

Keynote paper

Rangeland pastoralism: change and sustainability

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Background

Rangeland pastoralism has existed in Australia for almost as long as white settlement. While the basic products have not changed over time, beef, sheep meat and wool, the production processes have. Technological advances in animal health and husbandry and the substitution of plant, machinery and infrastructure for labour, have substantially increased the potential for improved productivity and operating efficiency.

The background environment has not changed. Droughts and flooding rains come and go as always and the social issues resulting from isolation still persist, ameliorated to a degree by advances in communication technology. This point is so often just accepted. How dedicated are the owners of rangeland pastoral businesses to business success? Do they really want a first-class business, despite its location, or are they more inclined to want a job for life with livestock, attempting to contribute to the perpetuation of the historical romance of the great outback?

The broad economic landscape has changed, with the contribution of rangeland pastoralism to the national GDP continually falling from early supremacy to barely registering today. As people disappear from the pastoral rangelands in the interests of business labour efficiency and/or social reasons, and as the romance of pastoralism history inevitably fades, rangeland political clout wanes.

In summary, rangeland pastoralism is still there, doing much as it has always done, but more efficiently. "Efficiently" is the keyword because it raises the question of whether improved efficiency is maintaining the sustainability of rangeland pastoralism, if it ever existed. This issue is central to any consideration of whether rangeland pastoralism will still be there in the longer term, or not. Can operating efficiency gains alone maintain the presence of rangeland pastoralism, assuming enough pastoralists are prepared to accept the lifestyle issues? More importantly, where is base performance now? In its current state, does rangeland pastoralism provide evidence that it is sustainable?

Sustainability

To address the questions raised, it is helpful to adopt some of the established thinking and principles of modern sustainability theory (Brundtland, 1987). The starting point is to define the various areas of capital that must be preserved or managed in the interests of overall sustainability and this was done for agriculture in general by Cocklin and Dibden (2005, p2-3.). The authors proposed five forms of capital, two of which are arguably more important because they are under the direct control of management and, unless they are sustainable, the other three forms are rendered irrelevant. Those two forms are "Natural" and "Produced". "Natural" refers to the environment, specifically rangeland condition for the purpose of this paper, and "Produced" refers to cash and wealth, or the financial status of the business.

These two forms of capital are critical because they both have the inherent capacity to bankrupt a rangeland pastoral business if mismanaged. If the natural resource base is continually degraded, it

will ultimately get to a point where, amongst other things, the forage response to rainfall will fall below the threshold needed to carry sufficient livestock numbers for a pastoral business to continue operations. (Ash, McIvor, Corfield, & Winter, 1995; Letnic, 2000; Stafford Smith et al., 2007; Tongway, Sparrow, & Friedel, 2003). On the way down this path, either the herd will become less productive or it will decrease in size. Alternatively, if financial and business matters are continually mismanaged, equity will erode all the way to bankruptcy, usually hastened by the demands of a financial institution.

Arguably, the path to bankruptcy through financial mismanagement is shorter and for no other reason than this, the financial sustainability of the business is given primacy here. This is a complex issue when considering the sustainability of natural and produced capital because the two are intimately linked in rangeland pastoral businesses. In fact, the aim to achieve sustainability in both concurrently must often deal with mutually exclusive antagonism, particularly during drought, but the detail behind this statement goes beyond the scope of this paper. The issues involved with financial sustainability are easier to measure and less controversial. The cash is either in the bank, or it isn't.

The current situation

In a recent large-scale study (McLean, Holmes, & Counsell, 2014), a sustainability approach was taken to examine the status of the northern beef industry at the producer level. Twelve years of historical data were used from every beef producing region in northern Australia. Consistent with the requirements of sustainability theory, the authors proposed a set of definitional criteria for financial sustainability. To be financially sustainable in the long term, a northern beef business needs to:

1. Generate a total business return that meets or exceeds its cost of capital.
2. Fund all current operating expenses and operational capital expenditure through internally generated working capital.
3. Remunerate its owners adequately, at least to the standard of the average wage earner.
4. Have the capacity to re-pay debt principal in a timely manner.
5. Where applicable, be able to survive business succession with the business and the family remaining intact.
6. Where applicable, provide for the independent retirement of the existing owners.
7. Survive and prosper in the long-term without the erosion of environmental capital (environmental sustainability).

Based on these criteria, the authors found that the majority (approximately 80%) of family-owned northern beef businesses, most of which were based in the rangelands, were financially unsustainable. There was no evidence that there had been any significant change in this finding over the twelve years examined. Although there was a range of factors causing this, including lack of operating scale, the most important operational factor was the poor productive capacity of the beef herds, and hence their income earning potential. Although there were regional differences in average herd productivity, indicating that landscape productivity played a part, most herds in all regions performed well below the potential shown by the minority of highly productive herds in those same regions. In real terms, the beef price declined during the survey period, but productivity gains were too small to offset this.

