Submission on the Farm Household Assistance Review

2016/17 was the most profitable year for Australian agriculture (in real terms) since 1974/75, yet by March 2018, this bounty had been squandered and those farmers and graziers who had failed to heed the outcomes of previous droughts were calling on the government to bail them out. During the same period, those who had set up management processes that allowed them to be drought prepared were able to successfully ride out the crisis without the need for assistance. We completely destocked in early February and, as a result, were able to buy back in in mid-April, albeit at half the numbers. We have spent $50/head on high protein supplement and have not fed since the end of August. Our cattle have gained 150 kg/head in the time we have owned them and our business will make a profit this year. I have attached a paper outlining our drought management strategies. Because we have a drought plan with identified trigger points for action, we are ineligible for any support.

This is bad policy. Drought assistance payments that are tied to inappropriate management incentivise the continuation of those practices.

There was much comment that the drought snuck up on people. My data shows that rainfall started to decline from March 2017 and trended down continuously to June 2018. The writing was on the wall from early 2018. Anyone taken by surprise wasn't looking.

On the basis of the above, I would make the following suggestions regarding FHA in the future:

- That farmers who are receiving FHA have an obligation to maintain their natural resource base in a resilient condition by maintaining a minimum 50% groundcover to prevent soil loss to erosion and obtain a quick response to rainfall events during the drought. There are mutual obligations attached to most other welfare payments.
- That farmers who receive FHA should register a drought management plan for future droughts. If, in future droughts, they fail to follow this plan they become ineligible for assistance payments. Alternatively, a policy of one strike and you're out could be implemented. Landholders would be supported through their first drought but would be ineligible for support in subsequent droughts.
- That FHA payments cannot be used for discretionary expenses, e.g. private school fees. Recipients of FHA should be given a card with similar restrictions as imposed by government intervention in Indigenous communities.
- All off-farm assets should be liquidated before a person becomes eligible for FHA.
- To address equity issues, all landholders in drought affected/declared areas should be eligible for the FHA payment. If it applies equally to all landholders, paperwork could be minimised. This would also overcome the problem discriminating against good managers. There is very little in the way that governments respond to drought to encourage landholders to do the right thing.

The FHA and other programs such as stock and fodder transport subsidies do nothing to encourage farmers and graziers to take responsibility for their own decisions. Unless mutual obligations are attached to these payments, they will continue to fail to change drought management strategies.

Maintaining Resilience in Grazing Systems: Effective Management of Drought

Abstract

Drought may be defined as a long term, month on month rainfall deficit. Its impact is a similar decline in the energy stored in pasture. This energy may be stored as standing feed, conserved fodder or fat on the animals back. Eventually, the energy stored by the pasture is insufficient to maintain livestock, their condition deteriorates and their productivity falls. The point at which the energy stored by the pasture is less than that required to maintain stock condition defines the point at which stocking rate exceeds carrying capacity and the grazing system crosses a threshold into a less robust state. Whenever this happens, it is a case of management failure not an exceptional climatic circumstance. This paper explores the conditions that define a resilient grazing system, looks at psychological and sociological impediments to management change and provides some simple management tools that have been successfully employed on our own property during the past 3 years (the driest 3 consecutive years on record for our district).

Introduction

Resilience thinking (Walker and Salt, 2006) studies the capacity of systems to recover from disturbances without losing their original function. Resilience views systems in a social ecological sense, i.e. there are likely to be human as well as environmental considerations. There are thresholds that define the condition (or state) that the system is currently in, how these relate to an ‘ideal’ state and what happens to the system as it crosses these thresholds. As the state of the system declines, its capacity to recover from disturbances diminishes. Are droughts really getting worse or are grazing systems becoming less resilient? The perspective on this question determines the appropriate solution. If droughts are getting worse the only solution may be to destock more marginal areas. If the system has been managed into a less resilient state so that droughts only look worse, adopting policies that allow landscape recovery may be more effective than Exceptional Circumstances payments which can exacerbate landscape decline. It will be shown that there are 10 key threshold conditions that need to be met to ensure resilience in grazing enterprises.

Grazing in Australia is predicated by some important considerations:

- Australia is the driest inhabited continent on the planet with some of the poorest and oldest soils.
- Most of Australian agricultural land is marginal in terms of rainfall and temperature.
- Grazing is the dominant industry of the marginal lands.
- Drought is a common management issue. Data from the Bureau of Meteorology shows that, in most cases, median rainfall is less than mean rainfall, implying that it is more often dry than wet. While it may be true that

there is money in mud, success in agriculture in Australia is more likely to be associated with the capacity of landholders to manage dust.

- Global warming is happening and will lead to increasing climatic variability with any rain that does fall being less effective due to higher evaporation, and
- Two centuries of experiencing drought has not led to any appreciable improvement in its management. Denuding the landscape as a drought management strategy may have permanently pushed grazing systems into a less resilient state, meaning that smaller and smaller disturbances will be required to make them non-viable, read approach the government for Exceptional Circumstances relief.

So why can a drought, in a drought prone country, still surprise land managers to the point where it is considered exceptional? The resilience of the business in the face of drought is reliant on management decisions. Making good decisions is a science, not an art. It requires reliable data that provide trigger points for management action.

