

## More Efficient Drought Relief for the Karoo: Lessons from Australia's Big Dry

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### **ABSTRACT**

*Under climate change, multi-year droughts will become a more predictable feature of the Karoo. Australia's Millennium Drought triggered a comprehensive policy reform in which the trade-off between humanitarian relief and structural adjustment to climate change had to be confronted. This paper tells that story, drawing lessons that could improve the efficiency of South Africa's drought relief efforts. This account highlights the adverse consequences that can result from failing to actively pursue structural adjustments to climate change. We can learn from Australia's experience 1) To pay attention to messages that come up from the grassroots level, 2) incentives matter for adaptation, 3) resilience can only be achieved through structural adjustments, 4) mental health support should be left to professionals, and 5) better coordination and more transparency should increase readiness.*

**Keywords:** Millennium Drought, Drought Relief, Structural Adjustment, Sheep and Wool, Karoo.

### **1. INTRODUCTION**

"I haven't taken my wife into the paddock for more than a year ... because it's so bad and there's so much death. ... I don't want her to see it ... I'm struggling to handle it myself."  
(Perceval *et al.*, 2019: 282)

Now approximately four years out of the Karoo drought and quite nervous still about the onset of the next big one, the structures of organised agriculture and members of the grassroots extension fraternity that work in the Karoo are still wondering if we did the right thing, if our efforts made any difference and how many of the farmers we interacted with will never financially recover from the setback of the 2017 – 2021 drought. This drought was one of four major events recorded in the Karoo over the past century, not the deepest nor the longest since

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1927, but sufficiently long and deep to make it the worst drought of the past century (Conradie *et al.*, 2025). Being the first significant drought of our generation, we had to adapt to policies and plans designed in the 1960s and last implemented at the time of the country's transition to democracy. Anecdotal evidence suggests that some extension workers were severely emotionally impacted by the drought in their line of duty, while representatives of organised agriculture had to shoulder the significant additional burden of crisis management, coping with the drought on their own farms.

As an economist, I wonder about efficiency, both in terms of how scarce resources were distributed and whether any of our interventions prevented the inevitable. I also worry about rent-seeking and fairness, as well as the mental health of the gatekeepers responsible for distributing drought relief.

South Africa is not the only major livestock-producing country that must face the increased aridity associated with climate change. In Australia, the Millennium Drought, also known as the Big Dry (1997–2008), revealed that the country's drought policy was not fit for purpose under climate change. An extended review of all aspects of drought followed from 2008 onwards, culminating in a seven-year drought agreement reached in 2018. The 2018 agreement laid the foundation for Australia's new Drought Policy (2024).

The review and analysis come in two parts, with Section 2 concentrating on the policy process and Section 3 focusing on the economic and social lessons learnt. The conclusion outlines some principles for South Africa to consider.

## **2. DROUGHT POLICY IN AUSTRALIA**

Towards the end of the Millennium Drought, Australia made a 180-degree U-turn away from viewing drought as a natural disaster to embracing drought as a normal, predictable part of operating in an arid environment. Agriculture lost some of its historical entitlements to government in the reforms, and the process began well before the beginning of the Millennium Drought in 1997 (see Table 1).

By the 1970s, broad-based support for agriculture had evolved into a development programme called the Rural Reconstruction Scheme. In 1976, a disaster relief component was added to the Scheme. The list of natural disasters included drought, but by 1989, this position was revised,

and drought was removed from the list of natural disasters again. At roughly the same time, reforms in the retail banking sector increased competition in the agricultural credit market, making the lack of business acumen in the farming community apparent. The Government responded by establishing a Rural Financial Counselling Service (RFCS) in 1986. With an office in every town, the RFCS tutored farmers on how to compile farm plans and cash flow budgets, and occasionally assisted them through credit negotiations with commercial banks. At the time, and even today, the primary form of drought relief provided to Australian agriculture is an interest rate subsidy. Therefore, it is in the mutual interest of all stakeholders for the RFCS to become involved in credit negotiations.

