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## Drought Assistance Policy Options

John Freebairn

University of Melbourne

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### Abstract

Drought is an inevitable and recurring characteristic of the farm business. Farm business subsidies are both inefficient and an ineffective welfare support. The Farm Household Allowance is a better welfare support policy, but the current design raises issues of implementation and of equity across others in need. Long term support of provision of information and assistance in better decision making are worthwhile policy options for responding to drought and other uncertainties.

### Introduction

The inevitable arrival of another drought across eastern Australia in 2018 initiated another round of ad hoc government policy support measures for the farm sector. Despite reasonably well-designed, longer-term drought policy strategies announced in 1992, 2007 and 2013, and support of a detailed Productivity Commission report (Productivity Commission, 2009), Commonwealth and State governments have adjusted ongoing drought assistance programs and introduced additional subsidies over 2018 and 2019.

Four categories of government assistance to agriculture during a drought are described and assessed:

- subsidies for farm businesses;
- income supplements for low-income farm families;
- support for better decision making; and
- insurance.

None of these government outlays induce the rainfall to end a drought.

### Farming and Droughts

Farming is a known risky business. Seasonal conditions vary from drought to normal and above average<sup>1</sup>; and some face floods, frosts and cyclones. The high probability of climate change includes more frequent and longer drought periods in the future (BoM and CSIRO, 2018; and Hughes et al.,

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<sup>1</sup> Further, even for irrigation farmers, the variability of dam inflows, often with the standard error double the mean annual inflow, it is not economic to adopt storage policies which offset drought (see, for example Brennan, 2010), as evidenced by the volatility of market water prices.

2017). Outbreaks of pests and diseases confront some farms. Farm commodity prices are volatile, as are some input costs. Farmers are aware of volatile and uncertain seasons and markets, as are other producers along the food and fibre supply chains.

There is compelling evidence across countries and over time that individual farmers with personal incentives and access to private information are better and more productive decision makers than governments.<sup>2</sup> Experiences of China and Vietnam in the second half of the twentieth century illustrate this.

People voluntarily commit to farming if anticipated returns in the good times more than balance low or negative returns during droughts and other adverse conditions. These farmer decision choices are consistent with the productive allocation of limited national labour, capital and other resources between agriculture and other sectors of the economy and within the agricultural sector. If average returns over time are negative, farming is an inefficient choice for both the farmer and for the nation.

Most farmers develop and employ production and financial strategies to adapt to changing seasonal and market conditions. Decision strategies include smoothing over time the availability of funds for family expenditures. Others seek to diversify their sources of income.

Structural adjustment is a continuing feature of farming, as it is for other industries. Higher costs of labour relative to machinery, the large-scale bias of new and emerging farming technology, together with more-productive farmers buying out less-productive farmers, lie behind the growth over time of average farm size, a smaller number of farmers, and yet increasing levels of farm production.

Australian agriculture has been a success story. Aggregate production has increased on average by about 2 per cent per year, about 70 per cent of production is exported, and the industry has been innovative with above-economy-average levels of productivity growth. Most individual farmers and component industries have adjusted to changes in seasonal conditions, including droughts, changes in relative product prices and input costs, and emerging technology. Most farmers have self-managed and adjusted to the different external changes, including variable seasonal conditions.<sup>3</sup>

Why then do governments direct scarce taxation funds to farmers each time an (inevitable) drought arrives? Of course, drought conditions are tough, but they are not a surprise. Yes, droughts provide graphic material for the media, and some families fall into poverty. As Botterill (2003), Ha et al. (2007) and others have argued, general perceptions of the wider population and governments of farming as an industry and farmers as citizens as special in providing food, images of farming as the foundation and exemplar of Aussie culture and heritage, and so forth, are important.

#### **Farm Business Subsidies<sup>4</sup>**

One general form of government assistance in times of drought involves subsidies to farm businesses. Subsidies help pay for interest, freight, fodder, council rates and other farm inputs. Some

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<sup>2</sup> See, for example, Gardner and Rausser (2002, chapters 27, 29 and 30).

<sup>3</sup> For example, the Productivity Commission (2009, Table 1, page xxvi) report that over the 2002-03 to 2007-08 drought period about 70 per cent of dairy and broad acre farmers in drought declared areas received no drought assistance.

<sup>4</sup> This section draws on well-documented material drawn together by the Productivity Commission (2009), inputs to and outcomes of government policy statements issued in times of normal seasonal conditions, and numerous research publications.

have suggested subsidies to raise the prices of farm products. Further, eligibility conditions and subsidy rates often are adjusted with the onset of drought.

Drought subsidies raise the average return from farming. They might be termed “subsidise some of the losses of droughts but retain the profits of good times”. Artificially increasing the average return to farming leads to a misallocation of limited national labour, capital and other resources from the rest of the economy to agriculture. Society efficiency costs of farm business subsidies are much the same as the efficiency costs of tariffs raising the price of imports.