Don’t even think about it

In his book ‘Thinking: Fast and Slow’ Daniel Kahneman talks about the two selfs, the experiencing self and the remembering self. The experimental data show that all that most people remember of an experience is the mean and the end point. If we consider this in the context of drought, the mean is only half as bad as the total experience and the rainfall event that ends the drought probably leaves those managing it feeling OK. On balance, the memory of the experience is better than the actuality and the impetus to change is diminished. Learning is not defined by the experience (experiential learning) but by the memorability of the experience. By and large, people don’t learn from experience! There is a message here for extension providers who want to provide land managers with better drought management practices. The activity is more likely to succeed if delivered at the point of maximum despair, not before or after the event.

In general, people are not rational decision makers. Decisions are more likely to be based on believable narratives than impartial data analysis. This introduces the possibility of biases in the selection of the data that is used. The most common biases are those that reinforce existing beliefs and values. They confirm previous decisions even though they may not have been appropriate (confirmation bias), they relate to previous memory of similar circumstances (availability bias) and they paint the outcome in the best possible light (optimism bias). Marshall (2014) outlines the many reasons why humans are psychologically predisposed to ignore climate change. These are just as relevant for most other disasters, i.e. why people rebuild in the same place after a flood, fire or storm has demolished their homes. It is perhaps instructive that the stories that come from disasters are not about the degradation of the environment but the heroic survival of the people involved and the compassion of those from outside the affected area who provide assistance.

Sociologically, we are tribal in nature. The natural organisational group for humans is that small group of peers with whom they share ideas, values and beliefs. Given this context, it is highly unlikely that any individual member of the tribe will adopt perspectives that disrupt the status quo of the group. The group provides

confirmation to the individual, is the most available source of information for decision making and shared narratives deliver optimistic support for the survival of the tribe. The tribe becomes the in-group while others with different ideas, values and beliefs become the out-group. To maintain the integrity of the in-group it is necessary to disparage the perspectives of the out-groups, making it more difficult to change management practices. Again, there is a message for extension agents. If your perspectives are the same as those of the group you are working with, you reinforce their beliefs. If they are not, you are unlikely to have much impact.

As a group, farmers and graziers tend to look outside their business for excuses for failure rather than looking inside their business for reasons to succeed. The common thread of reasoning for the lack of profitability in farming tends to focus on the supermarkets, imported products, subsidies in overseas countries, not enough rain, greenies, Labor governments, red tape, green tape and the list goes on. Perhaps, just perhaps, somewhere in there, Australian farmers made a few bad decisions of their own. However, the narrative suggests that this is not the case. It is incredibly difficult to propose management change in managing natural disasters if those involved are unwilling to challenge the veracity of existing decision making. The reliance on excuses for failure absolves land managers from responsibility for their financial position and thrusts that responsibility back onto the community at large through government support for natural disaster relief to land managers. This raises an ethical issue as to whether a group who manages their business to minimise tax should be supported by those who have no ability to do the same, i.e. low income workers. The reality is that, if land managers do all the things that are in their power to control, what happens outside the business is pretty much irrelevant.

For the most part, land managers are reactive decision makers. Their situation is allowed to reach a crisis point before they start responding. Floods, fires and biosecurity problems can develop rapidly and are hard to manage proactively but, in the case of drought, reactive management is unforgivable. Droughts intensify over long periods with many warning signs along the way.

Most landscape degradation is the result of extreme events. The most common extreme event confronted by Australian farmers is drought broken by flooding rain. Loss of ground cover as a result of poor drought management increases soil loss from the ensuing rainfall events. Some form of planning to mitigate this problem would seem prudent. Reactive decision making leads to added stress for decision makers. As stress increases, IQ falls leading to a reduced ability to act rationally and a greater reliance on past habits (reversion to previous drought management strategies, whether they worked last time or not). The net result for many land managers has been declining physical and mental health and increasing debt with limited capacity to repay.

Building resilient social systems can thus be defined by the first four threshold conditions:

1. Sufficiently physically healthy to do the work that is required.
2. Sufficiently mentally healthy to make the necessary decisions in a timely way.

3. Sufficient surplus of income over costs to allow for lifestyle choices and savings to buffer disturbances and other risks.
4. A level of debt that does not compromise the solvency of the business.

People who are vulnerable for either health or financial reasons are more likely to make bad decisions such as becoming unrealistically optimistic about the chances of business recovery after the disturbance. Increasing incidence of divorce, suicide, depression and burgeoning debt may all reflect a lack of social resilience.

To stock or not to stock….

Resilient natural systems are able to buffer themselves against disturbance and return to normal function after the event. They are also more likely to be socially resilient because they make better use of free ecosystem services and require less financial input to achieve any given amount of production. Although the two key concepts of carrying capacity and stocking rate are generally applied to grazing and used interchangeably, they can also be applied to cropping situations. However, the two concepts measure different things.