**TABLE 1: Evolution of Drought Policy in Australia**

<b>Date</b>	<b>Policy changes or programme</b>
1971	Rural Reconstruction Scheme
1976	Natural disaster relief arrangements included with Rural Reconstruction
1986	Rural Financial Counselling Scheme for farmers
1989	Drought removed from disaster relief provisions
1992	National Drought Policy actions relief through Exceptional Circumstances declarations
1997	Exceptional Circumstances Policy refined
2008	National Review of Drought Policy
2012	Last Exception Circumstances declarations lapsed
2013	Intergovernmental Agreement on National Drought Programme Reform
2015	White paper on agricultural competitiveness
2018	National Drought Agreement (2018-24) signed
2019	Drought Response, Resilience and Preparedness Plan released
2020	First Future Drought Fund Drought Resilience Funding Plan (2020-24), Future Drought Fund Programs launched
2024	Drought Resilience Funding Plan comes into effect National Drought Agreement (2024-29) released Australian Government Drought Plan published

(Source: Smolinski, 2014; DAFF, 2024)

The RFCS was one of the first organisations to raise the alarm about the degree to which the Millennium Drought impacted the financial reserves of farmers. Later, the RFCS also spoke out about the mental health pandemic that unfolded as the drought progressed. See Perceval *et al.* (2016) for a detailed account of the role and experiences of RFCS officials.

The National Drought Policy (1992) was at the forefront of acknowledging that climate change would lead to normalised droughts and that farmers should be encouraged and assisted to face the increased degree of climate risk. The policy emphasis shifted from financial contributions in the form of subsidised fodder to greater adaptation through improved risk management. Given the role the RFCS has carved out for itself, it was evident that this programme would be a crucial part of the newly formulated government response to drought (see Australian Drought Plan, 2024).

Despite this insight, thinking of drought as a natural disaster did not fade overnight. The National Drought Policy (1992) provided for the declaration of “Exceptional Circumstances” under which some of the old patterns of relief would still be delivered if conditions warranted. Exceptional Circumstances (EC) were defined as occurring in 4-5% of seasons, and each state or territory could gazette its own EC areas. It was soon apparent that climate change would turn the exceptional into the everyday. There was a minor tweak to the policy even before the Millennium Drought got underway, while the call for a major overhaul of drought policy arrived by the end of the Millennium Drought. The last EC Declarations expired in 2012, and from 2013 onwards, every aspect of Australia’s drought support policy was being renegotiated.

The reform process moved slowly. It began with an extensive multi-disciplinary research programme in 2008. With the main facts on the table, the Intergovernmental Agreement on National Drought Programme Reform was signed in 2013. The first actual Drought Agreement was not signed until five years later, covering the period from 2018 to 2024. This framework enabled the formulation of a detailed plan, which was accepted in 2019, and a funding model was proposed in 2020. Finally, in 2024, the Australian Government published its Drought Plan (2024) and signed the second Drought Agreement (2024 – 2029).

Three important lessons to draw from the Australian policy process are:

- Grassroots service providers have the best vantage point for observing an unfolding disaster. The government and producer organisations' policymakers will be well served to pay attention to their data and observations.
- Policy reform is a lengthy and tedious process. It is helpful to begin with an agreement in principle before trying to work out the details. It is important to ringfence funding before announcing plans and to attach a multi-year limitation to each agreement, as changing environmental conditions might otherwise overrun the policy process.
- The next crisis is coming. It is best to prepare for it now, in relatively good times. Our policy response must be 1) fit for purpose, 2) orderly and well-resourced and 3) delivered timeously.

### **3. MILLENIUM DROUGHT: IMPACTS AND LESSONS SUMMARISED**

rural communities are affected by drought are numerous, multifaceted, and intertwined. The purpose of Australia's National Review of Drought Policy (2008) was to review the Exceptional Circumstances programme's performance during the first 18 years of its existence. Research examined meteorological, farm productivity, and psychosocial outcomes under climate change, and this brief review highlights only the two lessons that informed subsequent Australian policy (described above in Section 2).

