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Drought in Australia

Context, policy and management

Research by the Australian Bureau of Agricultural and Resource Economics and Sciences

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List of acronyms

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ABS	Australian Bureau of Statistics
BoM	Bureau of Meteorology
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
EC	Exceptional Circumstances
ECIRS	Exceptional Circumstances Interest Rate Subsidies
ECRP	Exceptional Circumstances Relief Payment
FMB	Farm Management Bond
FMD	Farm Management Deposit
IEDs	Income Equalisation Deposits
MDB	Murray–Darling Basin
NAMS	National Agricultural Monitoring System
NDP	National Drought Policy (1992)
OECD	Organisation for Economic Cooperation and Development
PIMC	Primary Industries Ministerial Council
PC	Productivity Commission
RAS	Rural Adjustment Scheme
RFCS	Rural Financial Counselling Service
SP	Social Panel

Summary

The Countermeasures for Addressing Long-lasting Severe Drought in Australia and China project is funded under AusAID's Australia China Environment Development Partnership. The project aims to improve policies and countermeasures for severe drought in China and Australia and build partnerships that increase the capacity of experts and officials.

This report is one of a series of reports for the project that explore the context, policy and management of drought and water resources in China and Australia. The reports will contribute to a plan for collaboration between the project partners: ABARES and China's Remote Sensing Technology Application Center. This report details the Australian context of drought policy and management.

Globally, governments have developed comprehensive responses to the impacts of drought and other extreme climate events, but have struggled to effectively address the risks.

Agriculture in Australia has had a long history of dealing with drought. Australian farmers manage drought in a number of ways, including diversifying their production risks, building reserves for when conditions are unfavourable and increasing or decreasing their production based on climatic conditions. However, there are times when severe drought is considered by government to be outside of the scope of 'normal' risk management. In these 'exceptional circumstances', government intervention may be warranted in order to keep viable farmers on the land. Defining what is exceptional and what is normal climate variation is itself a challenge, particularly in the context of a changing global climate.

In 2008 a review of the National Drought Policy identified components of the policy that were not encouraging farmers to adopt better risk management strategies for dealing with drought in the long-term. The review found that most farmers in drought-declared regions were sufficiently self-reliant to manage climate variability.

Based partly on the findings of the review, a pilot of drought reform measures is being undertaken in Western Australia. The pilot started in July 2010 and continues until June 2012.

The objectives of the current 1992 drought policy remain relevant, but each of the different objectives has received different emphases by government over time. Because of the inherent variability in agricultural production systems and the unpredictability of when and where droughts occur, it appears that a flexible approach is required to determine when to intervene, when to retract, and which aspect of the policy to support. Likewise, the information required by producers and governments changes with changing circumstances.

Government has a role in encouraging better risk management, but also in providing information for use by farmers, decision-makers and other stakeholders. Recognising that most farmers are not reliant on government support during droughts, government may have a role in supporting viable farmers during the worst droughts.

1 Project background

The Countermeasures for Addressing Long lasting Severe Drought in Australia and China project is funded under AusAID's Australia–China Environment Development Partnership (ACEDP).The ACEDP is a five-year, $25 million Australian Government initiative, which aims to facilitate enduring partnerships between Australian and Chinese agencies engaged in national environmental policy development and implementation through a combination of high-level policy dialogue, capacity building measures and collaboration on discreet activities that demonstrate good environmental governance.

The objectives of the Countermeasures for addressing long lasting severe drought in Australia and China project are to:

- improve polices and countermeasures toward long lasting and severe drought to realise sustainable water resources management
- develop partnership arrangements between similar Australian and Chinese agencies
- increase capacity of officials and experts involved in these activities to implement new policies and countermeasures.

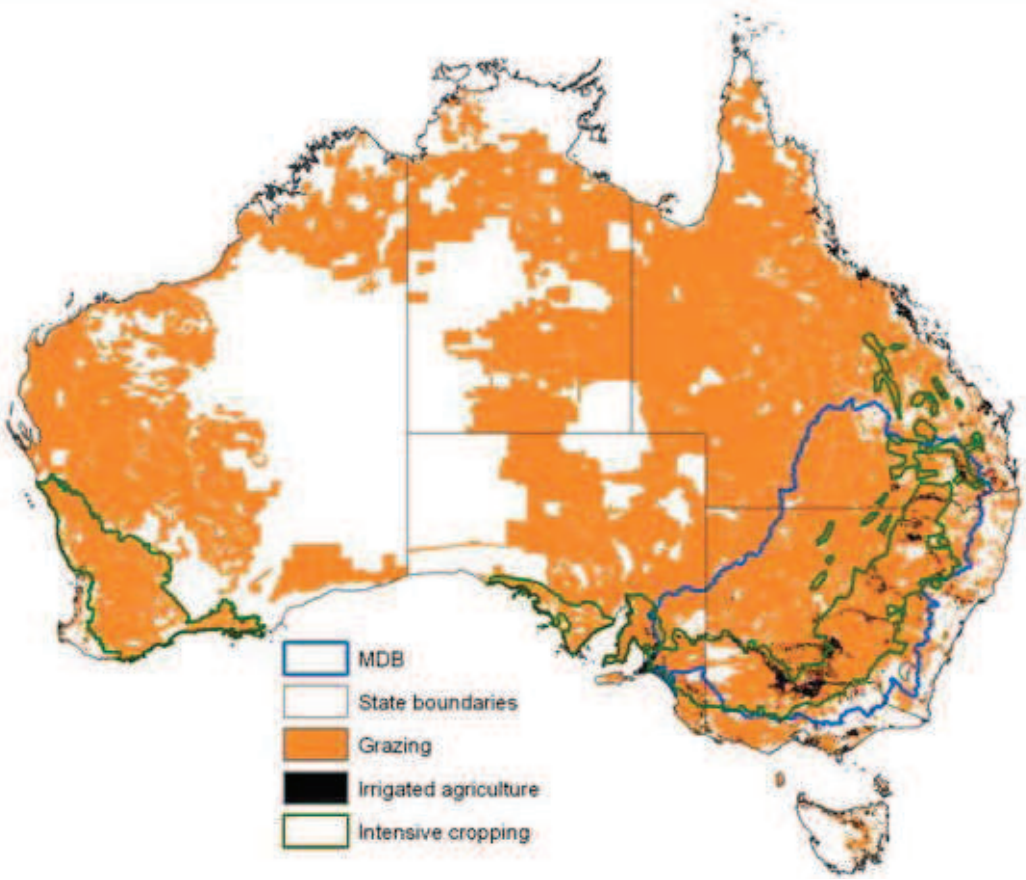
This report is one of a series of reports that explore the context, policy and management of drought and water management in China and Australia. The series examines important differences and similarities in the way drought and water is managed in the two countries, including how different agricultural management practices and food security issues lead to different management paradigms. The series contributes to a plan for collaboration between the project partners; ABARES and China's Remote Sensing Technology Application Center. This report explores the context of drought in Australia, the evolution of Australian drought policy and the role of government in providing information to help manage climate risks.

