

Creating Contemporary Commons to Enhance Economic Productivity: A Grazing Commons in Rural Australia.

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Abstract

The loss of ecological function across landscapes and whole regions is clearly a global priority, not only because of the direct impacts on biodiversity and the processes it sustains but also the social consequences arising in communities whose very existence is dependent on this natural capital. Conventional attempts to address these issues invariably fail to capture appropriators 'wholes' and are hampered through; narrowly focused programmes, entrenched property rights, institutional impediments, economic incentives and inappropriate spatial and temporal scales.

The enduring resource systems of Common Property Resources (CPR), collectively managed appear to contribute ecological and social resilience within an external context of high risk and uncertainty. The sustaining vigour of successful common property regimes (CPR) has provided the interface through which the demands placed on the natural environment by these communities were more closely matched to the broader scale natural processes that supplied these environmental goods and services, both spatially and temporally. We need to revisit these institutional forms and determine, through application, if these social organisational arrangements are socially and ecologically robust, to deliver sustainable rural futures.

A critical step in this endeavor and one of the greatest challenges facing researchers undertaking this type of study is to strategically commence adoption of CPR concepts utilising the experience gained by institutional and political theorists and applying them to on-ground scenarios, in a variety of contexts including those in western federated nations. Once demonstrated through application, the CPR approach, with its unique qualities of flexibility, collaboration and scale, may evolve into a powerful tool capable of addressing critical issues that have to date evaded the institutional constraints of conventional paradigms.

This paper outlines the early development of one such model and details the efforts of a group of graziers in Australia who are developing a contemporary CPR from private parcels of land in an attempt to address the degradational spiral that continues to challenge them, and their rural counterparts world wide.

Introduction

Rural communities in western, federated nations are currently facing a high level of uncertainty. One certainty appears to be the emerging trend of a breakdown of ecological and production systems that farms rely on, followed by social breakdown, even the demise of rural towns. The survival of these rural communities is dependent upon the ability of landholders to sustain themselves by balancing social demands and the biophysical capacity of their landscapes with the requirements to meet debt repayments from declining returns, increasing pressure from government regulations and policies, and global markets that ignore all these factors (Industry Commission 1998, SoE 1996).

To deal with these issues, the options available to landholders are generally limited to efforts to increase production from the same piece of land. This is usually in the form of elevated inputs to raise production levels or a production intensification requiring the injection of capital. The increased demands on the system lead to a loss of ecosystem function and resilience as the natural capital base is undermined, ultimately resulting in resource degradation. A decline in the productive resource base occurs through the loss of functional biodiversity, soil structure, organic material and moisture content, resulting in the gradual loss of resilience (Risser 1995, Folke *et al* 1996). This initially manifests by extending the recovery period from events such as drought (ie, lost resilience). In a relatively short time, production systems, even some traditionally considered 'secure and productively stable' start collapsing (Ludwig *et al* 1997), farms (typically those with debt commitments) become non-viable. Eventually broader scale economic and social breakdown occurs across rural communities (Brunckhorst *et al.* 1997).

Clearly humanity has an interest in the long term production of agricultural goods and services, which is in turn are entirely supported by natural ecosystems. There is therefore a need to build a 'new agricultural paradigm' in which landholders balance production against conservation issues. This will require a fundamental shift in the way farmers manage their land to include planning for the allocation of resources for the maintenance of natural processes and the development of an enduring and restorative ecological capacity as an integral part of agricultural practices.

Overcoming existing institutional impediments such as property rights etc will require the development of new organisational forms that enable collaborative decision making allowing cohesion at social and ecological levels, flexibility to cope with a variety of forms and dynamic variables, while bridging conventional impediments and issues of scale.

CPR arrangements appear to contain the desirable elements that enable the application of these organisational forms to a wide variety of issues in a variety of contexts.

Contemporary Rural Demise.

It is striking that the superficially buoyant economies of western developed (often federated) countries hide the disaster of their rural economies, drastically falling production levels and escalating environmental and social debt. Current estimates of partial environmental costs in Australia based on loss of agricultural production are; \$243 million annually due to dryland salinity (Hill 1997), between \$143 and \$300 million annually due to soil acidification (DPIE 1991, CSIRO 1990) and \$200 million annually due to soil structure decline (LWRRDC 1993).