#### **3.1. Drought is Debilitating**

While droughts often begin innocently, the most serious ones can leave farmers and their communities financially destitute and psychologically devastated (Wilhite & Glantz, 1985; Edwards *et al.*, 2015). Fennel *et al.* (2016) counted amongst the main stressors to livestock farmers 1) drought, 2) financial pressure, and 3) uncertainty about the future, although Edwards *et al.* (2015) argued strongly that it all ties back to the farm's performance on the broader economy. With lines between families and their farms often blurred on smaller properties, uncertainty about the future frequently contributes to concerns about opportunities for children and the care of elderly parents from whom the farm was inherited. One of Kiem and Austin's (2013) respondents mentioned difficult conversations "that must be had with in-laws about packing in the farm". Because business and family are so closely intertwined, the Productivity Commission's Inquiry Report (2009) expressed concerns that money intended for business sometimes went towards family expenses, and vice versa.

Other contributing stressors include dealing with dying animals (Perceval *et al.*, 2019), being misunderstood by outsiders, witnessing one's community fall apart due to rent-seeking among community members, and having to repeatedly describe the drought to one official after another (Sartore *et al.*, 2008). This created a pervasive feeling of being misunderstood and unappreciated in the broader Australian society. Stress culminates in feelings of hopelessness and paralysis, when even the simplest farming tasks become too difficult. Sheer exhaustion should not be underestimated either (Fennell *et al.*, 2016), which can sometimes be triggered by something as trivial as having to fill out yet another complicated online form (Perceval *et al.*, 2013) or being asked to attend yet another research focus group (Kiem & Austin, 2013).

The extent of the feelings of overwhelm among farmers and local officials is illustrated by an excerpt from an interview with a high-ranking local development official working in Mildura, Victoria. He called water insecurity “the straw that broke the camel’s back” and then proceeded to say “What really hit us hard, if not harder, was commodity prices – and everything else” (Kiem & Austin, 2013) (my emphasis). The complexity and interrelatedness of the problem are obvious from this quote, and the all-encompassing nature of the challenge perhaps poses the greatest risk to effective service delivery. I personally experienced how an extension officer can be emotionally drained along the path described in Wilhite and Glantz’s (1985) progression from mild curiosity about rainfall deficits to an intense focus on cost-effective supplementary feeding, and ultimately to total despair and hopelessness, as there is no end in sight to the drought. When supporters become emotionally compromised, they are no longer capable of delivering proper services, precisely at a time when service delivery is most needed. At that point, mental health support and humanitarian relief should be taken out of the hands of local officials, who, in fact, should be referred for treatment themselves if they are expected to continue performing their roles as farm technical and financial advisers.

Ultimately, despair increases suicide risk. In Victoria, Australia, farmers made up a small constant share of suicides in the period since 1970 (Guiney, 2012), although using different data, Hanigan *et al.* (2012) found a substantial increase in suicide risk amongst males aged 30-49 years in New South Wales that correlates with the results of a Hutchinson Drought Index. It was different for women, but the study confirmed seasonal variation in suicide risk associated with the “broken promise” hypothesis, when spring rains fail. The same depressed mood was evident in the Karoo when autumn rains showed up late in 2024 and again in 2025.

In response to a direct question of what might help [farmers] to cope better with the drought, participants in a focus group in New South Wales gave the monosyllabic answer “rain” (Sartore *et al.*, 2008), which Kiem and Austin (2013) interpreted as a symptom of research fatigue. This kind of answer could also be simply a sign of frustration with the policy review process and “the Government” in general. Farmers believe that sympathetic and knowledgeable listeners who can provide sound financial advice would be helpful. They also felt that more time to discuss anxiety with local GPs would make a difference, especially if GPs were able to leverage additional psychological help into the community on demand (Sartore *et al.*, 2008). Mental health education was identified as a clear way forward, enabling the entire community to recognise the signs of emotional distress and know where to seek help. People believed that acknowledging stress and learning how to manage it in a knowledgeable and practical way would strengthen the social fabric.