The only definitional criterion not measured was the last, namely, the potential erosion of environmental capital to maintain financial capital. Analysis showed a steady increase in cattle numbers in the north over the twelve year period, but the relative contribution of a stocking rate increase, or the opening up of previously un-grazed landscapes was unclear. Fortunately, it is now technically possible to assess the status of environmental sustainability in a large-scale study such as this, and should there be another study in the future, it is likely to be an important inclusion.

Herd Productivity

It is important to be aware of the individual components of herd productivity before further discussion on the above findings can proceed. The more productive a herd becomes, the more kilograms of beef it will produce per livestock unit. Those kilograms are a function of the herd reproductive rate, mortality rate and turn-off (or sale) weight. The relative kilogram contribution that each of these components makes to overall herd productivity is different and each of them requires different time-frames and expense to improve.

Most of the time, agricultural productivity is discussed in terms of the small incremental gains required to maintain ongoing competitiveness with declining terms of trade (Mullen & Cox, 1996). While rangeland agriculture is no exception to this, the fact remains that the productivity of the average northern rangeland herd in absolute terms, is poor and is far from being competitive now, let alone the future.

In an attempt to try to understand the causes of the findings of the study, an historic reference point is required and then some of the change considered that has taken place since that point. The year 1975 (40 years) is proposed for the purpose of discussion. If the focus is maintained on herd productivity, the following lists the more important related developments that have occurred in that 40 year period:

1. Bovine genotypes better adapted to northern Australian rangeland conditions have had increased use.
2. The B-Tec program resulted in the eradication of bovine Brucellosis and Tuberculosis.
3. The B-Tec program also resulted in much needed property infrastructure establishment that allowed many herds to be brought under tighter (or some) management control.
4. Modern vaccines and chemicals have been developed to enable effective management of all the economically significant bovine diseases.
5. There has been a great deal of research on the need for, and effective use of supplements, particularly phosphorus.
6. Commercial supplements, either "off-the-shelf" or custom blends enjoy easy access.
7. Extensive research has been conducted and extended on the required husbandry and selection of weaners, young heifers and mixed-age breeding cows to improve reproductive performance.
8. The objective description language of Group BreedPlan has resulted in herd owners being able to purchase bulls with greater assurance that herd improvement will result.
9. Agricultural economists have recognised and reported the need to understand the financial impairment created by selling young and/or light cattle.
10. Much of the technical data in the above points has been presented to university students engaged in an expanding number of rural studies courses. Specific courses and written information have also become available to pastoralists on the same topics.

Observations

Given the magnitude of that change over the last 40 years, it is hard to believe that only the minority of northern beef herds show evidence of acceptable productivity. It would appear from McLean et al., that a minority of northern beef business owners have embraced all that this change has offered and it is reflected in improved herd productivity. The majority would appear to have been passive beneficiaries of some of the change (Brucellosis and Tuberculosis eradication for example), but failed to embrace the change that required active decision making.

It is difficult to avoid concluding that the main barrier to adoption is attitudinal. Too many pastoralists seem reluctant to embrace change that will improve business performance, but takes them outside their comfort zone. This leads to speculation that other issues, such as lifestyle must be more important, in the hope that financial sustainability will just happen.

It is also important to question the broad-scale effectiveness of extension to pastoralists over that period and the wisdom of continuing various forms of support for pastoral businesses that cannot provide evidence for taking productivity and financial sustainability issues seriously. There is no reason why a simple pastoralist accreditation program could not be implemented whereby accreditation was maintained by demonstrable knowledge and skills upgrading through training. Almost every profession does this now and if rangeland pastoralism is to take itself seriously, it would be a sensible first step. This must come from within as has been the case with all the professions. If it has to be mandated, rangeland pastoralism is the loser, despite the potential benefits.

Other change

As well as herd productivity related change over the last 40 years, there has been change that has had the potential to improve general pastoral business efficiency and profitability. Some of the more significant elements are:

1. Efficient road transport of goods and livestock.
2. A wider range of markets for cattle.
3. The internet (for electronic banking and business/technical information as well as personal use).
4. Satellite phones.
5. Faster and more frequent air services.
6. Modern motorbikes, helicopters and more comfortable and fuel-efficient 4-wheel drive vehicles replacing the horse.
7. The National Livestock Identification Scheme. Although mandated for trace-back and other compliance reasons, it has made a major contribution to herd management for those who have embraced it.
8. Solar power and telemetry.
9. More efficient (and often portable) cattle handling plant and infrastructure to assist in the quest for better labour efficiency.
10. The Grazing Land Management research and application that has provided a greater understanding of, and potential to better manage, pastoral landscapes.

With a few exceptions, much of this change has not required a conscious decision on the part of pastoralists for the benefits to be enjoyed, it has just arrived and replaced or expanded what was already there. It is reasonable to conclude that all this change has not been sufficient to improve financial sustainability in isolation from the change leading to herd productivity gains.