There are important and unintended side-effects of farm business drought subsidies. One, knowledge that subsidies will be provided during drought reduces the incentives for some (but not all) farmers to adopt appropriate drought preparation and mitigation decision strategies, and for farm families to set aside income earned in good seasons for household expenditure during droughts.

Two, drought subsidies hold up inevitable structural changes for a future with a more productive farm sector and with higher farm family incomes. For example, subsidies increase the costs for smart farmers who have planned for and adapted to drought to buy out less successful operators.

Three, sometimes the adverse effects of droughts are linked to the decline of many rural communities.<sup>5</sup> Further, it is contended that the decline should be stopped, and in particular that it should be blunted by government subsidies for farmers in drought-declared areas. No doubt, drought, by reducing the incomes and expenditures of farm businesses and farm families, and then flow-on effects to non-farm local businesses, is highly correlated with people movements to larger country towns and cities. While drought may speed-up the decline of many small regional communities, in most if not all cases there are underlying trend reasons for the decline, including larger and less labour-intensive farms, lower costs of transport, and preferences of farm and off-farm members of rural communities for the more diverse and larger mix of services available at larger centres.

Four, subsidies for farm outputs or inputs during a drought are a very blunt policy instrument to support farm families facing poverty. Given the limited available supply of fodder during a drought, most of a fodder subsidy will be passed back to the suppliers of fodder, with the buyer price rising by the subsidy. Subsidies on interest provide no income support for farmers free of debt or reluctant to take debt, and they provide greater assistance to large borrowers who often have above-average incomes. Direct household income measures, discussed next, are more effective interventions to reduce poverty.

### **Farm Household Income Support**

Australia has long-established equity objectives of a minimum income and safety net for all citizens, together with government-funded education, health and other basic services for all.

Because of poor decisions or bad luck, some farm households find themselves short of money to provide basic food, clothing and so forth for the family. The Farm Household Allowance (FHA) is a means-tested (income and assets), government-funded safety net to counter poverty of farm

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<sup>5</sup> For example, Wittwer and Griffith (2011) estimate that the 2006-07 to 2008-09 drought in south-eastern Australia reduced regional GDP by up to 20 per cent, loss of jobs and reduced regional investment.

households in drought-declared areas.<sup>6</sup> Initially the FHA was set at the same rate as the unemployment benefit rate, Newstart. Since August 2018 the FHA rate has been increased, with additional income, an extended payment period (from two to four years), and a more generous asset threshold (up from \$2.6m to \$3.57m).

While the FHA provides direct income support to farm families facing poverty, and some other farm-dependent small businesses, small business operators in other parts of the economy, such as restaurant owners, builders and mechanics, are not eligible. This favourable treatment of farm families relative to other small business families raises horizontal equity issues.

The Productivity Commission (2009) pointed out that drought is not the only cause of farm household poverty, with low commodity prices, floods and so forth as other causes. It recommended removing a declared-drought area as a prerequisite for eligibility. The drought prerequisite fails horizontal equity, and it is arbitrary given the way areas are declared to be in drought or exceptional circumstances.

Details of the design of the means test for eligibility for direct income grants to mitigate poverty among farm families raises many challenges. Along with other minimum income support measures, and in particular Newstart, eligibility for the FHA considers income, assets and mutual obligation. The variability of income over time makes income measurement arbitrary. Some farm households dependent on livestock may have a one-off cash-flow income boost from the forced sale of animals because of drought, and yet be in a longer-term, low-income situation. Most farmers with low incomes have considerable assets in the farm, even if it is difficult to borrow against the farm asset. The much more generous asset test for the FHA relative to Newstart is debatable; with the arguable justification that farmers need to maintain the farm and face fewer opportunities for alternative employment than Newstart recipients. To some extent, a requirement that assisted farmers evaluate their longer-term income and sustainability prospects, and for some to take steps for exit or generation ownership transfer, has been argued as a more appropriate mutual obligation than the “looking for employment” mutual obligation required of Newstart recipients.

Government funding of mental health, social and other support for the wellbeing of farmers and their families adversely affected by drought can be an important social equity instrument. Also, these programs may be a valuable society investment.

### **Better Farm Business Decision Making**

Several programs to support better farm plans to accommodate droughts (and other sources of farm income variation) are government funded. Information provision and education programs have public good properties and external benefits, meaning they would be under-supplied if left to private decisions. Support for farmers to make better decisions to prepare for, and be more resilient to, inevitable future droughts can be the most effective way to modify the personal and society-wide costs of drought.

Government funding of the collection, analysis and distribution of meteorological and other data on seasonal conditions to guide farmer and farm household decisions is fundamental to making better decisions in a world of variable climate conditions.

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<sup>6</sup> The FHA was established in July 2014 arising from the 2013 Intergovernmental Agreement on National Drought Program Reform.

Hands-on education and support to individual farmers to develop more appropriate decision strategies are available, for example the Rural Financial Counselling Service. They add to a more robust and self-sufficient farm sector.