Sartore *et al.* (2008) recognised that although most farmers preferred to see a counsellor locally, especially a trusted GP, this could create stigma for those reaching out for help.

“A cry for help does not always solve the problem... probably the hardest thing is for men to go to a group, to be able to unload what they feel [and not] feel that’s going to be talked about all around the trap” (Male farmer recorded in Sartore *et al.*, 2008: 7).

The important lessons for humanitarian relief during future South African droughts are:

- Psychological help often does not arrive quickly enough. This causes farmers to carry unresolved trauma even years after the drought (Van der Merwe, in prep).
- Those caught up in drought may find it difficult to articulate the source and nature of their distress. A lack of business acumen can compound the problem.
- Counselling should be provided face-to-face rather than online, ideally dispensed by someone known to and trusted by the farmer, albeit with confidentiality strictly guaranteed. This is a difficult balance to maintain.
- Therapy should be left to mental health professionals. However, extension officers and organised agriculture representatives must be trained to recognise the signs (including, and especially in themselves) and how to refer those in distress.

### 3.2. Get Big or Get Out

Australian agriculture is export-oriented, a price-taker in global commodity markets, and the sector is largely unsubsidised (Greenville, 2020). According to Asghari *et al.* (2021), government policy favours the consolidation of small, financially viable farms into bigger entities for two main reasons. Firstly, financial reserves allow larger firms to capitalise on the occasional high-rainfall season. Secondly, large firms can leverage economies of scale in marketing, strategic planning and the adoption of lumpy technology.

The need for healthy structural adjustment was recognised by the Drought Policy Review Task Force (emphasis added):

“Adjustment assistance differs from other forms of industry assistance as the onus for responding to changing market and climatic conditions **always rests with the individual producer**. Its purpose is to provide producers with the opportunity to respond to changing conditions without detracting from the need for adjustments to be made. Those producers **not capable of responding** to longer-term market pressures or who have lost prospects in the industry **should be encouraged to leave**” (McInnes *et al.*, 1990: 86).

Asghari *et al.* (2021) reported that 68% of farmers operating under Exceptional Circumstances Declarations did not need financial assistance. The most common cry for help came from people aged 50-70 who operated family farms, which were both their homes and businesses. Couples often had farming history on both sides of the family, with the husbands commonly handling the physical aspects of animal husbandry and the wives taking charge of bookkeeping and finances, and by implication also of household finances and homeschooling. The wives were therefore perhaps carrying most of the stress of farms failing financially. The vulnerable were small to medium-sized operations generating incomes in the bottom 30-40% of business income across all sectors. The characteristics of vulnerable farmers were 1) a lack of financial agility, 2) an inability to get things done in good time, 3) a general lack of business skills and 4) an unfounded belief that the government should come to their rescue (Asghari *et al.*, 2021).

As indicated in McInnes *et al.* (1990), self-reliance has been a part of the Australian drought management discourse for a long time and occupies the entire focus of programmes and policies delivered by states and territories (as opposed to the Federal Government). Howden *et al.* (2008) grouped drought preparedness under three headings: pasture, pest, and animal

management, acknowledging the importance of conducive policies and R&D support in each arena.