2 Agro-climatic context

Australian agricultural production systems are diverse and include cropping systems, pastoral systems and mixed farm enterprises. . Common to these farming systems is the need to manage financial, environmental and social risk. At the tactical level, the major management focus is typically on short-term production and profitability. However, when making decisions managers often consider longer-term resource conservation, economic, political and lifestyle influences (Blacket 1996; Hammer 2000: 51–65). A major risk factor that affects the biophysical, socioeconomic and political systems is climate variability (Hammer 2000: 51–65).

Australia has the lowest rainfall, and one of the most variable rainfall patterns, of all inhabited continents. Climate variability is one of the greatest sources of risk for Australian agriculture (Kimura & Antón 2011). Climate variability exposes decision-makers to considerable risk, because outcomes of decisions—such as crop rotation decisions, marketing strategies, infrastructure investment, and policy decisions that affect ecosystem management—cannot be accurately predicted. In addition, current production systems may need to change substantially in response to the changes in climatic extremes that are expected to result from climate change and that have already been observed in some regions of Australia. Despite the challenges of farming in Australia, agricultural activities cover about 60 per cent, or 4.5 million km^2, of the continent, much of it in the dry, semi-arid rangeland regions (Figure 1). Only around 0.4 per cent of agricultural land in Australia is irrigated.

Figure 1 Distribution of agricultural industries in Australia



MDB = Murray–Darling Basin

3 History of drought

Australian agriculture operates in a highly unreliable climate (Laughlin & Clark 2000; Stone & de Hoedt 2000: 67–75), which is characterised by frequent floods and intense, widespread droughts. These climatic extremes affect all types of agricultural production and present a challenge that farmers must manage if they are to remain viable. Despite a relationship between El Niño events and drought in Australia, not all drought events are El Niño related. El Niño events generally occur every two to seven years (Cane 2000: 29–50; Meinke & Stone 2005). El Niño events typically result in severely reduced rainfall in winter and spring, particularly across eastern Australia where the majority of high-density cropping and livestock husbandry is practised.

A drought can be defined as a prolonged, abnormally dry period with insufficient water for users' normal needs (BoM 2011). Meteorologists monitor the extent and severity of drought in terms of rainfall deficiencies, while agriculturalists rate the impact on primary industries. Drought disrupts cropping programs, reduces breeding stock and threatens permanent erosion of the capital and resource base of farming enterprises.

Research indicates that severe drought affects some part of Australia on average once every 18 years (BoM 2011). While some droughts are long lived others are short and intense, causing significant damage (Table 1). Some droughts are localised, with other parts of the country enjoying plentiful rain. Some regional droughts are not related to El Niño events, and are therefore harder to forecast.

Table 1 Distribution and impacts of historic droughts in Australia

2002–07	Winter crop production declined sharply in 2002–03 and, after recovering, declined again in 2006–07. Murray–Darling Basin inflows were the lowest on record, severely affecting irrigated agriculture.
1991–95	Particularly dry in parts of Queensland, northern New South Wales and central Australia. Average production by rural industries fell by about 10 per cent, leading to a possible $5 billion cost to the Australian economy. The Commonwealth Government provided $590 million of drought relief between September 1992 and December 1995.
1982–83	One of the most intense and widespread droughts on record, with a total loss of over $3 billion.
1972–73	Mainly in eastern Australia.
1963–68	Widespread drought, the last two years of which saw a 40 per cent drop in wheat harvest, a loss of 20 million sheep and a decrease in farm income of $300–600 million.
1939–45	The Forties Drought. Loss of nearly 30 million sheep between 1942 and 1945. 1940 was one of the driest years on record across southern Australia.
1918–20	Most parts of Australia in drought.
1911–16	Loss of 19 million sheep and 2 million cattle.
1895–1903	The Federation Drought saw several years of generally below average rainfall followed immediately by one or two years of exceptionally low rainfall. Australia's most devastating drought in terms of stock losses, with sheep numbers halved and more than 40 per cent of cattle lost.
1880–86	Southern and eastern states affected.
1864–66	All states affected except Tasmania.

Source: Bureau of Meteorology

4 Managing the risk of drought

Drought policy in Australia can be traced back to the early 1900s, with the focus of support changing over time, from 'drought proofing' through irrigation to direct financial assistance to help primary producers through hard times. Before 1992 the Australian Government did not have an explicit drought policy and assistance to affected producers was provided through a natural disaster relief program. However it was recognised that treating drought as a disaster did not encourage good risk management practices by farmers.

The 1992 National Drought Policy shifted the emphasis away from drought being classified as a natural disaster and towards that of a normal component of the operating environment. Drought and, more broadly, climate variability were seen as an inherent business risk that producers needed to manage, as they would any other potential risk. This shift in thinking was intended to create a setting in which drought was considered a normal part of the Australian farming environment, with the core principle being to encourage producers to adopt self-reliant approaches for managing climatic variability and to prepare for drought.

The second objective is consistent with sustainable farming practices such as conservation tillage, native vegetation management and soil retention, and is often addressed through natural resource management programs.