The magnitude of these estimates provides an indication of a deteriorating ecological resource base. Given the dependence of rural communities on these resources, and the direct linkage between the health of these natural systems and the viability of the rural communities that undertake their management, there is an emerging global social phenomena that there are significant environmental and social costs and consequences associated with a deteriorating production base. The issues associated with the downward spiralling process of rural regions are complex and multifaceted, important elements impacting on this rural cycle are briefly highlighted below.

The gradual erosion of the viability of landholdings which is in part due to early policies and incentives that overestimated the productive capacity of the land resource as is evidenced now with many landholdings too small to support the families that manage them. Surprisingly these landholdings are often overvalued, reflecting a maximum production capacity in favourable seasons rather than the reality of 1 good year in 5 – at best. It is however these prices that force production based decisions and continue to support elevated production levels.

A more recent global phenomena are the regular reports of **diminishing farm returns**. Landholders, as price takers are caught in the cost/price squeeze in which the costs associated with production continue to rise but the gross returns from sales remains the same or deteriorates. This phenomena is driven from a wide variety of sources including globalisation of markets, international trade agreements, and heavily subsidised agricultural practices (eg. drought relief programmes). In addition there is **increasing pressure for land managers to comply** with the requirements of markets and government policies. Despite the imposition of these regulations and policies appearing valid, rural sectors perceive them as additional burdens.

The decreasing margins from production directly affect **the ability of producers to service debt** (landholder debt, rural debt) and with it the loss of options including the inability to manage long term risk. This situation rapidly deteriorates as producers attempt to control costs and maintain viability. Unfortunately this manifests in a gradual run-down of capital infrastructure. At this stage the rapidly diminishing options available to the landholders revolve around maintaining viability by focusing on increasing the gross revenue from existing resources through such methods as increasing livestock numbers or fully utilising resources that may have been previously under utilised. This results in further environmental degradation representing accumulating economic and ecological debts.

With a decreased capacity to absorb the **uncertainty** facing producers in terms of ecological resource, volatile markets, climatic fluctuations, and seasonal production variations landholders continue to remain on a treadmill of high risk and uncertainty.

The failure to address issues at the appropriate scale. These issues include; a) broader ecological scales include the inherent problem that conventional production system scales do not match the landscape resource capacity that underpins the agricultural productivity that sustains rural communities, b) broader economic scales include the variables associated with market forces and globalisation, c) broader social scales which includes the migration from rural to city areas, ageing rural communities and, d) broader temporal scales that include the longer term view of management and economic returns from the resource base.

Population decline, both on the land and in the rural towns servicing farming communities, undermines the economic viability and livability of these towns further eroding social and

financial capital. These communities with declining populations struggle to cope with environmental problems. Farmers, communities, businesses and local governments do not have the necessary underlying economic base to ensure adequate investment in rehabilitating degraded land in their areas or to improve urban services such as sewerage treatment or recycling (SoE 1996). The medium term social issues include ageing rural communities communities; and in particular, issues of farm succession.

The response by industry and government service providers to the declining economic activity in these rural economies often results in the withdrawal of community services, further exacerbating existing problems as well as creating new ones. The resulting impact from these variables tend to manifest in the loss of resilience in farm economic and natural production systems extending the recovery time from events such as drought.

The above serves to illustrate the cycle leading to a combined breakdown and dysfunction of ecological, economic, social and institutional systems. This is assisted through the poor performance of current forms of resource management and institutional adaptation.

Conventional Solutions

The current suite of **solutions offered to primary producers** are narrowly focussed and usually attempt to address the problems of an ailing rural sector through solutions targeting economies of scale or intensity of the enterprise. The arguments addressing scale suggest that producers need to 'get big or get out'. These production oriented and economic based solutions suggest that the issues associated with sustainable production may be improved by 'acquiring' more productive resource and incurring the associated debt. This approach has resulted in the corporatisation of rural production and has not resulted in either ecological or social sustainability, rather when viewed from a corporate basis there exists an economic imperative. This argument fails on the basis that corporate sectors are market driven and there is ample evidence supporting the notion that the market fails to place a priority of long term sustainability over short term gains. This type of solution is generally supported by the corporate agribusiness sector who claim to have a long term shareholder interest in the productive resource which will guarantee the long term sustainability of the landholding.