Good pasture managers pursue sustainable rangeland utilisation. There are two sides to this equation: knowing one's farm's carrying capacity and knowing one's flock's grazing requirements. In South Africa, legal oversight is provided by the Conservation of Agricultural Resources Act (CARA, Act 43 of 1983), whose regulations lay out carrying capacity norms (RSA, 2018) and the scientific calculations of grazing requirements (RSA, 2001). Meissner *et al.* (1983) established the standard large stock unit ( $\equiv$  equivalent to 450 kg of medium-frame steer gaining 500g daily by freely grazing on natural grass pasture with 55% digestibility). Every other type of livestock is linked to one large stock unit (LSU) based on relative energy requirements. The resulting Meissner factors vary more by the size of the animal than by breed, although Meissner *et al.* (1983) and the current CARA regulations continue to quote conversion factors by breed. Prior to the last revision of the regulations, Herselman (2000) pointed out that typical ewe weights have been increasing since 1983, which requires a wholesale revision of the Meissner coefficients in the new regulations (or simply a different way of reporting the information). Herselman's warning was not heeded. The South African small stock industry continues to use inappropriate factors, thereby underestimating grazing requirements, which leads to the unsustainable use of the Karoo's rangeland.

Optimal stocking rates are a complicated decision influenced by the medium-term climate outlook, the cost of transport and fodder, local labour markets, and road infrastructure conditions. Du Toit (2010) proposed a vegetation index based on a depreciated moving average of annual rainfall, which can be developed in Excel for farms where thirty years of rainfall history are available. Scientists routinely use a variant of Du Toit's index that ignores depreciation and can include or ignore rising temperatures (Milton *et al.*, 2023). The Specialised Precipitation (and Evaporation) index, SP(E)I, can be downloaded from the internet on a course grid across the world, as can Normalised Difference of Vegetation Index (NDVI), a product of remote sensing available to the Western Cape Department of Agriculture. However, for these constructive measures of grazing conditions, farmers need to be made aware of their existence, have sufficient internet connectivity and computer skills to access the data, and understand how to link the climate outlook, via an appropriate set of Meissner factors, to their farm's stock table.

Australian farmers have spreadsheets with embedded climate forecasts to support livestock management decisions. Karoo farmers have nothing like it, although a multidisciplinary team comprising rangeland ecologists, animal nutritionists, and economists should be able to do this easily. Such a product will support evidence-based decision-making, which should improve farmers' financial agility and, consequently, limit the damage inflicted by the next drought.

A related question concerns the optimal degree of culling, a decision that involves a trade-off between short-term fodder expenses and long-term recovery. Achieving an optimal balance will enhance long-term sustainability. The old heuristic recommended a one-third reduction, with the remaining sheep supported by state-subsidised maize, to which no transport cost applied. Alternatively, flocks would be transported free of charge to rented pastures. One of the last reports on rebates for stock feed transport appeared in the 1999 Abstract of Agricultural Statistics (Directorate of Statistical Information, 1999). This source indicates that stock feed subsidies accounted for 25% and transport rebates for an additional 2.25% of total Department of Agriculture subsidies in 1995. Both items dropped to zero by 1998. During the past drought, the Western Cape Department of Agriculture provided drought relief of 21 LSU per farm to bona fide farmers, totalling more than R350 million from 2016 to 2020. Other Cape Provinces distributed token amounts, and it remains an open question 1) what the effect on recovery was of the drought relief disbursed in the various districts of the Western Cape and 2) what the optimal level of stock removal is from the farmer's point of view if there is no drought relief forthcoming.

In addition, Asghari *et al.* (2021) pointed out that good pasture managers do much more than just manage optimal stocking rates. They prevent erosion and consider how to maximise rainfall effectiveness in high-intensity storms, which are expected to become more common due to climate change (Ziervogel *et al.*, 2014). They must implement pest management, which in South Africa includes controlling locust outbreaks, the spread of woody weeds (such as *Prosopis* and others), the spread of communicable diseases (like foot-and-mouth disease), and controlling meso-predator populations. In animal husbandry, selecting for heat-tolerant strains is most important. Good shepherds will consider adjusting mating and lambing times to account for the heat. An efficient system will pamper ewes in lamb and newly weaning lambs with supplementary doffer and sufficient shade and/or spray cooling. Good managers also keep a close eye on budgets and market conditions throughout the various stages of drought, paying special attention to standing fodder reserves and feed stocks. It is crucial to know when to start

feeding, what constitutes a total mixed ration and how such a ration can be obtained at the minimum cost (Asghari *et al.*, 2025).

