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# **Woody weeds, wabbits and weconstruction: Australia's rangelands: A future vision**

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## **Abstract**

Research and Development in the rangelands of Australia has typically been reductionist in nature, focussing on segments of what is in reality a deeply integrated system of interaction containing social and natural elements. For example, work on production and productivity has been poorly integrated with the issues of social systems (markets and marketing) and ecological sustainability, biodiversity and lately carbon storage and sequestration. The landscape's main resource has been seen as based in agriculture, and this in turn has been driven by the issues of production and productivity

Agriculture faces increasing economic pressures in terms of long term net returns; in terms of political and social influence and in terms of wider community values surrounding natural resource management, food production systems and responses to climate change.

Accommodating this new and exciting future, it is argued that there needs to be changes in both community attitudes and the direction of scientific research. Community attitudes need to be imaginative, proactive and recognise the changed economic, social and environmental context that rangelands inhabitants now find themselves in. For scientists, the challenges are similar, but also include the need to work in an interdisciplinary manner, to see research and development as underpinning and informing management as well as integrating research more fully with all areas in which it has an impact.

## Introduction

The title of this talk may sound strange and somewhat childish, but when I first came to live in the rangelands - almost 30 years ago now – when people spoke of what was needed to solve the issues then being faced in the western division of NSW, it usually boiled down to finding solutions for three things: woody weeds, rabbits and reconstruction. As it was enthusiastically put to me, “if solutions were found for these three issues, then pastoralists in the division could return to running the sort of sheep numbers that they used to run, employment would be increased and the wealth would flow again ...” The western division of NSW is just one small subset of the rangelands of Australia, but during the course of my subsequent travels through the bulk of Australia’s rangelands, I gained the impression that at that time many communities echoed a similar desire – a desire to return to the “good times” of the past.

I make the previous point to illustrate the fact that thinking and attitudes have moved on. There is now a general recognition that the past is the past and that we can and should never return. Although seemingly small, this understanding by both scientists and the communities of the rangelands is absolutely essential if social systems and ecosystems are to exist in a complementary alliance that supports a sustainable future for both.

When I said coexist in a “complementary alliance” I chose the words carefully as this words underpin another significant shift in thinking. The settlement of the rangelands has been a history of exploitation. The value of the rangelands was seen in agriculture and its “use” as a factor of production in such enterprises as wool and red meat. The landscape was valued in these terms. Further, the loss of landscape value (as valued in these terms) was seen as justifiable in the context of being a factor of production.

There is now a growing recognition that the landscape has many other elements that are of value to the local and wider community and importantly, some of these elements are crucial in supporting the rangelands communities themselves. The ideal that healthy ecosystems are fundamental to healthy social systems is now generally accepted. Our task – the task of rangelands scientists and local communities, is to fully embrace this concept, and through

imagination, understanding hard work and persistence, progress to a stage where the wider community fully understands and values the rangelands and its communities.

In this essay I seek to demonstrate how the various components of the rangelands – be they social, economic, ecological or whatever, are all linked in such a way that any change to one element either directly or indirectly eventually effects the systems as a whole. While this is an elementary concept and I suspect few would argue with it, the reality is that this has not been how we have “managed” the landscape, either in terms of its use or in terms of scientific research.

The future of the rangelands – socially, economic and ecologically, lies in the hands of its users. That it has a dry and harsh climate that is extremely variable is a given. The rangelands has a rich and exciting future, but this future will only be realised by looking forward, by thinking differently about the range of values the landscape has to offer, and by scientists, policy makers and the community working together in a unified manner towards a common goal.