As most individual producers are not in a financial position to take advantage of improving their viability through an up-scaling. Another solution put forward is to 'diversify'. This is a popular alternative, and is often associated with the option to seek niche markets and/or value adding. This alternative is usually proposed as an intensive enterprise to compliment existing non intensive production and better utilization of labour. The higher gross margins associated with the intensive alternative do not recognise the higher risk exposure of the individual producer, the additional labour requirements and the initial financial injection. In addition these intensive alternatives may simply serve to place further pressure on an already stressed resource. These alternatives do not contribute to the long term sustainability of the area with little room for resources allocated to functional capital.

The solutions currently offered to primary producers are constrained by the institutional and economic paradigms that on the one hand provide the incentives and on the other attempt to generate solutions. This results in narrowly targeted strategies that in reality only address aspects of the problem in isolation and not the whole.

Ecological Connectivity of Human Dominated Landscapes

The effects of agricultural production on the landscape are extensive and complex. The initial impacts in the creation of grazing and farming land are usually in the form of rapid and extensive modification of the native vegetation (Matheson 1996). Recent concern for the sustainability of Australian agriculture has resulted in a general attempt to encourage landholders to plan and manage the natural capital base in order to provide long term stability of production. In reality the sources of the problems threatening the survival of rural producers are largely beyond their control as individuals in a contemporary context.

Institutional inadequacy impacts on rural communities through programmes that attempt to deal with issues in isolation resulting in unsatisfactory or dysfunctional outcomes. Local governments, state governments and federal governments and their respective agencies either will not manage outside their 'plot' or are too narrowly focused in their administrative mandate or jurisdiction.

Apart from the institutional failings, the significant obstacle facing the management of the resource base by the rural communities is the issue of scale. Natural processes occur at the broader scales than landholders or the communities to which they belong are willing to manage as individuals. The management of the resource base for production by landholders occurs at the much finer scales associated with individual landholdings.

There is ample evidence that individual communities fail to accept 'ownership' of the problems by directly addressing the broader spatial scales such as watersheds which do not make sense from an individual's viewpoint (eg Murray Darling Basin Management Commission in Australia). The other extreme is that under an entrenched property rights paradigm there is little or no provision to manage outside your plot. Rural communities are however interested in managing the areas that sustain themselves despite having little concern for areas well beyond. These socially defined groupings are quite distinct areas and have been termed 'communities-of-common-concern', 'community bio-cultural identity', and 'policy communities' (Brunckhorst 2000).

The problem of scale may be addressed through a nested arrangement that allows for the scaling up and down for management. A nested approach allows for the coherent management of wholes within wholes and is capable of bridging the difficulties associated with scale issues

At the finer scales individual landholders can utilise the benefits of CPR arrangements in managing their resources, providing organisational forms capable of collaborative management of the resource base, as well as the additional economic and social advantages. At the broader scales the nested arrangements will consist of a range of public, private and common property (Bookmark Reserve – this panel).

CPR arrangements appear to provide an organisational vehicle for the successful sustainable management of human dominated landscapes. This is achievable through the flexibility of these social organisational forms, which are capable of transforming the complexity of the issues of large scale natural processes, and transforming them to the much finer scale at which producers manage their landholdings. These nested arrangements have the potential to maintain the management cohesiveness of the collective decisionmaking ensuring the integrity of broad and fine scale resource outcomes.

Assembling New Commons from Private Parcels of Land

The lessons synthesised from resilient, age-old social-ecological institutions are useful in our own time by generating opportunities for people to participate in collective decision-making. The various reviews of CPR systems provide valuable lessons and insights applicable in the development of sustainable solutions for our ailing agro-ecological systems today.

An important objective in building a contemporary model CPR is the ability to allocate the available resources more efficiently, but within their functional capacity. This necessitates assessing natural capital across an ecological landscape that equates also with the collective of landholders that will learn to share, nurture, conserve, restore and harvest across the entire area. Areas better suited to certain activities allow farming such as cropping and haymaking to be performed on those areas most suited to cultivation and the remaining land may be used for grazing, conservation, restoration or a suitable diversification. This removes the pressure for individual landholders to conduct these activities independently and on unsuitable locations and cropping only the most suitable area in the sub-catchment. Collectively these farming enterprises are more efficient and include the potential for more suitable grazing and crop rotations. Members of the collective need to understand the distinction between resource utilisation and land tenure these landholders may consolidate their herds and graze them across all properties involved in the CPR. This would allow the utilisation of grazing techniques such as rotational grazing regimes over a much wider area, offering benefits including improved pasture and weed management, drought management, as well as addressing issues associated with internal parasite resistance without the fencing costs normally associated with the adoption of these regimes. This allocation of the productive resource within the ecological landscape is resembles the methods adopted by early commons with their *strips-in-the-arable*, *common-of-shack*, and *common-waste*. This indicates an early recognition of the importance of the distinction between farming and grazing land at a broader scale, the capacity of the resource, as well as allowing for broad scale (resource and ecological) recovery.

