

Adapting to climate change: concentrate on getting the basics of property management right

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Keywords: grazing pressure; business plan; distractions

Abstract

A pastoral property manager has many issues to deal with and a surprisingly large number of options to consider. Many of those issues can relate to family or personal matters and not the traditional financial or production aspects of a business. Then there are the exhortations from modern urban media to act upon a wide diversity of “critical” matters. Many of these recently are aligned with environmental stewardship, preservation of biodiversity, food safety, animal welfare and taxing of carbon consumption. We suggest that such matters mostly have little impact on business profitability for rangeland pastoral enterprises but can create negative personal energy and distract from the main game. Income is driven largely by seasonal rainfall (which is unreliable and uncontrollable), but profitability is driven mostly by sound business management practices. Good planning, preparedness and timely decision making is needed and intrinsic to that is matching grazing animal numbers to available feed supply. If this is done well, most other controllable enterprise options will become much easier to manage for a profitable outcome.

Introduction

Rapid cheap communication over vast distances nowadays means that we are bombarded with masses of information and ideas from whoever wishes to use the media (Environmental

Graffiti 2010). Stories that get media attention tend to be sensational or from well-funded publicity groups or from highly motivated special-interest groups. The information is often emotive, ephemeral, selective or plain untruthful. Common themes are making wealth, impending or recent disaster, and political commentary.

Themes that abound in Australia at present and have agriculture as a target are climate change, carbon sequestration, carbon trading, vegetation management laws, salinity, water management, renewable energy and animal welfare. Amongst the cacophony of claims, exhortations and accusations, what should managers of a pastoral business take notice of? Pastoral businesses are strongly influenced by family and personal circumstances (Parker 2004) but we assume that the aim is to make a profit that will benefit the family/company.

The Basics

What are the basics of a successful pastoral business, apart from adequate rain commensurate with the long-term norm for the district?

- Adequate cashflow and profit
- A sound business plan and planning process
- Matching animal numbers to available feed and water
- Timely management actions
- Good cost management, especially of labour
- A reliable production and marketing system

Those basics are typical of what a technocrat, accountant and bureaucrat would say to a business manager. Yet the issues that the aforesaid manager is personally dealing with which may result in sleepless nights often include:

- Servicing debt
- Educating the children
- Family health issues
- Level of exposure to risk
- Succession and retirement plans

The family's needs are always nearby while others come and go. Fortunately, a healthy profitable business will often take care of many family and personal concerns. At times it is tempting to try something different and sometimes a change is essential to turn around a struggling enterprise. However, whatever you do as a manager, you have to get the fundamentals right and not put excessive effort and resources into peripheral issues that can only make a little difference to your profitability.

Distractions

Well-marketed 'silver bullets' that imply ease of implementation rarely withstand economic scrutiny. Conversely, complacency or complexity of issues can prevent some managers from acting on matters that greatly influence business performance. Rangeland/pastoral businesses always deal with high levels of climate risk; so predicted climate change-driven scenarios are simply an embellishment of normal business. Sea level rises are not going to have any impact on inland Australian resources. Predictions say that northern Australia will get wetter and southern Australia will become drier (IPPC AR4 2007; Suppiah *et al.* 2008). Presumably then, halfway between, districts around Bourke and Alice Springs will not see any overall change in mean annual rainfall.

Much of Australia has had an unusually long run of poor seasons over recent years. However, some areas have had an exceptionally good run of seasons, e.g. Tanami Desert and Nullarbor Plain (NRM 2004). They just don't happen to have many people earning a living off them. Meanwhile surface water supplies in heavily populated regions have almost dried up at times so that the media bemoan that millions can't water their lawns or wash their cars. Rangeland people deal with that water scarcity all the time. They know that they have to keep their stock waters in good working condition or next summer they could be in big trouble with large stock losses or overgrazing of the adequately watered sections of a property.

Of great relevance is whether frosts and heatwaves become more or less frequent.

Research shows that El Niño conditions, i.e. drier than normal in Australia, correlate with

fewer frosts (Stone *et al.* 1996) but is that well-documented cyclical event exacerbated by global warming? Is the El Niño effect of greater importance to pastoralists than global warming?

Increased carbon dioxide concentrations in the atmosphere are real and that can enhance growth of some plants (Poorter 1993) but there are other complicating interactions involving atmospheric water vapour concentrations that generate scientific debate about the overall effect of changing CO₂ levels (Cook 2007). Is this going to lead to abnormal changes in the balance of species in rangeland pastures and to their biodiversity values? All organisms have the potential to adapt to changing circumstances, such as change in climate, and so predictions of extinctions due to global warming (Sinervo *et al.* 2010) seem alarmist.

Documented extinctions in the absence of mild environmental warming have been caused by overhunting and tree clearing (the dodo – American Museum of Natural History 2010), violent asteroid impacts (dinosaurs – Cowen 1999), by evolutionary change (Darwin's theory – Allaboutscience 2010) and probably by extreme climate change. Big, temporary shifts in species composition in our rangelands in response to erratic rainfall will still occur and have a far greater impact on pastoral production than any due to altered atmospheric CO₂ levels.