Asghari *et al.* (2021) agreed with McInnes *et al.* (2009) regarding the potential benefits of harnessing economies of scale to maximise accumulation and savings during good times. However, these authors warned against taking on debt and failing to set aside financial and fodder reserves during good times. Investing in infrastructure in preparation for the next drought could include improvements to water storage facilities, expanding feedlots, enhanced fencing, and investing in automatic feed dispensing equipment to reduce labour costs during the next drought. If all else fails, income diversification, for instance, taking on-farm jobs, might offer a solution to the most marginal operations.

Adaptation to drought could be facilitated by providing farmers with access to relevant evidence of climate change, relatable to their own weather observations, and plausible and easy-to-understand medium-term climate forecasts, ideally already embedded in rangeland management and budgeting software (Howden *et al.*, 2008). Three to six months' advanced warning of a coming drought would be ideal (Asghari *et al.*, 2021), and this is why it is so important to adapt Australian planning software for local conditions. Farm media could play a crucial role in disseminating relevant climate data to their readership. Demonstration plots and farmer-to-farmer extension are recognised as effective extension tools, and the government should conduct and publish the results of field trials. Howden *et al.* (2008) also called for protection against establishment failure for early adopters, as well as logistical support to facilitate the delivery of new technologies. Another example of logistical support is maintaining a ready supply of essential vaccines to respond to disease outbreaks and keeping farm trunk roads in good condition to transport large loads of feed during a drought.

The main lessons South Africans can learn from the Australian experience are:

- Get big or get out while there is still some capital to salvage.
- Drought relief funding has a high opportunity cost, and it is therefore appropriate that drought relief programmes should pass relatively stringent cost-benefit tests. In South Africa, economists have yet to begin to investigate this issue.
- Strong expertise in rangeland management must be maintained, with key results fed through to farmers in structured and well-funded extension programmes.

- Ensure that farmers have all the necessary tools to do the job, such as effective vaccines and well-maintained farm-to-market roads.
- Maintain adequate biosecurity to allow South African commodities to be exported to the most lucrative global markets.
- Monitor and try to improve on-farm productivity at every phase of the drought cycle (between and during droughts and during recovery).

### **3.3. OTHER RURAL BUSINESSES**

One of the key insights from Australia's (2008) drought review was that financial pressure and stress do not stop at the farm gate. Local businesses should therefore qualify for some degree of support too, but subject to the same structural adjustment provisions imposed on primary producers.

### **3.4. AUSTRALIA'S NATIONAL DROUGHT PLAN (2024)**

The Drought Agreement (2018) rests on three pillars

- 1) Drought is a normal feature of the Australian climate.
- 2) Agriculture must be self-reliant.
- 3) Preparation equals better risk management.

In line with these three principles, the Agreement sets out stakeholder roles and responsibilities across the drought cycle to prepare for, respond to needs during the acute phase of the drought, and support farmers during recovery. The three main budget items arising from the 1992 Drought Policy's Exceptional Circumstances programme were interest rate subsidies in districts with EC proclamations (37%), farm management deposits (26%) and relief payments (26%) (Productivity Commission, 2009). Farm Management Deposits enable farmers to save tax-free for future droughts. Australia's drought relief budget was slashed by almost three-quarters during the latter part of the Millennium Drought. Farm Management Deposits were phased out, while interest rate subsidies rose as a share of the total, and (humanitarian) Relief Payments retained its share of the budget.

In the new plan, the federal government is responsible for coordinating and administering the National Drought Agreement and the Future Drought Fund. It also funds and delivers the Farm Household Allowance, which entails:

- Livelihoods grants for a maximum of four years out of ten.
- Pharmacological grants for those with mental health and other medical conditions.
- Professional risk assessments of the farming business and the household's mixed livelihood strategies.
- Retraining grants for those wishing to exit.