The establishment of a common piece of land as a common 'commons' appears to be an important element part of a contemporary CPR (Brunckhorst *et al.* 1997, Brunckhorst 2000). It is the property of no-one member of the CPR, but the responsibility of all. This piece of centrally located land appears to serve several functions for development of the CPR collective. Initially the members of the CPR benefit through the up scaling of the productive resource simply through the benefits obtained by additional acreage. It provides buffering against drought, relieves current productive pressures, and is seen as a zone of focus throughout the CPR by providing connectivity for members of the CPR. The common land also serves a more important function in that it provides an area and a useful tool in helping members learn to work together, to frame values and goals and start making collective decisions (Brunckhorst *et al.* 1997, and this panel). It is this area of land that the institutional learning develops and as members become more confident in their ability to manage collectively these lessons will be applied across all landholder members areas even though in this modern CPR, individual property title is retained while allocation, access, nurturing of the resource base is viewed as common property and collective goals, decisions and rules apply (see Figure 1). This institutional learning as it evolves provides the framework for building collective responsibility; the monitoring of activities and environmental condition of the sub-catchment; and, self regulation and adjustment (flexible adaptive management). In turn through a sharing and management of infrastructure as well as natural resources, other capacities and resources such as time, labour, equipment and money are freed up for allocation in other activities or diversification.

The acceptance by landholders to participate in this type of institution is likely to be determined in the first instance by the ability to improve scales of economy and address financial viability through cost restructuring. The initial collective planning phase is substantial however, as issues relating to enterprise consolidation and operation, the establishment of the managing body (including determining the rules, voting rights and formula for the distribution of CPR proceeds), and the identification of key infrastructure and equipment are considered.

The establishment of a New Common will require the flexibility to accommodate novel corporate structures in order to do business and return profits in appropriate proportions to members. Another benefit of the CPR structure is the efficient utilisation of the labour resource. Grazing and farming enterprises have an uneven seasonal labour requirement and the ability to call on labour when it is required from within the common is valuable as it provides an opportunity to redeploy these resources to investigate alternative on-farm and more importantly off-farm diversifications. Labour is also available to undertake projects at a more suitable sub-catchment scale such as ecological restoration of the riparian areas.

The CPR provides the structural vehicle for buffering the long term risk associated with existing and new primary production ventures. An important aspect in relieving the productive pressure from these resources is the development and integration of off-farm income sources. The CPR providing an excellent vehicle for managing the risk associated with the start up and operational phases of these off-farm investments. In addition to economic savings and greater sustainability of grazing, a common covering a large area has the opportunity to greatly enhance ecological conservation. The freeing up of labour within the common increases the likelihood of conservation works being undertaken and reduces the overall pressure on the landscape. Collective decision making enables more effective conservation due to allocation of a more appropriate scale in terms of landscape connectivity.

Given the experience of the developing Bookmark Biosphere project (Brunckhorst, this panel), but set in a quite different ecological and social context, another CPR model is being developed on the New England Tablelands of Eastern New South Wales, Australia where holistic integrated management of the social and natural resource components is creating a novel grazing and conservation CPR that will nest in several 'greater' wholes.