While acknowledging the principles of self-reliance, the 1992 National Drought Policy also recognised that there would be circumstances that were beyond the ability of farmers to manage alone (White & Walcott 2009). In these 'exceptional circumstances', governments could provide assistance to support otherwise viable farm enterprises through periods of 'severe downturns' in income, in effect underwriting the risks from droughts. This policy was enacted through legislation, including the *Rural Adjustment Act 1992* and the *Farm Household Support Act 1992*.

Under the 1992 National Drought Policy, a number of assistance programs were introduced, including the Rural Adjustment Scheme, which offered grants and interest rate subsidies and the Drought Relief Payment, which provided income support for farmers within EC declared areas. In 1997 these programs were replaced by Exceptional Circumstances (EC) Interest Rate Subsidies and the EC Relief Payment.

The National Drought Policy provides a number other assistance programs that do not require the activation of EC assistance measures to be accessed, including, the Rural Financial Counselling Service and Farm Management Deposits scheme.

5 Role of government

Although climate risk management in agriculture is ultimately the responsibility of farmers and agribusinesses, the public sector has a key role to play in developing policy that addresses both information inadequacies and gaps or failures in current risk management strategies. Ideally government should adopt a holistic approach to policy development by considering not only the specific risk addressed by a given policy, but also the effects of the policy and links with other related risks (OECD 2009).

Australian farmers manage drought in a number of ways, including diversifying their production risks, building reserves for when conditions are unfavourable and increasing or decreasing their production based on climatic conditions. However, there are times when severe drought is considered by government to be outside of the scope of 'normal' risk management. In these 'exceptional circumstances', government intervention may be warranted in order to keep viable farmers on the land. Defining what is exceptional and what is normal climate variation is itself a challenge, particularly in the context of a changing global climate.

Australian drought policy has historically provided income support and interest rate subsidies to farmers and agribusinesses affected by droughts (Kimura & Antón 2011). However, the treatment of droughts as ‘exceptional’ may delay the development of farm systems that are adaptive and resilient to changing climate risks and encourages risky practices, such as overstocking (Nicholson et al. 2011).

An important Australian Government initiative has been to move away from a crisis management approach for droughts to an increased emphasis on climate risk management. This initiative focuses on enhancing the ability, preparedness and responsibility of farmers to manage climate risks.

In its 2009 review of government drought support measures the Productivity Commission recommended that governments should commit to a long-term reform path that recognises that the primary responsibility for managing risks, including those from climate variability and change, rests with farmers (Productivity Commission 2009). However, government has a role to play in facilitating access to appropriate information to support risk management and decision-making (Productivity Commission 2009). To this end, research, development, extension, professional advice and training to improve farmers’ business management skills and build self-reliance warrant government funding where they deliver a demonstrable community benefit.

Farmers and their suppliers need user-friendly, reliable and up-to-date location-specific information on historical climatic conditions and future climate variability (Hennessy et al. 2008). Key requirements include information on the risk of drought at timescales from within seasons to decades, with specific needs including improvement of drought monitoring capability and online climate information. Provision of information and tools for the decision-making process is integral to the consistent and transparent implementation of drought management policy and programs (Nicholson et al. 2011).

The rationale for governments needing to fund development of tools for use at an individual level is less clear than the need for the underlying information. However, these tools can increase the efficiency and competitiveness of the agricultural sector, providing an important justification for the role of government. These tools often have multiple benefits, such as providing support for natural resource or water management. In collaboration with government,

industry groups have historically provided funding for development of specific tools that can be used at the individual farmers' level.

6 National Drought Policy

The current 1992 National Drought Policy is focused on sustainable, long-term profitability at the farm level, based on structural adjustment and productivity growth.

The objectives of the National Drought Policy are to:

- encourage primary producers and other sections of rural Australia to adopt self-reliant approaches to managing for climatic variability
- maintain and protect Australia's agricultural and environmental resource base during periods of extreme climate stress
- ensure early recovery of agricultural and rural industries, consistent with long-term sustainable levels.

A series of programs have been developed to support the objectives of the National Drought Policy. The intent of the programs, outlined below, is to encourage producers to prepare and manage for the inherent climatic risks and variability, consistent with the principles of the National Drought Policy.

Farm Management Deposits

Farm management deposits are a financial risk management tool for farmers to help smooth the uneven income streams that are common in agriculture due to climate and market variability.

The Farm Management Deposits (FMD) scheme encourages individual farmers to set aside pre-tax income in good years for use in low-income years. Farm management deposits provide tax benefits if kept for at least 12 months. Eligible farmers in Exceptional Circumstances declared areas may be able to access their FMDs within 12 months, while retaining the tax benefits of the scheme.

The cap on deposits is $400 000 and the non-primary production income test is $65 000. Eligibility requirements determine if and when the deposits can be withdrawn.

Tax relief

The Australian Taxation Office can help people affected by drought by:

- allowing more time to pay tax debts without incurring interest charges, or
- arranging for tax debts to be paid in instalments without interest charges.

In special circumstances, the Commissioner for Taxation may release individuals from payment of income tax, fringe benefits taxes and some other taxes where it is shown that payment would cause serious hardship. The Australian Tax Office looks at circumstances case by case.

Other taxation measures and concessions available to drought-affected farmers include:

- farm management deposits (outlined above)
- profit from the forced disposal or death of livestock

- proceeds from double wool clips
- insurance recoveries
- deductions for water facilities and natural resource conservation operations.

Rural financial counselling

The Rural Financial Counselling Service (RFCS) provides free, impartial and confidential financial counselling to help farmers, fishers and agriculture-dependent small businesses.

While not specifically targeting drought assistance, the RFCS program aims to provide information and support to people in rural Australia by improving access to services.

Rural financial counsellors across Australia:

- help clients identify financial and business options
- help clients negotiate with their lenders
- give clients information about government and other assistance schemes
- refer clients to accountants, agricultural advisers and educational services
- refer clients to professionals for succession planning, family mediation and personal counselling.

Rural financial counsellors do not provide financial advice, succession planning or family, emotional or social counselling.