### **Thinking is Systems**

Thinking in systems is not new – it’s an old concept, but it has great relevance when dealing with complex systems like the semi arid natural systems that are the Australian rangelands. One premise of systems thinking is that the entity being studied is more than just the sum of its component parts. I like to use the concept also to mean that everything is interrelated and that action in one part has subsequent effects across a number of other component parts. For example, there is an inter-relationship between natural systems (the environment) and social systems (people) whereby changes to one affect the other. This relationship is obvious in examples such as the problems of the Murray Darling, less obvious in examples like the increase in soil acidity across eastern Australia and even more subtle in examples like the effects of the cessation of traditional burning practices across the northern savannah. An even less obvious example is what are the ecological effects of the reduction in live exports to Indonesia? Will grazing pressure be increased or decreased? Will

grazing patterns be changed with the inclusion of more *Bos taurus* blood into *Bos indicus* herds (should this happen)?

The relationships are endless, both from the influence of social systems on natural systems and also from changes in natural systems and how they affect social systems. However, as obvious as they seem they are all too often ignored. Failure to recognise and accommodate these interrelationships leads to bad science, bad policy and bad land-use.

Let's just think about some of these and show how, when systems thinking is not applied, bad outcomes emerge. The introduction of introduced pasture species, for example buffel grass, has been of benefit to agriculture – at least in the short term, but has been devastating for the environment. The spread of buffel grass across the rangelands, especially in central Australia, has been devastating for the natural environment, leading to the loss of species, loss of plant diversity and the loss of resilience.

Further examples relate to institutional policies such as historic drought policies that led to negative consequences to both the environment and arguably in the long term to the recipients as well (making them further dependent on support). Lease conditions that are based on use rather than on land condition (as they have been in NSW) have been effective in an administrative sense, but in terms of maintaining or improving the condition of the natural resource are highly questionable. One reason for this emphasis on use as opposed to condition could well be that there is no general agreement on what outcome is required by measuring land condition. Is the desirable condition one that is focussed on agriculture, or is it one that is focussed on ecosystem maintenance and sustainability. If not, where is the compromise between them? The answer remains cryptic, simply because we do not know enough about what is desirable or sufficient in terms of ecosystems and there is a similar lack of knowledge about the role of agriculture and other landscape values (like carbon and ecosystem services) that are emerging.

It is the role of science and scientists (both social and fundamental), the role of policy makers and community leaders in the rangelands, to play a greater and more proactive part

in establishing a path forward for the future that anticipates and accommodates social and political goals with the ecological requirements for sustainable and functional ecosystems.

### **Production and productivity**

I began by indicating my concern for the constant emphasis on production and productivity, not only because it indicated a poor appreciation of the multiple values the rangelands have to offer, but also because I have concerns about the usefulness of such a paradigm. While it is appealing to scientists and researchers as it allows them to concentrate on “bits” of the system, it also has that logical ring to it from a producer’s perspective. However, the value of the constant emphasis of this is questionable.

Consideration of where agriculture (in general) is heading, is informative. Over the last 30 years agricultural costs have been rising faster than the returns from agriculture. The farmer’s terms of trade have been constantly falling over this period and are now roughly half what they were in 1974. In real terms, the value of agricultural output has been falling, and has also been falling as a percentage of Australia’s GDP. Agriculture’s contribution to GDP has fallen from 18% in 1974 to just under 3% in 2009. In that period farm debt has doubled. It is interesting to note also, that between 1981 and 2009, while the price of manufacturing beef has remained roughly stable, the price of rump steak as sold in retail markets has gone up nearly 300%. Live cattle exports in the north are probably an exception, but they are now faced with a different range of issues.

One could always argue how exact the figures are, but the reality is that the most important message is in the trend. The role, the value and the perceived importance of agriculture has significantly changed over the last 30 years. Not only does it contribute far less to the total wealth of the economy than it did, there are fewer people doing it. There are less people in the rangelands, they have fewer votes. There are less people in parliament to represent them. Critically, the real value from agriculture is increasingly generated post the farm gate, where the goods that are produced on farms have value added to them by people and industries situated a long way from the bush.