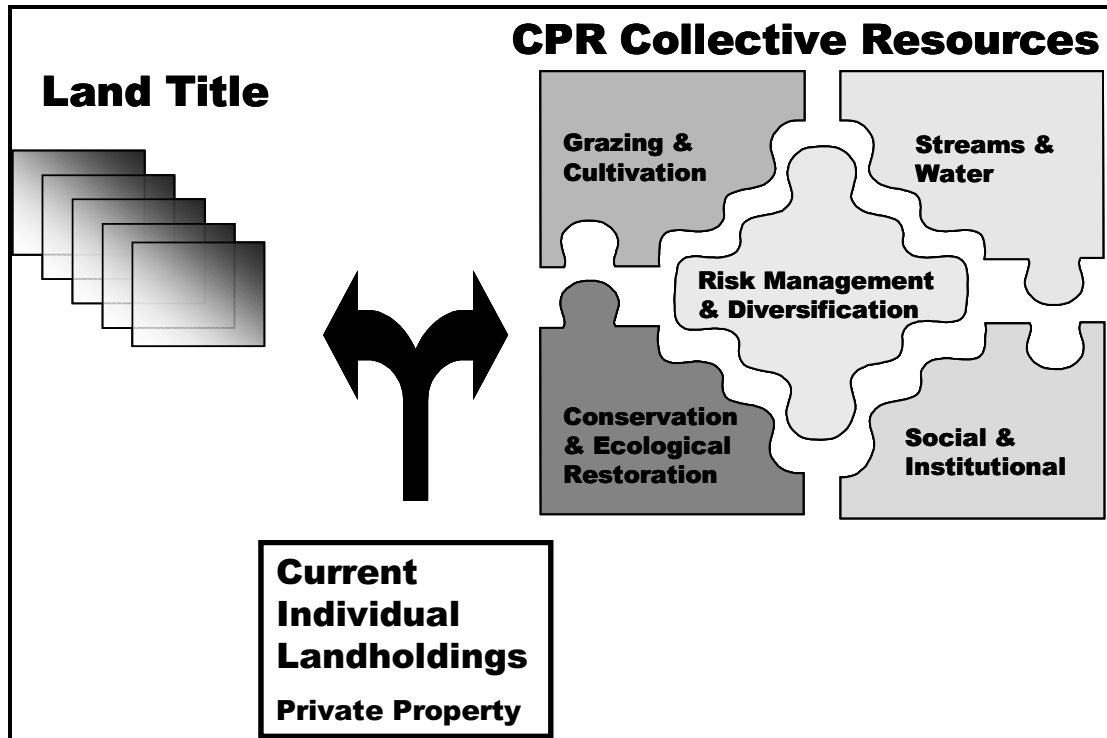


Figure 1. Illustrating how the CPR refocuses strategic decision making from a private rights based spatial units to the resource base as a ‘whole’.

Tilbuster Common Resource Cooperative – A New Commons Assembled from Private Parcels of Land.

‘As individual owners, we’re working together as a collective for improved lifestyle, prosperity and land health.’

A number of graziers on the New England Tablelands, Australia have embarked on a challenging project to form a contemporary Common. Individual graziers have contributed land, livestock, infrastructure and labour to form the common pool arrangement. These combined resources are managed collectively by the entire group as a single enterprise. Collectively known as the Tilbuster Common Resource Cooperative the members and their families are establishing a grazing arrangement with the aim of demonstrating that the CPR model is capable of delivering improved economic returns while ensuring the sustainability of the productive resource through the allocation of resources for the maintenance of ecological integrity, achievable only through an integrated management regime at the appropriate scale such as this CPR.

The regional setting for this CPR project is the New England Tablelands (northern New South Wales) and lies on the higher elevations of the Great Dividing Range. The regional context is characterised by the IBRA ecoregion, New England Tablelands (NET). This ecoregion is characterised by higher elevations sufficient for light falls of snow in winter and mild summers. The vegetation communities of the NET bioregion are poorly

represented through existing reserves, largely due to intensive early clearing for grazing. The culture of the area is extremely conservative, with many farming/grazing families being direct descendants of the initial settlers. To the east of the NET bioregion lies the well defined escarpment and the narrow coastal plain. To the west are the bioregions of Brigalow Belts and Nandewar which provide a gradual transition through the western slopes and plains (rangeland).

The project area is located 20 kilometers north of the nearest city, Armidale, which has a population of around 30,000. The project is located in the Tilbuster Valley sub-catchment. The elevations of the Tilbuster Valley range from 1000 meters along the creeklands in the base of the valley and rises to over 1350 meters on the surrounding ridges which rise in the north to a highly productive basalt soil plateau.

The area is diverse and consists of prime New England grazing land. There is some opportunity for farming activities along the higher quality soils along the creek. There are also remnants of native vegetation remaining within the project area, much of which is considered high quality conservation areas particularly those present on the basaltic soils. Some of these vegetation communities are quite rare and poorly represented in the ecoregion.