Social and emotional counselling

People suffering stress or personal difficulties as a result of the drought, or anyone who is concerned about a friend or family member in that situation, can contact a counsellor who will assist them with free personal counselling.

The Family Relationship Services Program funds organisations to provide face-to-face confidential and personal counselling and support to drought-affected families and individuals.

Centrelink psychologists and social workers also provide face-to-face counselling through Centrelink's customer service centres.

In addition, Centrelink's social workers provide a telephone counselling service through the Drought Assistance Hotline.

There are a range of other services available including employment services and assistance for isolated children (see www.daff.gov.au/drought for more information).

Whole-farm planning

The widespread adoption of whole-farm or property-management planning is a major vehicle for improved risk management, productivity growth and sustainable development.

Property-management planning allows the integration of management strategies for the physical, financial, marketing and farming practices of individual properties. Through the use of tools such as land-capability assessments, farm budgets, marketing plans and decision support systems, farm plans allow producers to identify the elements of risk within their businesses and take steps to minimise their impact.

Education and training

While many farmers are already engaged in effective risk management and drought-preparedness activities, there is scope to provide opportunities for farm managers to upgrade their skills and learn new techniques.

Farmers have access to information, education and training materials, courses and facilities that will increase their capacity to manage risk and implement whole-farm planning.

Research and development

Research, development, demonstration and delivery are important elements of the policy package for improved management in a risky environment. Further, research and development can contribute to ameliorating the physical, economic and social effects of drought in the longer term.

Drought research for a profitable and sustainable rural sector is wide ranging and includes whole-farm management systems that integrate climate prediction, technical, biological and financial information; control strategies for weeds and pests; socioeconomic factors and the needs of rural communities and farm families in times of stress; and research on on-farm and off-farm investment strategies for farmers.

Rural communities

Strong, resilient rural communities are important to the future of the rural sector. There are a number of Commonwealth and state programs in place to the meet the economic and social needs of rural communities, including non-farm businesses. Social support programs include emergency relief, health care and financial and personal counselling. States also have complementary programs aimed at assisting rural families and communities to adjust.

Resource management

The growth and prosperity of a farm depends on the resource base of the enterprise. Under the Rural Adjustment Scheme, sustainable development principles are applied to managing for drought and farm planning, including financial planning and risk management.

Water management is critical to both drought management and ecological sustainability. The trend towards greater cost recovery-charging and transferable-entitlement policies for water encourages better water management, including during drought, by those with access to irrigation water. For those outside irrigation areas, tax incentives exist to encourage the storage and distribution of water.

7 Exceptional Circumstances

While acknowledging the principles of self-reliance, the National Drought Policy recognises that there are extreme events beyond the ability of farmers to manage (White & Walcott 2009) and in these exceptional circumstances government can provide assistance to farmers.

The criteria for EC events are:

- the event must be rare and severe and of a scale to affect a significant proportion of farm businesses in a region
- the event must result in a severe impact on farm production and income, and that the downturn in income is not a result of other issues, such as market prices
- the event must not be predictable or part of a process of structural adjustment.

The original framework for assessment of EC as defined in 1995 was based on six core criteria (White et al. 1998):

- meteorological conditions
- agronomic and stock conditions
- water supplies
- environmental impacts
- farm income levels
- scale of the event.

Exceptional Circumstances is declared when the combined impact on farmers was a rare and severe occurrence, with meteorological conditions as the threshold condition. The threshold condition is assessed in terms of effective rainfall and involves a rare and severe event; rare being a one in 20–25 year event and severe being either more than 12 months duration or at least two consecutive failed seasons, depending on the nature of the production systems being considered. Although most commonly enacted as a result of a rare and severe drought, EC events may include a combination of events such as drought and frost.

Key to the decision-making process is the involvement of the National Rural Advisory Council, an independent body comprising agribusiness professionals who assess and help verify the on-ground conditions in a region. In assessing an EC application, the Australian Government considers the scientific and economic advice provided by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES). ABARES is a research bureau within the Department of Agriculture, Fisheries and Forestry that provides professionally independent research, analysis and advice to inform decision-makers on current and future policy challenges affecting Australia's primary industries.

The ABARES advice includes a scientific assessment of the rarity and severity of a meteorological event and an analysis of the event itself, including the effectiveness of rainfall and the impact it has or will have on specific production systems within a region. ABARES economic information is used to assess the impact on farm production and income.

ABARES draws on data supplied by government agencies, such as the Bureau of Meteorology, the Australian Bureau of Statistics and state agriculture departments; models such as soil moisture and crop and pasture growth; satellite-derived data, such as vegetation greenness anomalies; and economic farm survey data from the ABARES Australian Agricultural and Grazing Industries Survey.

EC assistance is available for up to two years, with a review undertaken before the declaration period expires. If a region is EC declared, farmers within it are eligible to apply for assistance measures, outlined below.

Interest rate subsidies

In times of exceptional downturn, interest rate subsidies may be provided jointly by the states and the Commonwealth. Eligible farm businesses are those temporarily in severe financial difficulties, profitable in the long term, but can only access commercial finance if the interest is subsidised.

Income support

Support is provided for farmers unable to meet basic living expenses and small businesses that rely on farmers for their income.