There are many messages from this, but the one that I would really like to push in this context is that the emphasis on production and productivity without due regard to the changing context in which agriculture – especially agriculture in the rangelands – finds itself will simply be a race to the bottom. If the rangelands agriculture continues to produce the traditional products of wool and red meat, the life of these industries will be strictly limited as there will always be someone elsewhere in the world who can produce the same product cheaper. Even if they can't, the real value is added post farm gate and so producers are unable to capture it.

## **New Horizons**

Lest people feel that I am saying that we should go out of wool and red meat production in the rangelands, I am not! What I am saying is that we need to differentiate the product, to add value at the farm or station stage, and importantly capture some of the *other* values and wealth that the unique landscape that we live in offers. For example, great leadership has been shown by OBE Beef from Birdsville in marketing an organic product around the world. Their product captures the ability of the Australian rangelands to produce a quality product that is hard for others to do at a similar price. Customers value and are prepared to pay more for a quality such as “organic” and importantly, organic that comes from “outback Australia”.

I have always been surprised that the wool industry has not developed such a product in the rangelands. I am sure that there would be a market for a product that was produced without the use of chemicals, in a manner that accommodated animal welfare issues and was also compatible with the goals of a sustainable environment.

The thread in all this is that we all live in a part of Australia which, if considered imaginatively and used properly, can deliver and add a whole range of values that the wider community value and are prepared to pay for. The opportunity for wool and red meat are just the very beginning.

A station, which should remain unidentified, and is situated in one of the remotest parts of rangelands, makes over \$80,000 in six months in tourism alone. They employ no extra people, provide no meals except a cup of tea, but do provide an experience that people are willing to pay for. The experience is just being out in remote Australia for 4 hours and being told what life is like there and shown a few sand hills and creek channels. There are many different forms of tourism, and it will only be one of the many pieces of the future jigsaw that will be the rangelands. An old marketing adage says that it is very hard to sell something you don't love and appreciate yourself!

I am constantly amazed at the ability of the rangelands to offer an incredible range of attributes that the wider community is willing to pay for and is increasingly desired. The list might begin with specialised agricultural products such as organic beef or wool, but also ranges from tourism (in its multitude of forms), the preservation of natural systems and biodiversity, ecosystem services, and more recently things like carbon storage and sequestration. The list indicates the range only – there may be many more areas – but in between the extremes there are a range of “products” only limited by our imagination.

### **Who's responsible?**

One thing is for sure, and that is no one and no organisation is will do it for us! As explained above, rangelands communities have little political power, they have little economic power and they have little financial power (except of course for the big mining companies, but their interests do not necessarily parallel community interests). If the potential values in the rangelands are to be utilised, then two things must happen. The first is that rangelands communities must recognise that the landscape in which they live has, for people who do not live in the rangelands, a whole range of values for which they are prepared to pay for. Secondly, we, the rangelands communities, need to identify these values and then sell them to the wider community. We need to be proactive, imaginative and energetic. The answer to the question of who is responsible is that we – the rangelands communities and people – are responsible.



One negative outcome from Federation was that the rangelands became split up and turned into the back end of many States and one territory! By doing this the power of the rangelands – the greater part of the continent – to speak as one voice, was lost. The importance of the loss of this single voice could be no clearly illustrated than the lost opportunity following the recent rains in the Lake Eyre Basin. Thousands of people have flown and driven into inland Australia to see the floods. It has been on the radio, the TV and in all the papers. But at a time when we could have been capitalising on this – saying how we, its inhabitants, look after and care for the land and its unique qualities, not a single voice was heard. It became a “unique natural event” and the fact that the ability to respond reflected the careful management of the catchment by its inhabitants was lost.

The ownership for change is clearly the responsibility of rangelands inhabitants. Identifying the potential for change and the support of this change is the responsibility of a far wider group of people. Movement in this direction is indicated by the publication of books such as “Dry Times: blueprint for a red land” by Stafford Smith and Cribb, and more recently “Desert Channels: The impulse to conserve” edited by Robin, Dickman and Martin. However, the general body of science has been slow to move.