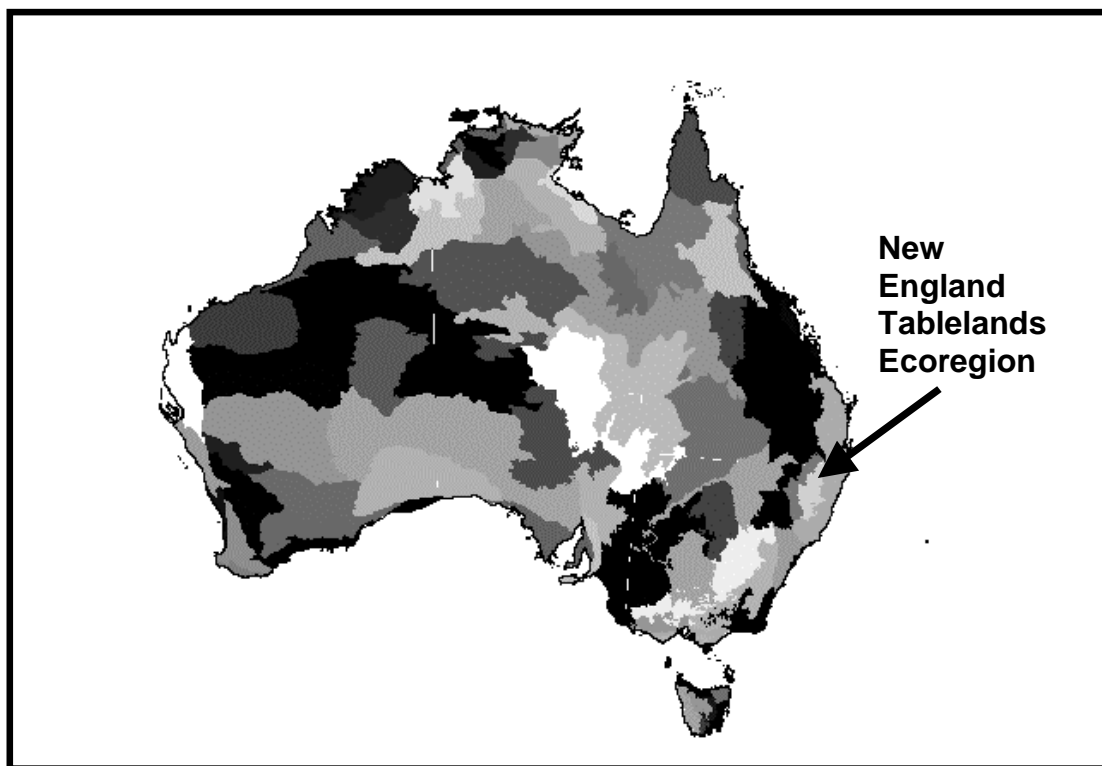


Figure 2. Illustrating the IBRA Ecoregionalisation of Australia and in particular the Ecoregion of New England Tablelands.

The farms participating in the project are largely nestled within the Tilbuster Valley and vary in size between 700 hectares and 90 hectares. The land types associated with each members land parcel vary greatly ranging from some members with relatively small landholdings, yet consist of mostly high quality black soil to the larger landholdings consisting of poorer soil types and high conservation value areas. Whilst there are larger

single landholdings on the New England Tablelands these are typical of many of the landholdings still managed in the area.

Since it was settled, less than 200 years ago, the New England region has traditionally been grazing with limited cultivation on the better soils. The area is famous for its fine wool and to a lesser extent beef production.

The project area was selected as it contained many of the social and ecological issues and challenges that face rural communities. The social issues facing the community of the Tilbuster Valley include elements of an aging rural population, succession issues, rural unemployment, and there was also a general concern for long term future of the inhabitants of the valley. The Tilbuster Valley is quite picturesque and the resource base is still in quite good shape despite heavy impacts on the creekland and surrounding vegetation due to access by livestock and early vegetation clearing regimes. The area remains reasonably resilient and productive, largely due to the relative elevation and the location of the valley, which is at the top of the watershed and still provides reasonable quality water. Consistent with many rural communities the members of the valley also tended to provide a supportive environment and provided assistance to each another. A major highway passes through the Valley, which provides an audience for the demonstration project.

These combined variables made the inhabitants of the Tilbuster Valley an excellent group to approach regarding the development of a contemporary CPR. It was also their initial enthusiasm for the project along with their willingness to recognise many of the issues associated with collaborative management that finally resulted in the selection of the Tilbuster Valley as the area for the CPR.

The Tilbuster Common Resource Cooperative.