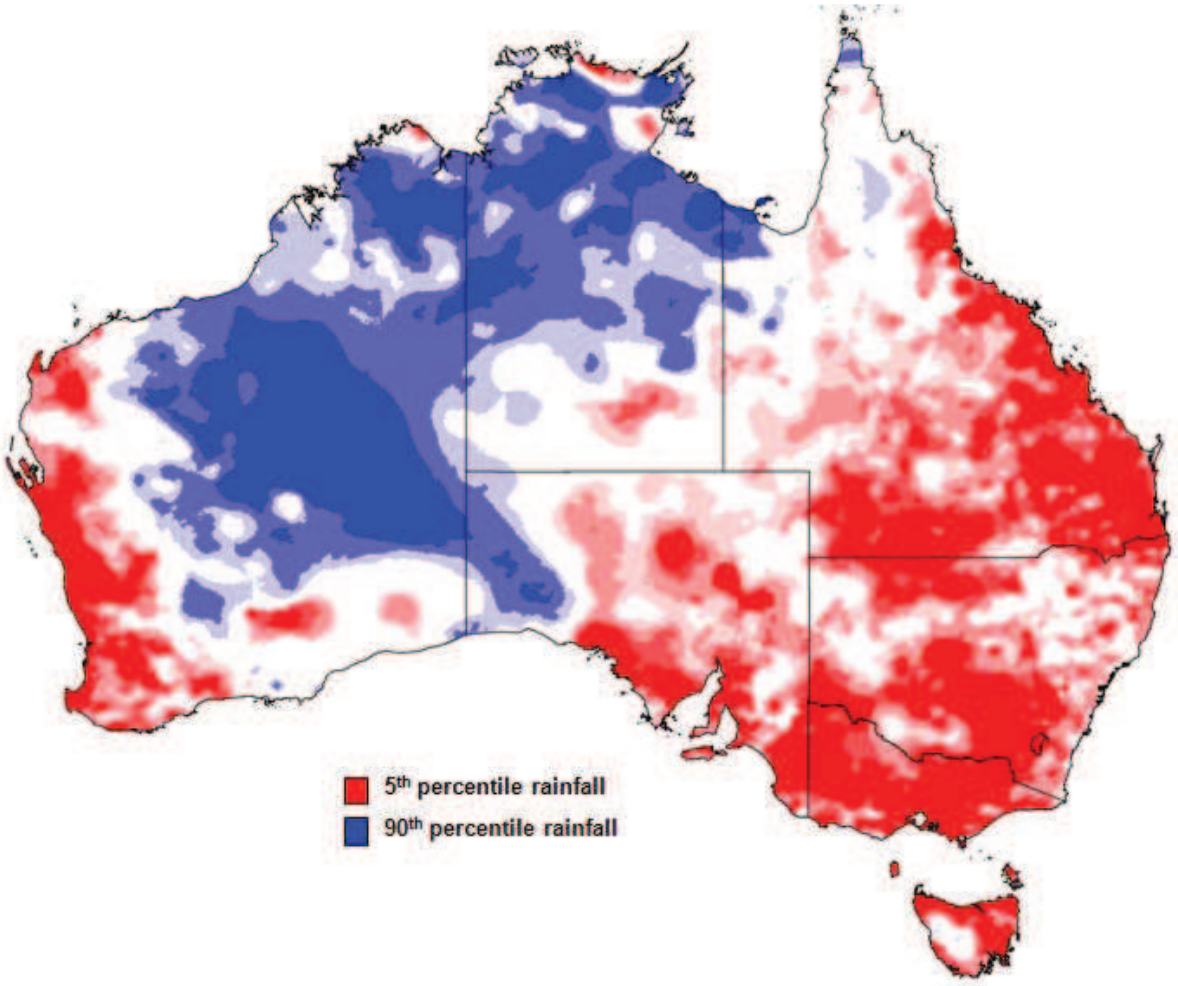
The interest rate subsidies and income support provide coverage of assistance for adjustment/productivity growth; for support in situations of exceptional downturn, whether brought about by drought or other factors; for improving farmers' skills; and for extreme financial hardship.

8 Drought policy review and reform

Australia experienced one of its most severe droughts on record between 2002 and 2007. The drought was most severe, in terms of geographic extent and rainfall deficit, between March 2002 and January 2003 and covered most of Australia's agriculturally productive regions. The most important agricultural regions generally experienced severely deficient (5th percentile) rainfall, with a number of regions recording their lowest rainfall on record.

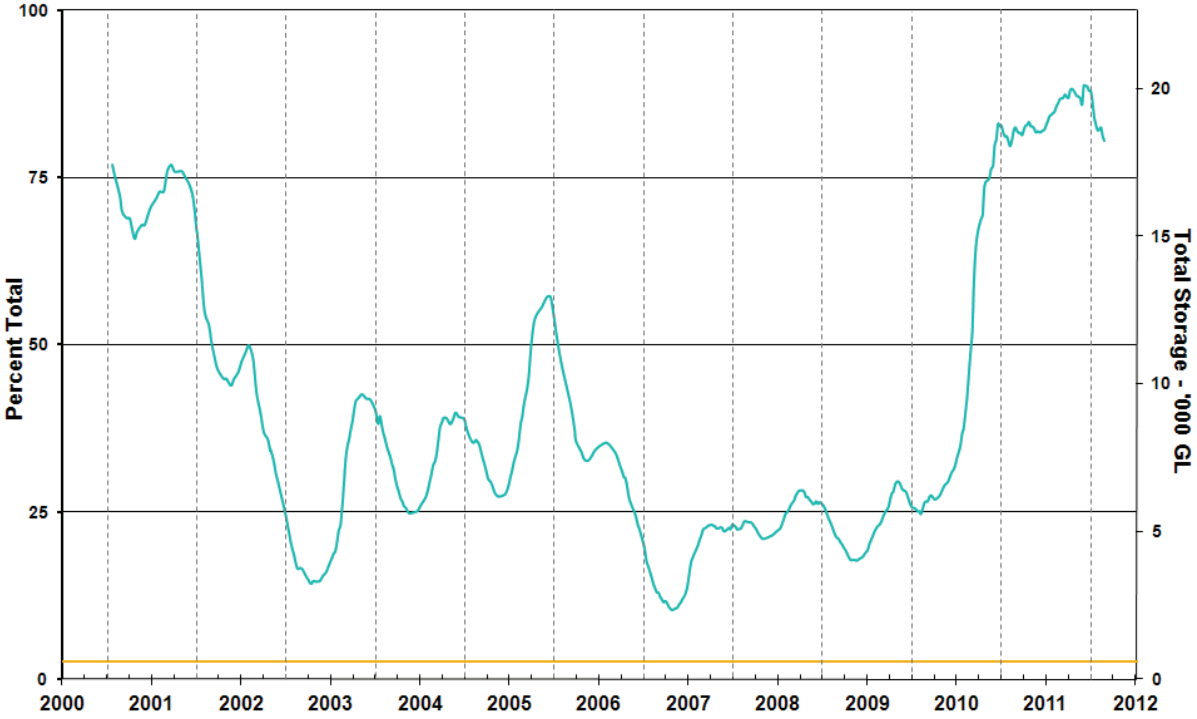
The 2002–07 drought was actually two separate droughts (2002–03 and 2006–07), each of about 12 months duration, which resulted from two separate El Niño events. Crucially, there was no significant wet period between the two events to alleviate the rainfall deficiencies (Figure 2). Not only did the 2002–07 drought significantly reduce farm production during the event, but ongoing effects continued to be felt in many regions following the return of 'normal' rainfall patterns. For example, soil moisture was severely depleted in many areas and, by mid-2010, water storages had not returned to pre-drought levels. Irrigated industries that rely on water storages were particularly affected as major reservoirs in the Murray–Darling Basin, Australia's most important irrigation region, fell to 17 per cent of capacity in 2003 and remained below pre-drought levels until late 2010 (Figure 3).