The ability of pastoral businesses to be more successful by engaging in trading future carbon credits is probably illusory. The rules are not yet decided and many assumptions seem very tenuous, e.g. in respect of bushfire and termite destruction of wood. CSIRO (2009) says that the opportunity for carbon sequestration in Australian rangelands is very slim. So we suggest that you don't make it a significant part of your business plan. Marketing your main produce is, for example, a much more important thing to focus on in the near future. However management systems that promote increased organic matter (which is rich in carbon) in the soil promote healthier landscapes with the capacity to produce more forage long term and be more resilient when exposed to disturbance (Herrick 2000). This is what will drive long-term better business performance.

Likewise, having a sound risk management strategy for dealing with the next drought – it will come along too soon for many – is far more important than whether your mean annual

rainfall over the next 50 years may drop or increase by 5-20% (+/- 20% for uncertainty – Quiggin 2008). Far more important for your medium term financial status is a return adequate to service debt, to reinvest in the business and to cover family priorities such as appropriate education for your children.

Conclusion

This leads to the crux of doing the basics right. If more animals are continually run than can be fed safely, the country and the business will eventually suffer. The 'hungry fines' in the wool business paid well on new country that had inherent reserves in the soil and pastures. The country could withstand overgrazing for a while but, once the surface soil started washing or blowing away or the unpalatable wiregrasses or woody weeds took over, the whole story changed and the financial viability of the land often fell badly, eg. the Cobar district experience. Selling up is an option, so is spending large amounts of money to rejuvenate pasture, or going into a subsistence lifestyle, or taking off-farm jobs.

However, no matter which option is chosen, making a long-term profit from the property via a pastoral enterprise still requires the total animal grazing pressure to be adjusted to reflect the edible feed available and an effective monitoring and business evaluation process. If a property now has rundown pastures then a good, long-term rejuvenation plan will probably be needed to return the pastures to somewhere near their original carrying capacity. Excellent rains experienced in many districts over the 2009/10 summer are perfect for starting such a process.

We think that your business in your working lifetime will benefit much more by putting your energy and creative skills into good grazing and business management than into uncharted areas related to carbon sequestration, carbon offsets and low methane livestock. By all means use alternative renewable energy sources such as wind and solar energy where they are cost-effective.

References

Allaboutscience (2010) Evolution. <http://www.allaboutscience.org/evolution.htm>

American Museum of Natural History (2010) Dodo.

http://www.amnh.org/exhibitions/expeditions/treasure_fossil/Treasures/Dodo/dodo.html

Cook, J. (2007) Evaporating the water vapor argument. Skeptical Science.

<http://www.skepticalscience.com/Evaporating-the-water-vapor-argument.html>

CSIRO (2009) An analysis of greenhouse gas mitigation and biosequestration opportunities from rural land use. CSIRO St Lucia Qld. <http://www.csiro.au/resources/carbon-and-rural-land-use-report.html>

Cowen, R. (1999) The K-T extinction.

<http://www.ucmp.berkeley.edu/education/events/cowen1b.html>

Environmental Graffiti (2010) 5 Deadliest effects of global warming.

<http://www.environmentalgraffiti.com/sciencetech/5-deadliest-effects-of-global-warming/276>

Herrick, J. E. (2000) Soil quality: an indicator of sustainable land management? *Applied Soil Ecology*. **15**, 75-83.

IPCC AR4 (2007) Projected climate change and its impacts

http://www.ipcc.ch/publications_and_data/ar4/syr/en/spms3.html

NRM (2004). Australia's variable rainfall. Qld Dept Natural Resources. Indooroopilly.

[wallchart]

Parker, T. (2004) A multi-level family business choice model: A dichotomous approach. *The Coastal Business Journal*. **3**, 56-60.

Poorter, H. (1993) Interspecific variation in the growth response to an elevated ambient CO₂ concentration. *Vegetation*. **104/105**, 77-97.

Quiggin, J. (2008) Uncertainty and climate change policy. *Economic Analysis. & Policy* **38**, 203-210.

Sinervo, B. *et al.* (2010) Erosion of lizard biodiversity by climate change and altered thermal niches. *Science* **328**, 894-899.

Stone, R. C., Nicholls, N., and Hammer, G. (1996) Frost in northeast Australia: Trends and influences of phases of the southern oscillation. *Journal of Climate* **9**, 1896-1909.

Suppiah, R., Hennessy, K. J., and Whetton, P. H. (2007) A comparison of Australian climate Change projections based on IPCC TAR and AR4 climate model simulations. *In: MODSIM 2007 International Congress on Modelling and Simulation*, Oxley, L. and Kulasiri, D. (eds) December 2007, 518-524.

Silcock, R.G. and Taylor, K.M. (2010). Adapting to climate change: concentrate on getting the basics of property management right. *In: Proceedings of the 16th Biennial Conference of the Australian Rangeland Society*, Bourke (Eds D.J. Eldridge and C. Waters) (Australian Rangeland Society: Perth).