After nearly three years of planning, the landholders formed the Tilbuster Common Resource Cooperative (TCRC). The decision to participate was based, not on a set of hard and fast rules that were already in existence, rather only on a guiding CPR philosophy in which issues that affected the group would be managed collectively. Each participating member could see the advantages of the collaborative arrangement and had the confidence that the group was capable of negotiating an equitable outcome.

Once established the priority issues included livestock management issues, grazing and pasture management, the strategic allocation of conservation and rehabilitation areas, and the issues associated with the operation of the TCRC. Since that time the processes that guide the management of the common have been continually evolving and developing through this collaborative process.

Issues at the forefront include the allocation of land to the common (some areas are retained for private use such as the areas around each member's home), the selection of key infrastructure, the development of the formula which represents the interests of each member in the common and the allocation of land / resources to the maintenance of ecosystem function which is recognised as underpinning the productive sustainability of the Common.

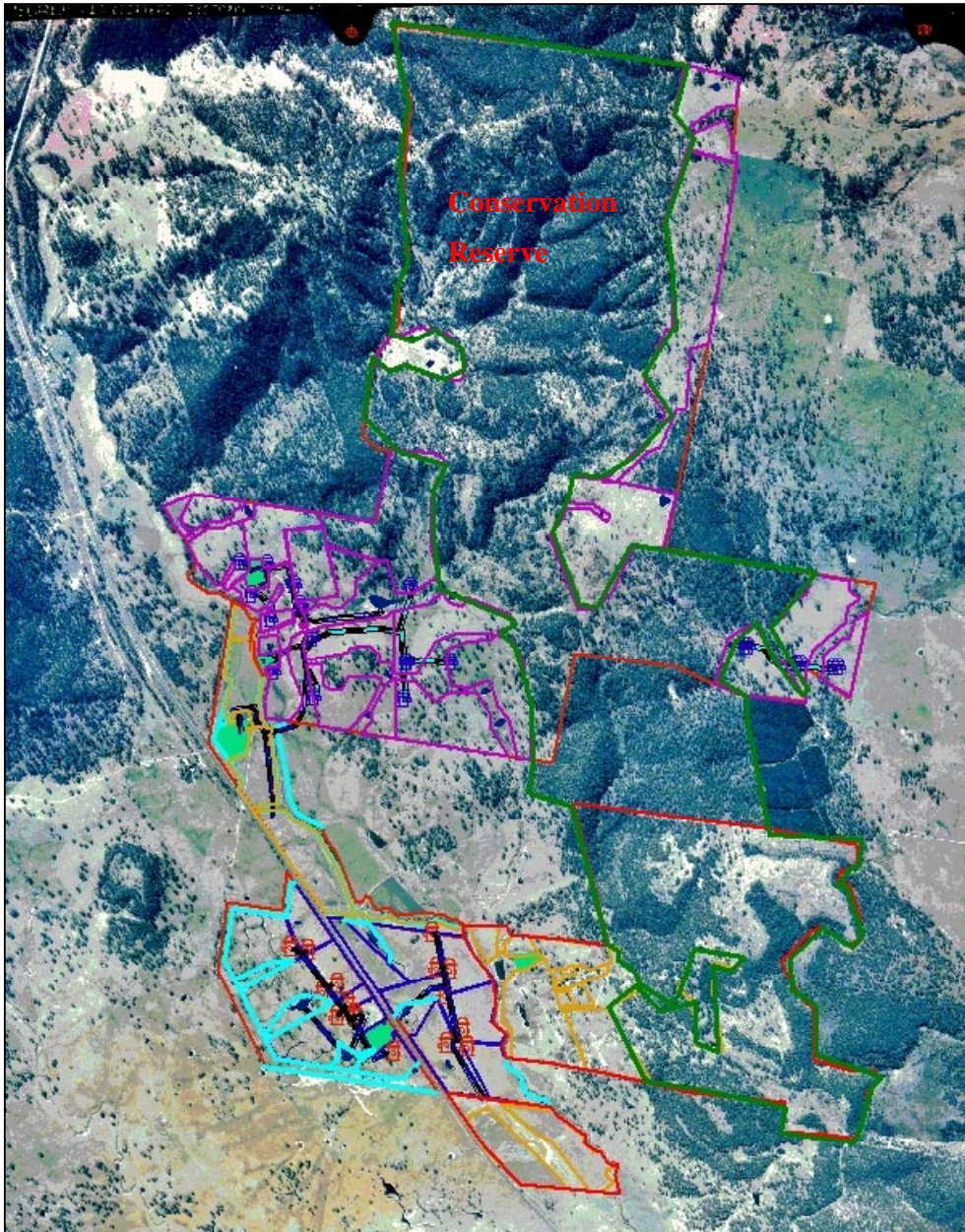


Figure 3. Orthorectified Aerial Photo of the Tilbuster Valley showing the collaborative