Figure 2 Rainfall percentiles indicating the spatial distribution of the 2002–07 drought



Source: Bureau of Meteorology

Figure 3 Water storages in the Murray–Darling Basin



Source: ABARES, Available Water Determinations Register, Department for Water (South Australia), NSW Office of Water, NSW Water Information, Seqwater, SA Water, Snowy Hydro, Sunwater

The 2002–07 drought resulted in a record number of applications for EC assistance, with around 70 per cent of Australian agricultural land receiving some level of support by 2007. Because of the persistence of the drought, additional measures were developed to provide ongoing support to regions that had not recovered from the impacts of the drought after their initial two years of support came to an end. Assistance packages included exit grants for farmers who had been affected by extreme events and who wished to sell their property. Support was also available in the form of advice and retraining. By mid-2010 the Australian Government had paid approximately $4.4 billion in direct drought assistance to affected farmers.

The 2004 review of the National Drought Policy

Following the onset of the 2002–07 drought, a series of national drought workshops were held with stakeholders to discuss the efficiency of the measures dealing with drought and to consider improvements to the delivery of drought assistance. One of the issues raised was that the system of applying for EC support was complex and time consuming and often led to support being provided well after the worst impacts of the drought had been experienced.

Stakeholders also felt that the application process was cumbersome and that the state and territory governments preparing the applications didn't have access to consistent data and information. This meant that before the Australian Government could assess an EC application, it spent substantial time and resources analysing and verifying the integrity of the data being used in the application, leading to further delays.

To address these concerns, Australian agricultural ministers, through the Primary Industries Ministerial Council (PIMC), agreed to develop a national monitoring system to assist in the development of EC applications and to facilitate decision-making for government intervention

and policies related to drought and other climate impacts. It was envisaged that such a system would provide an agreed set of data for use by both the EC applicants and assessors, and that these data would be readily available via the internet.

National Agricultural Monitoring System

ABARES undertook the design, development and ongoing service delivery of the National Agricultural Monitoring System (NAMS) to meet the agreed PIMC objectives. The rationale was to automate the creation of a report that formed the basis of an EC application via the internet. The intent was to streamline the application and assessment process for EC through the online collation of agreed and nationally consistent datasets.

The NAMS reduced the time and cost of assessments and made the process publicly transparent and equitable. NAMS provided up-to-date climatic and production information that helped identify regions that might be coming into drought, and also provided climatic and production information that could be used by decision-makers and producers to better prepare for and manage climate risks. This addressed the key issue of many producers not being fully aware of the variability in climate for their locality (White & Karsies 1999).

The National Agricultural Monitoring System website streamlined the Exceptional Circumstances application process by producing reports with a complete set of contextual, climatic, production and economic analyses (Bruce et al. 2006). State and territory governments added their own interpretive text to these analyses and additional supporting information. The strength of this approach was the standardisation of the analyses used for all applications and the transparency of the process through public access to the analyses used (Leedman et al. 2008).

The 2008 review of the National Drought Policy

In early 2008, the PIMC met specifically to consider further improvements to the National Drought Policy in the context of responding to climate change, enhancing productivity and improving market access. Ministers agreed that current approaches to drought and EC were no longer the most appropriate in the context of a changing climate and agreed to improve the policy to create an environment of self-reliance and preparedness, and to encourage the adoption of appropriate climate change management practices.

A comprehensive review of the National Drought Policy was undertaken, comprising three separate assessments (DAFF 2011):

- an economic assessment of drought support measures by the Productivity Commission (Productivity Commission 2009)
- an assessment by an expert panel of the social impacts of drought on farm families and rural communities (Drought Policy Review Expert Social Panel 2008)
- a climatic assessment by the Bureau of Meteorology and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) of likely future climate patterns and the current EC criteria of a one in 20–25 years event (Hennessy et al. 2008).

A key finding of the economic assessment was that the National Drought Policy's EC declarations and related drought assistance programs have not helped farmers improve their self-reliance, preparedness and climate change management. Most farmers are sufficiently self-reliant to

manage climate variability, with about 70 per cent of farms in drought-affected areas receiving no assistance.

The panel set up to assess social aspects (Social Panel) noted that existing policy responses were not working in all cases and that EC policy had created feelings of division and resentment. The Social Panel considered that there is a role for governments and that future policy should seek to move people towards an acceptance of, and planning for, drought (Drought Policy Review Expert Social Panel 2008).

The climatic assessment (Hennessy et al. 2008) indicated that observed trends in exceptionally low rainfall years are highly dependent on the period of analysis, due to large variability between decades. If rainfall were the sole trigger for EC declarations, then the mean projections for 2010–40 indicate that more declarations would be likely, and over larger areas in some parts of Australia. Projected increases in the geographic extent and frequency of exceptionally low soil moisture years were slightly clearer than those for rainfall. If soil moisture were the sole criterion for EC declarations, then the mean projections indicate that more declarations would be likely by 2030. The climatic assessment further indicated that the current EC trigger, based on historical records, has already resulted in many areas of Australia being drought declared in more than 5 per cent of years, and that the frequency and severity of droughts are likely to increase. The principal implication of the findings of this study is that the existing drought trigger is not appropriate under a changing climate (Hennessy et al. 2008).