Change still needed

The only change that has not appeared, also happens to be the most important. That is, the level of financial literacy and business skill of the average pastoralist. It does not matter how much technology is adopted and how productive a herd may become, the business that owns that herd can still fail, and does all too often, if the business itself is not well managed. In the rangelands, stockmanship, mechanical prowess and plumbing skill are more likely to attract peer respect than business skill. This is easy to understand because if you do not know what business skill is, you have no way of appraising it. The notion that \$10M or more in assets can be effectively managed without any formal training is, at best, fanciful. Today, professional managers being considered for employment by astute owners to manage pastoral assets of this size or greater do not even get to interview stage without formal qualifications. Why should owners be any different?

Strong evidence for this view on financial literacy and business skill can be found in the McLean et al. report. The authors found much of the family-owned northern beef industry to be struggling under an overwhelming burden of debt. This debt was created by a run of poor seasons, a real falling beef price, but most importantly, a total lack of the business discipline required to sit on the sidelines as

the northern land price bubble started to grow in 2004 and finally burst in 2011. The financial institutions were complicit in inflating this bubble by relaxing lending standards and are now paying the price, along with the pastoralists who did not understand what they were doing at the time. Debt can be a powerful tool to use to create wealth if employed prudently. If not, it can lead to a lifetime of financial stress and potential bankruptcy. The adverse effects of this classic financial bubble (see Tulip Bubble, 1637 for historical perspective) are still being felt and will be for some years yet as northern rangeland land prices continue to fall back to their long-term trend and the whole foreclosure process works itself out. Financially literate pastoralists with business skill are now doing their sums in preparation.

Prudent debt management is just one of the elements of financial literacy and business skill. The rather alarming fact is that too many northern beef businesses cannot afford to employ any debt at all. In these businesses, once all the operating expenses are paid, as well as the interest on the debt, there is insufficient working capital left to pay the debt principal and adequately provision for future liabilities.

To their credit, Meat and Livestock Australia (MLA) recognised this and in 2010 launched their BusinessEdge course, a two day workshop to improve the financial literacy and business skill of northern beef producers. MLA report that it has been the most successful formal course that they have yet provided in the north. There would appear to be a very strong case for this course to be a mandatory starting point if ever a pastoralist accreditation program was implemented.

Conclusion

The change that the pastoralist owners of rangeland beef businesses has seen over the last 40 years has been remarkable. This change has resulted from advances in technology, research findings and mandated programs. The evidence is that it is the change that has led to greater herd productivity that has made the biggest contribution to the potential financial sustainability of rangeland beef businesses, all other structural issues aside. Despite this, lack of financial literacy and business skill remains the biggest impediment to most pastoralists achieving financial sustainability in their businesses. The conundrum is that not one component of the technical or business related knowledge and skill required to have a financially sustainable pastoral business involves rocket science. When broken down into individual components, there is logic and simplicity that is within the grasp of every committed pastoralist, old or young.

The future of rangeland pastoralism as an industry is moot, if only the minority (approximately 20%) of businesses can satisfy the criteria for long-term financial sustainability. At this stage, it is uncertain if concurrent environmental sustainability was required to be demonstrated, whether moot would change to certainty. This rather bleak position needs to be balanced by a more important conclusion. As a function of all the change discussed in this paper, it has never been easier for rangeland pastoralists to formulate the management protocols needed for long-term financial sustainability. It's just down to attitude.

References

- Ash, A. J., Mclvor, J. G., Corfield, J. P., & Winter, W. H. (1995). How Land Condition Alters Plant-Animals Relationships in Australia's Tropical Rangelands. *Agricultural Ecosystems and Environments*, 56, 77-92.
- Brundtland, G. H. (1987). *Our Common Future World Commission on Environment and Development*. Oxford: Oxford University Press.
- Cocklin, C., & Dibden, J. (Eds.). (2005). *Sustainability and Change in Rural Australia*. Sydney: UNSW Press.

- Letnic, M. (2000). Dispossession, degradation and extinction: environmental history in arid Australia. *Biodiversity and Conservation*, 9, 295-308.
- McLean, I., Holmes, P. R., & Counsell, D. (2014). The Northern Beef Report: 2013 Northern Beef Situation Analysis. Final report (Project B.COM.0348) to Meat and Livestock Australia. North Sydney: Meat & Livestock Australia.
- Mullen, J. D., & Cox, T. L. (1996). Measuring Productivity Growth in Australian Broadacre Agriculture. *Australian Journal of Agricultural Economics*, 40(3), 189-210.
- Stafford Smith, D. M., McKeon, G. M., Watson, I. W., Henry, B. K., Stone, G. S., Hall, W. B., & Howden, S. M. (2007). Learning from episodes of degradation and recovery in variable Australian rangelands. *Proceedings of the National Academy of Sciences*, 104(52), 20690-20695. doi: 10.1073/pnas.0704837104
- Tongway, D. J., Sparrow, A. D., & Friedel, M. H. (2003). Degradation and recovery processes in arid grazing lands of central Australia. Part 1: soil and land resources. *Journal of Arid Environments*, 55(2), 301-326.