CPR provides opportunities for management ‘beyond the boundary fence’

Under conventional property rights regimes primary producers are required to fully utilise the resources available in order to survive economically. A typical landholding may comprise some high quality soil that is suitable for farming, grazing land that is generally not suitable for farming, and some poorer areas barely suited to grazing. The type and mix of these areas will vary depending on the topography, soils etc of the region. With these

resources at the landholders disposal there is no option but to fully utilise each type of resource. The productive riparian land is inevitably cropped, possibly for summer as well as winter feed for livestock. Stock will usually have access to the creekland for water. The mid quality land will be grazed throughout the year and the poorer areas will slowly decline due to the impacts of livestock 'wintering over'.

An important aspect of the Common Property Resource (CPR) management project on the New England Tablelands is the ability to allocate the available resources more efficiently, but within their functional capacity. The Common Property Resource (CPR) collective provides a unique opportunity for a group of graziers, who together own most of a sub-catchment and have collectively agreed to work and learn together how to operate a CPR system. For example by recognising the distinction between resource utilisation and land tenure these landholders may consolidate their herds and graze them across all the properties involved in the CPR. This would allow the utilisation of grazing techniques such as rotational grazing regimes over a much wider area, offering benefits including improved pasture and weed management, drought management. In addition pest issues such as external and internal parasite control can be managed far more effectively, but with reduced costs in terms of fencing or chemical needs.

At broader and more meaningful ecological scales across the landscape, it also provides opportunities for long-term conservation and maintenance of rare basalt associated ecosystems and the restoration (ie, sub-catchment and riparian vegetation). This necessitates assessing natural capital across an ecological landscape that equates also with the collective of landholders that will learn to share, nurture, conserve, restore and harvest across the entire area. Areas better suited to certain activities allow farming such as cropping and haymaking to be performed on those areas most suited, and resilient, to cultivation and the remaining land may be used for grazing, conservation, restoration or a suitable diversification. This removes the pressure for individual landholders to conduct these activities independently, on largely unsuitable locations and cropping only the most suitable area in the landscape. Collectively these farming enterprises are more efficient and include the potential for scaling-up to more suitable resource use across all properties of the collective.

The CPR model, enables the resources of the collective be managed as 'wholes'. This model provides security of tenure to the members of the CPR while enabling the resources under the management of the common to be viewed at a larger scale approaching the functional scale.

Where the resources are managed by a collective synergies arise. The size of the combined landholdings allows for improved scales of operation and the additional benefits of improved grazing methods (HRM). This in turn reduces the pressure to over-utilise the riparian areas to support elevated stocking rates by way of winter fodder. The TCRC has managed to completely remove the impacts of livestock on the creek system, and provided creek restorations. Alternative stock water has been obtained from a range of sources across the common and piped (cost effectively) across previously existing boundaries. Despite the potential drought the common is sufficiently drought resistant to consider removing some of the dysfunctional (size or location) which contributes to improving environmental flows.

Clear goals and values – cpr goal setting – resources – conservation – share in formula – input contribution – recognition of ecological function.

The Future of the TCRC.

Whilst it is still early days, the CPR approach has generated a sufficiently robust organisation for its members to explore innovative options that should generate a premium return for the common. The future plans of the TCRC include; diversifications that seek niche opportunities supported by the sound risk management base provided by the common; chemical free alternatives, and examining the native vegetation for medicinal purposes.

These future options for the members of the common would not have been possible prior to the formation of the common.

Conclusion

On ground projects such the grazing CPR developed by the members of the TCRC have the capacity to demonstrate that these collaborative social organisational forms are a real alternative for rural producers and communities struggling with the complex management issues they face as individuals. It will only be through the lessons learned from the repeated application of these age-old institutions that they may become sufficiently understood by resource managers and agencies that they form part of a 'toolbox' that may be applied to a range of resource issues encouraging collaboration among resource managers to deliver solutions that are sustainable, both ecologically and socially.

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