Drought reform pilot

In response to the 2008 review of the National Drought Policy, the Australian Government, in partnership with the Western Australian Government, implemented a pilot of drought reform measures in part of Western Australia in July 2010. The program will run until June 2012.

The pilot is testing a range of measures that are designed to help farmers move from a crisis management approach to a risk management approach, and to better support farmers prepare for future challenges. A key aspect of the drought reform measures is training for farmers to help them prepare strategic business plans that integrate risk management and preparedness. Grants are also available for strategic plan activities that help farm businesses prepare for the impacts of drought, reduced water availability and a changing climate, and for activities with a natural resource management focus that have broader public benefits. The pilot will continue until June 2012 and has recently been reviewed by an independent panel comprising agribusiness professionals. The review examined the early outcomes and made recommendations to government about how individual programs might be improved.

Review of the drought reform pilotIn September 2011 the Drought Pilot Review Panel released a review of the pilot of drought reform measures in Western Australia (Keogh et al. 2011).

The report found that the following measures would represent a robust future policy platform:

- an income support safety net for farm families in hardship that is available based on demonstrated individual need
- the permanent presence of social support services delivered through outreach to people in rural communities
- continuing opportunities to engage in and implement strategic farm business planning

- ongoing access to the Farm Management Deposits scheme and existing tax incentives for primary producers.

The report made the following recommendations (Keogh et al. 2011):

Recommendation 2.1 Governments should support strategic farm business planning as a means of improving resilience and adaptability in the farm sector.

Recommendation 2.2 Strategic farm business planning programs supported by government should integrate all critical elements of operating a farm business, including financial planning, natural resource management, managing the impact of a changing climate, work-life balance, farm family wellbeing and succession planning.

Recommendation 2.3 Before any national rollout of a strategic farm business planning program, an audit of similar programs Australia-wide should be undertaken to clearly identify current resourcing to avoid duplication and to coordinate delivery for any future initiatives.

Recommendation 2.4 Government-supported training in strategic farm business planning should be continuously available to enable farm businesses to undertake such training when it best suits their circumstances.

Recommendation 2.5 Any future government platform for the delivery of training in strategic farm business planning should encourage participation by women, recognising their role in facilitating important farm business changes.

Recommendation 2.6 Any future strategic farm business planning program should include follow-up incentives to encourage participants to update and implement their strategic plan over the longer term and to foster a culture of continuous learning.

Recommendation 2.7 Any incentives to encourage participation in strategic farm business planning courses should reinforce participant commitment to outcomes from the planning process.

Recommendation 2.8 Training in strategic farm business planning should be offered in a way that takes account of the variation in participant skills and knowledge, with different streams for participants with entry level and more advanced skills.

Recommendation 3.1 The Building Farm Businesses grants program should not form part of future drought policy.

Recommendation 3.2 Any future investment to assist farm businesses to become more resilient should be better targeted at activities that deliver lasting benefits that help farmers to better manage and prepare for future challenges like drought, climate variability and reduced water availability. Such activities may include:

- further training, especially in managing the risks posed by drought, climate variability and reduced water availability
- trialling innovations that draw on research and development relevant to the program's objectives
- activities that help farmers to access alternative income streams, such as payments for ecosystem services

- natural resource management activities that are closely aligned with state and national priorities and programs, and deliver clear and lasting public benefits.

Recommendation 4.1 Temporary income support for farm families experiencing hardship that is available based on demonstrated individual need should be the foundation of any reform of national drought policy.

Recommendation 4.2 Any future income support program for farm families should be underpinned by adequately resourced Centrelink outreach services that provide assistance to clients in the home, at local venues and via the Australian Government Mobile Office.

Recommendation 4.3 In any future income support program for farm families, more complete guidance on the application process, such as an online tool, should be developed to better inform applicants about the information needed to support their application.

Recommendation 4.4 The hardship provisions that are applied by Centrelink in some circumstances for other government support programs should also be considered for application in the case of longstanding beneficiary loans associated with family trust structures.

Recommendation 4.5 The merits of establishing a reconciliation payment process should be considered for any future income support program for farm families.

Recommendation 4.6 An assessment of the Farm Financial Assessment and Action Plan processes should be undertaken during the extended pilot in Western Australia to determine their effectiveness.

Recommendation 5.1 Social support services, including counselling, information and referral, should be available and accessible to those in need at all times and not just during crisis events.

Recommendation 5.2 The outreach model of providing direct services to farming families and rural communities, in the home, workplace or another local venue, should be part of any rural and remote social support service and must be appropriately resourced.

Recommendation 5.3 Social support services should be promoted through local and regional networks and established alongside existing community services.

Recommendation 5.4 Delivery agencies should continue to improve communication and coordination across the range of social support services provided.

The government is considering the review and its recommendations.