As a single point of entry for those seeking financial relief to meet living costs as opposed to business loans, the Farm Household Allowance combines immediate humanitarian relief with opportunities for structural adjustment during the acute phase of a drought. The emphasis is on seeking professional advice to assess business viability. It also provides resources for Australian citizens who wish to retrain for other occupations outside of agriculture. This is accomplished through a range of tax and financial instruments, under the guidance of dedicated RFCS case workers. The RFCS has proved its worth and continues to be funded by the Federal Government. The Federal Government is also responsible for climate forecasting, including timely warnings to support changes in farm management.

According to the Drought Plan (2024), states and territories must develop Future Drought Fund initiatives in consultation with all local stakeholders, including First Nations, to promote productivity and resilience, prevent environmental degradation and ensure that animal welfare standards set in state legislation are complied with.

The two spheres of federal and local government government join hands to:

- Design and deliver better service delivery that is consistent with the principles outlined in the National Drought Agreement.
- Identify the intersecting risks and opportunities in responding to, recovering from, and preparing for drought.
- Support the Rural Financial Counselling Service.
- Roll out programs to improve business acumen and resilience on farms and in rural communities.
- Share information (weather, market data and drought predictions) and post early warnings of developing droughts.
- Support rural economies generally.

- Build an evidence-based policy environment which includes monitoring and evaluation.

South Africa's organised agriculture and the Departments of Agriculture can learn a lot from Australia's new approach to drought management. The RFCS' success lies in being backed up by 1) sufficient funding, 2) the right incentives, 3) regular timeous forecasts that farmers can work with, and 4) technical expertise in the fields of animal husbandry, pasture management and farm financial management. Given the state of South Africa's public finances, funding will be limited and ought to only be forthcoming if the industry can demonstrate that more than R1 is generated for every R1 of public funding spent on improving climate resilience. In this respect, extension officers specialised in economic analysis, working with development economists, have a huge role to play in making South African agriculture more climate resilient.

All Karoo stakeholders should be encouraged to:

- Consider a Lekgotla to discuss drought management in the context of climate change.
- Form PPPs for all major centres across the landscape to avoid duplication and fruitless expenditure.
- Host the SAWS and other international service providers, such as Australia's Bureau of Meteorology, Nebraska's Drought Monitor or SAEON on an industry-sponsored single online weather portal.
- Set up the portal so that all drought applications for the entire Karoo (all three Cape Provinces) can be made through the same site.

#### **4. CONCLUSION**

Drought is, and will continue to be, an increasingly familiar feature of the arid western half of South Africa under climate change. Outdated drought relief policies from the mid-20<sup>th</sup> century must take this reality into account so that they can be made fit for purpose once more. This work is urgent, and the financial survival of entire communities depends on it being done well.

The Australians chose to focus on building a stronger livestock industry instead of trying to rescue every farm. South Africa will ignore this lesson at our peril. The worst droughts inevitably end in humanitarian disasters, and for that, the Australian government provided appropriately too, but not under the auspices of the Department of Agriculture, Fisheries and

Forestry (DAFF). DAFF's exclusive purpose is to promote and deliver agricultural productivity growth so that viable farms can be made stronger and more internationally competitive. The owners of non-viable farms also deserve help, especially in retraining for new livelihoods; however, such social interventions do not belong under the auspices of a Department of Agriculture. This lesson, too, is ignored at our peril.

Finally, despite the hardship of Australia's Big Dry, the country remains optimistic about the prospects of small stock farming. They believe there are sufficient new technologies to support productivity growth, which can easily offset the losses in productivity caused by climate change. This kind of optimism underpins sustainable use; without it, marginal rangelands will be overexploited, stripped of their natural productivity and left as deserts. May this not be the future of the Succulent and Nama Karoo Biomes of our land.

## 5. NO CONFLICT OF INTEREST

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