (totally separate to the current review of Exceptional Circumstances (EC) declarations in NSW) through three separate investigations, a climatic assessment, a social assessment, and an economic assessment. The terms of reference for these three assessments were released on 19 June.

The Bureau of Meteorology and CSIRO were asked to assess:

a) Likely changes to temperature regimes over the next 20-30 years across significantly sized regions;
b) Likely changes in the nature and frequency of severe rainfall deficiencies over the next 20-30 years;
c) The likely effect of projected climate changes on integrated measures of drought over the same period;
d) The place of past exceptional climatic events in the context of the likely frequency and severity of future climatic events.

As such, BoM and CSIRO were asked to comment on the appropriateness of the current one-in-20-25 year Exceptional Circumstances (EC) event trigger based on the historic record.

Public Consultation

Whilst extensive public consultation is being undertaken as part of the other two aspects of the national drought policy review, there was unfortunately no public consultation process as part of the climatic assessment. Submissions were not invited, and rural industry's drought, hydrological and irrigation experts were not afforded an opportunity to have input to the process.

Key Findings

- The assessment looked at the incidence and likelihood of exceptionally hot years, exceptionally low rainfall and exceptionally low soil moisture.
- Drought "has been formally recognised as a natural characteristic of Australia's variable and changing climate" and "successful management of climate risk is recognised as a definitive characteristic of farming excellence".
- There are four types of drought; meteorological, agricultural, hydrological and socio-economic, and "rainfall deficiency is just one of the ways in which drought can be defined".
- Australian average annual mean temperatures have increased by 0.9 degrees Celsius since 1910.
- On average, exceptionally high temperatures are likely to occur every 1-2 years, over the period 2010-2040. (NB: this does NOT mean droughts are likely to occur every 1-2 years).
- If rainfall were the sole trigger for EC declarations, under the high projected scenario, EC declarations are likely to be triggered about twice as often and over double the area.
- If soil moisture were the sole trigger for EC declarations, under the high projected scenario, EC declarations are likely to be triggered about twice as often.
- The existing 1 in 20-25 year EC trigger is not appropriate under a changing climate. However, the authors acknowledge that the alternate models they looked at for a trigger were "shown to result in no useful improvement", and as such, they go so far as to say that future drought policy "may be better served by avoiding the need for a trigger at all".

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Key Findings (cont'd)

- Farmers and suppliers need user-friendly, reliable and up-to-date location-specific information on historical climatic conditions and future climate variability, including participatory studies; improvements of drought monitoring capability; online climate information systems; improved research and longer-term detailed analyses of projected changes in exceptional climatic events.
- Overall trends in exceptionally low rainfall are not as strong as the trends in exceptionally high temperatures, however, this data is important when considering hydrological droughts.
- There are 'uncertainties associated with the historical data and the climate projections', with the temperature data having the lowest uncertainty; the rainfall data having a higher uncertainty; and the soil moisture data having the least reliability. There are "no trends in exceptionally low soil moisture for the fifty years of available data".

NSW-Specific Findings

- The frequency and extent of exceptionally hot years and exceptionally dry years are likely to increase. By 2010-2040 exceptionally hot years are likely to affect about 60% of the region and occur every 1.6 years on average. For the period between 1900-2007, exceptionally hot years have on average affected 4.5% of the state and occurred about once in every 22.2 years.
- By 2010-2040, no change is likely in the frequency or extent of exceptionally low rainfall years. For the period between 1900-2007, low rainfall has on average affected 5.6% of the state and occurred about once in every 18 years.
- By 2030, exceptionally low soil moisture years are likely to affect about 7% of the region and occur about once every 14 years on average. For the period between 1900-2007, low soil moisture has on average affected 6.3% of the state and occurred about once in every 16.4 years.

Association Concerns

- The Association is concerned that whilst the Terms of Reference (TOR) refer to the nature and frequency of severe rainfall deficiencies, they do not appear to allow scope for the consideration of the timing and nature of rainfall events. The Federal Government's own National Rural Advisory Council depends on this information in assessing applications for regional EC declarations, so it is unclear why this has not been factored into the TOR.
- The Association is also concerned that the assessment is so reliant upon models and does not include detailed hydrological and irrigation perspectives via industry experts. It is important to consider all aspects of drought in order to provide a better understanding of the nature of a hydrological recovery from drought (particularly important for intensive and irrigated agriculture), as well as the traditionally utilised agronomic recovery.
- The Association is extremely concerned by the inaccurate reporting of the report in the media, causing undue stress and confusion and having little regard for the concerns of rural communities, particularly given the ongoing, but unrelated, review of EC declared areas.

Where To From Here?

- The Association is writing to the Federal Minister for Agriculture, Fisheries and Forestry, the Hon Tony Burke, to outline the above-listed concerns in detail.
- The Association will be using its submissions in response to both the social impact assessment and economic assessment to highlight the interconnectedness of all three aspects of the review, including the climatic assessment, in particular, the need to adopt a solutions-focused approach to future risk management activities associated with climate variability.

Further Information

ⓘ http://www.daffa.gov.au/agriculture-food/drought/national_review_of_drought_policy