One fundamental role of scientific research is to support and inform management. It is my belief that this has been sadly lacking in the rangelands generally. For example, there is no simple process or single accepted process for monitoring grazing management to improve environmental sustainability. While there are lots of options for developing farm management plans, where are similar planning process that relate to environmental management, the protection of high priority areas or priority habitat? Further, the long term monitoring of plant and animal communities has been insufficient to provide any reliable indication of the state of the environment. Even though this issue has been highlighted in the recent Commonwealth State of the Environment Report and in previous reports, there has been little action undertaken to correct the state of affairs.

There is a growing body of concern that if the wider goals of conservation are to be met, then there will need to be steps taken other than just buying up more and more land to set aside as national parks. One strategy gaining support is that landholders and land managers

who are already in the landscape should be rewarded for environmental management beyond the standard duty of care. If the wider community is to pay landholders to manage the environment (something that is already happening in some areas) then there needs to be well documented systems and accreditation processes in place to ensure the investor that this is happening and secondly to support land managers in continuous improvement. Clearly rangelands researchers have a role to help identify high priority areas, to develop accreditation processes and conduct research that informs ongoing management.

## **Conclusion**

The rangelands of Australia have long been part of the romantic ethos and psyche of ordinary Australians. However the characteristics that led it to be regarded in this way are now being replaced by more subtle and less well defined characteristics that are more closely associated with the concept of preservation as opposed to utilization. No longer is the romance of European people conquering a harsh environment to turn off agricultural products to feed a starving world seen as romantic or sublime.

Community attitudes have changed. The contribution that agriculture makes to the domestic economy is no longer what it once was. Associated with this is the reality too that rural people do not have either the political or economic voice that they once had. However, while the effects of this have been quick to filter down and out into the rangelands communities, the realities and implications are not so well appreciated.

It has been argued that the future of the rangelands lie in a subtle shift from seeing agriculture as of prime importance to recognising the array of alternate values that the majority of contemporary Australians (who inhabit the land other than the rangelands), place on inland Australia and its natural heritage. The lack of funding available for the rangelands and for initiatives in the rangelands from the two rounds of Caring for our Country to date, illustrates both a failure to promote the need, as well as a failure to lobby with sufficient force for funds. The rangelands is no less deserving than many other areas of Australia (and in fact, probably more so), but is all too easily dismissed.

In speaking for the rangelands, there is no single voice but, as a result of Federation, a number of solo voices that carry little weight in the broader context of the States. A vital step in progress is for the rangelands of Australia to speak as a single united voice – a voice that promotes the values of the people and landscape in which they live. What is clear is that there is currently no unified single organisation or voice that represents what is in reality, the bulk of the landmass of Australia. The maintenance of ecosystem function, biodiversity, clean, green and humane production systems and the preservation of landscape aesthetics are all part of a range of new social values that rangelands communities can cater for.

While the general rangelands community and their leaders need to accommodate the changed social and economic circumstance, so does science and scientific research. Science has a role to support the community in this changed direction by developing research that supports changed management in many of these areas. While agriculture will always be important, there are a range of other values (such as the preservation of biodiversity and species habit) that need to be supported by science. By support again I mean the development of knowledge and informed practices that support these values and are acceptable and defensible in the wider context.

It is a tragedy that there is so little long term environmental monitoring being carried out in the rangelands. Work such as that being done by Professor Chris Dickman (University of Sydney) is rare but absolutely essential if we are to ever gather a good understanding of what is happening to species and communities with whom we share the landscape. Long term monitoring is absolutely essential if we are to understand what is happening over time as opposed to short term cycles.

Finally, we should all be aware of the likely changes that come with the growing concerns surrounding climate change. For example, in terms of carbon sequestration and storage, the rangelands are ideally placed to capitalise on both, but once again the scientific community needs to provide the scientific foundations from which subsequent actions are derived. Carbon storage has other flow on benefits for biodiversity and ecosystem function, and it is the total package that should be promoted.