Government programs to support decision making by individual farms and families should be available over time and be offered during both good and drought seasons.

## Insurance

Insurance products to spread the risks of droughts are not readily available or used by farmers in Australia. In principle, the case for insurance for droughts is the same as for insurance for fire, accidents, and so forth. Insurance allows risk-averse individuals and businesses to substitute a regular annual premium to fund larger and infrequent payments in the event of a drought. Insurance companies can pool the risks across many farmers in many different regions, even across countries and other areas of insurance, and provide close to actuarially-fair insurance net of administration costs.<sup>7</sup> The Productivity Commission (2009) and others argue there are no solid market failure reasons for government intervention. While farm income insurance is widespread in the United States, government subsidies are about a half of the insurance premium.

An important, current, government-imposed disincentive to insurance in general, and drought insurance in particular, is State government stamp duty on gross insurance premiums of from 9 to 11 per cent (NSW Treasury, 2016). Removal of the selective additional stamp duty tax on insurance has been high on the list of tax reform discussions, including the 2010 Henry Review (Henry et al., 2010).

A number of arguments may explain the limited use of drought insurance as a risk management strategy in Australia. A potential problem on the supply-of-insurance side is the systemic nature of drought, unless geographic spread and other forms of risk spreading are involved. Large companies with a diverse portfolio of client farms by geography and different climates together with a broad portfolio of insured products, or government, seem necessary.

The choice of a measure of drought incidence to trigger an insurance payment which minimises operating costs and meets individual farm and household needs for income smoothing is challenging. Farm yields or production are closest to farmer needs, but this measure involves relatively high operating costs and it confronts problems of moral hazard and gaming by the insured. Another measure would be based on official Bureau of Meteorology rainfall or other data. However, given somewhat arbitrary definitions of recorded rainfall and perhaps other climate outcomes to trigger payment, and variations across enterprise types and regions, there is a less than perfect correlation between the chosen meteorology measures and farmer drought effects (Hughes et al., 2017). An associated insurance design issue is the payment measure, with options of \$ per hectare or animal, share of agreed yield or gross revenue, and share of agreed costs.

Problem three is the likelihood of adverse selection. While longer-term Bureau of Meteorology and other climate forecasts using El Nino and so forth are far from accurate, if they have some predictive success, smart farmers may choose not to insure conditional on forecast when outcomes are predicted to be above average, and insure if there is a forecast of below average. One option would be to require insuring over several years.

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<sup>7</sup> The general idea is that the pooling of risks, and in particular independent risks, creating variable outcomes with a standard error of  $\sigma$  for an individual farm when pooled by an insurer across  $n$  players, has a lower standard error of  $\sigma/\sqrt{n}$ .

The prospect of climate change adds to the risk premium.

Bardsley et al. (1984) challenge the economic efficiency of rainfall insurance. Their argument of high administrative costs associated with the systemic risk attribute is questioned by Quiggin (1986) arguing this is a small issue for large insurers with a diverse portfolio of insured products and geographic spread. Bardsley et al. further argue that rainfall insurance provides a means to individual farmers that is less flexible and of lower value for smoothing income than alternative farmer-specific income-smoothing measures, including own finances, borrowing and lending (plus the now available system of farm management deposits). More specifically, they argue that, relative to the multiple market and production causes of variable incomes, the intertemporal redistribution of funds with rainfall insurance is too restrictive; and there is a less than perfect correlation between the insurance pay-outs and individual farm drought experiences.

In Australia a system of farm management deposits enables farmers to shift taxable income earned in good seasons to drought years with low income. Shifting income during good times (including above normal and normal seasonal conditions) when facing relatively high marginal personal income tax rates, to low income years (including drought) with lower personal tax rates, reduces tax paid. Such income tax averaging has horizontal equity benefits with those earning more stable incomes. Also, it encourages the transfer of funds to drought years of need. On the other hand, non-farm businesses with variable year-to-year incomes do not have access to income tax averaging options available to farmers.

Botterill et al. (2017) have advocated the use of income-contingent loans or revenue-contingent loans as a policy intervention to smooth farm incomes as a type of second-best government drought assistance measure. This is not supported by the Productivity Commission (2009), in part because they argue there are no market failures with the financial sector providing loans. Further, Botterill et al. (2017) agree that there will be some non-repayment of the loans, and hence a subsidy component.

### **Key Messages**

In the event of a drought, subsidies for farm inputs and outputs have undesirable national resource misallocation effects and they provide a blunt welfare safety net. Direct funding of household incomes to reduce poverty better targets equity, but it is difficult to implement. Longer-term and sustained programs to assist decision making to adapt to variable seasonal and other conditions is desirable. Impediments to the development and adoption of insurance against drought warrant consideration. In general, ad hoc political responses to each drought should be replaced with longer-term policy interventions across good and bad seasonal conditions.

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