Carrying capacity is a measure of the ability of the natural resource base to support an enterprise intensity without compromising its capacity to maintain that intensity in the long term. This can be converted into either crops/year or head/ha. The natural resource base includes such things as soils, rainfall, temperature and vegetation. Carrying capacity can only be increased if the natural resource base is improved, e.g. applying fertiliser to improve the quality of the soil.

Stocking rate is a measure of the actual enterprise intensity currently using the natural resource base. Stocking rate is always a management decision, either conscious or by default.

The natural resource base, at any point in time, has a strictly limited capacity to produce. This limitation will be determined by the most limiting factor of production. On this basis, the natural resource base is never the problem. Tongway and Hindley (2004) make the salient point that in rangelands situations there is no such thing as not enough grass, only too many grazers. The problem is always one of stocking rate which is a management decision. The natural resource base cannot be blamed for non-sustainable resource use.

From this, it is possible to make some points about achieving resilience:

- Resilience requires that stocking rate never exceed carrying capacity.
- Carrying capacity is highly variable due to the inherent variability in climate and seasonal productivity of plant species.
- By definition, stocking rate should be equally variable unless inputs from some other sources are added to the property’s resource base.
- Carrying capacity is defined by resource condition.
- The existing natural resource condition defines the thresholds within which the system is operating (the state of the system).

- Crossing any threshold into a worse condition (state) leaves the system (property) in a worse condition that is less able to return to its previous level of productivity.
- Exceeding carrying capacity for prolonged periods will leave the system in a permanently lower state, e.g. soil erosion, loss of soil carbon, loss of valuable species, etc., with a lower carrying capacity.
- With the system moving into increasingly lower states, smaller disturbances have increasingly more devastating effects.
- As the system crosses thresholds into worse states, it becomes increasingly difficult to maintain social resilience, i.e. make sufficient profit and maintain personal wellbeing.

Rain and other bruises….

What does a resilient natural resource base look like and why? Although farming the driest inhabited continent, Australian farmers and graziers garner very little from the rain that falls. Based on Agsurf data from ABARES, rangeland graziers convert about 5% of the rain they receive into production. For example, the Wambiana trials in central Queensland achieve live weight cattle production of about 30 kg/ha/yr from 600 mm of average rainfall or 1 kg/ha per 20 mm. This equates to 0.8 Dry Sheep Equivalents (DSE)/ha and a rainfall use of about 30 mm/yr, 5% of average rainfall. Technically, a system running at 60% of rainfall limited production should produce 1 kg/mm/ha/yr.

There are six indicators of natural resource health that define a resilient system (Gardiner and Reid, 2010). These are:

5. Sufficient groundcover to minimise runoff.
6. Sufficient litter (dead detached plant material lying on the soil surface) to minimise water loss to evaporation.
7. Sufficient green leaf area (DGM) to maximise energy capture, help minimise evaporation through the shading effect and provide sufficient feed for production.
8. Sufficient diversity of species to utilise rain when and where it falls. This would include C3 and C4 plants, annuals and perennials, grasses and legumes and trees and shrubs.
9. Sufficient shade and shelter to maximise plant and animal performance.
10. Soil conditions that is not being compromised by physical, chemical and/or biological deterioration.

In general, rangeland graziers use less than 5% of the available rainfall in production. Is a season that only delivers 50% of the average rainfall more of a problem than management practices that use less than 5% of what is available in a good season?

Tips and tools

Ten threshold conditions that bound resilient grazing systems have been identified. These are not negotiable and should be in place 100% of the time. Failure to meet

any of these means that the system as a whole is in a less than ideal state. The further these are from ‘ideal’, the longer it will take the system to recover from disturbance and the smaller the shock required to create a disaster. Indicators 5, 6 and 7, above, can be used to determine whether the system is operating within its carrying capacity. If any/all of these are not met, stocking rate exceeds carrying capacity and the system will eventually fail if they are not acted on.

There are some other tools that are helpful in decision making. These include:

- The use of rolling rainfall as an early warning device. Droughts do not turn up overnight. They are the product of a long, slow decline in month on month rainfall. In our own case, we have known that we needed to reduce our stocking rate by one third since February 2013, and reduce it to 40% by October 2014. Consequently, 2014/15 has been our most profitable year to date.
- Which events/dates are crucial to the grazing enterprise? Again, in our situation, autumn and spring rainfall are critical. Thus, low autumn and/or spring rainfall triggers selling decisions.
- Constantly ask the question ‘What is the worst thing that can happen if I get this decision wrong?’ If I sell and it rains I build buffer capacity into my natural resource base. If I don’t and it doesn’t rain……..
- The best drought management strategy is money in the bank. It takes most of the uncertainty out of decision making and allows earlier responses to either feed or sell. Having off-farm liquid assets may be a better strategy than tax minimisation.
- Have a written disaster management plan that identifies trigger points and values for decisive actions. Use the plan!!

Conclusions

There are a handful of indicators that define the thresholds that bound resilient systems. At their heart is the concept that stocking rate must never exceed carrying capacity. An historic predilection to ignore this premise means that the state of the natural resource base has declined and is in a less than ideal condition. This can only be reversed by conscious management decisions to make it happen. Some tips and tools to ensure that the state of the system does not deteriorate further have been presented. **But at the end of the day it’s up to you!!**

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