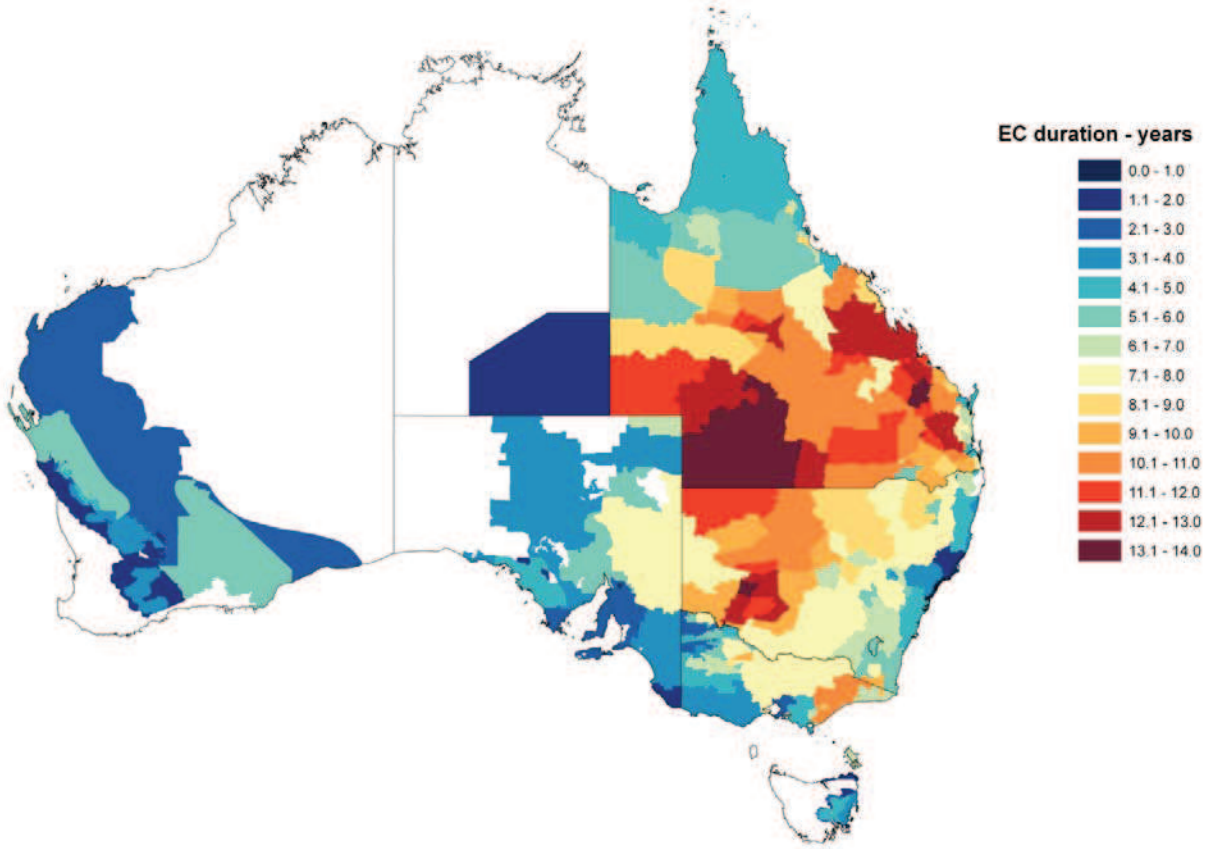
9 Realities of policy implementation

Despite the good intentions of the National Drought Policy, the recent social, economic and climatic assessments highlight some difficulties in implementing the policy intent. These assessments indicate that the current EC trigger is not appropriate under a changing climate (Hennessy et al. 2008) and that the criteria has failed to distinguish between droughts defined as those expected to be managed and those beyond the ability of the most prudent farmer to manage (Productivity Commission 2009).

Australia's climate variability and variation in agricultural production systems require a substantial amount of flexibility to deliver the intended results. For example, assessing a region that contains irrigated horticulture and mixed cropping and grazing systems can be quite complex. A single criterion with insufficient flexibility to account for this diversity may not always deliver consistent outcomes (White et al. 1998). This is because the different systems use rainfall in different ways and at different times, which requires individual measures (White & Walcott 2009). Furthermore, each industry has its own requirements regarding the nature and timing of government assistance, depending on whether they need funding for sowing the next crop, for rebuilding their flocks/herds, or for current expenditure.

Under the current EC process, while declarations are made in a relatively timely manner, determining the end of a declaration is problematic to the point where some regions have been EC declared for 14 out of 17 years (Productivity Commission 2009) (Figure 4). In some areas long-term drought declarations may be indicative of long-term drought conditions, but in others, structural adjustment issues may be a contributing factor.

Figure 4 Duration of Exceptional Circumstances declarations, 1992–2010



EC = Exceptional Circumstances

10 Decision support systems

With substantial areas of Australia remaining drought declared by 2009, the National Agricultural Monitoring System was withdrawn from public access and resources were directed elsewhere. As DAFF needed a replacement system, ABARES developed and maintained an internal system, the Monitor (http://www.daff.gov.au/abares/monitor). Since 2009, DAFF has used the Monitor to support implementation of the drought policy and the assessment and review of EC regions. Without systems such as those developed by ABARES, the recent assessments and reviews of drought-affected regions across Australia would have been significantly more difficult to implement.

The Monitor has undergone a refinement to improve its operational functionality and has been released to the general public to support a broader range of government decision-makers, industry groups and producers make informed risk management decisions on climate variability. In this context, the Monitor will add significantly to the tools and information being provided for preparedness and risk management for Australian agriculture.

ABARES has a suite of tools, models and information systems, such as the Monitor, the Rainfall Reliability Wizard (http://adl.brs.gov.au/rainfall/) and GrowEst (ABARES 2011), that provide decision-makers with information on climate variability, water availability and economic indicators and the impacts on agricultural production systems. These tools and systems support the assessment of drought-affected regions and ensure an equitable assessment process by providing consistent, quality-controlled data. As well as supporting the drought assessment process, the information is used to see where production conditions are deteriorating due to adverse climatic conditions and to help identify where government intervention may be necessary by way of drought support measures.

Government has a role to play in providing information and tools to increase the efficiency and competitiveness of the agricultural sector. These systems can have multiple public benefits, such as providing support for natural resource or water management.

A substantial knowledge gap remains in terms of projecting future climate change and variability and their impacts on agriculture. Most importantly, appropriate information about managing climate risks and variability needs to be communicated to decision-makers to inform future policies and support better risk-management practices at all levels.

11 Conclusions

Recurring drought is a natural part of the Australian climate. The Australian Government has a longstanding National Drought Policy based on preparedness and risk management. While recent reviews have highlighted some difficulties with the practical implementation of the policy, particularly in a changing climate, the intent remains valid.

Effective management of current and future agricultural climate risks will require continued public sector investment and involvement in agricultural research, development and extension.

Research into climate change mitigation and adaptation options and the development and promotion of strategies, information, tools and practices will be vital in equipping farmers with effective strategies and tools to manage climate risks.

Government has a role in encouraging better risk management, but also in providing information for use by farmers, decision-makers and other stakeholders. Recognising that most farmers are not reliant on government support during droughts, governments may have a role in supporting viable farmers during the worst droughts.

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