# Natural capital examined as a function of land stewardship

*With proposals and narrative foundations to support profound changes in the cities and outback country of Queensland, Australia.*



*A long view across North Head Station, Gulf savanna country*

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*Quaid's Dam. Pastoral developers created a modified landscape at Southedge Station, north Queensland.*

# Orientation and framing

In this essay, I will take up the concepts of natural capital and stewardship payments and use them to explore the possibilities of a more abundant and life-affirming future in the rangelands of Queensland.

I will argue that natural capital is a valuable metaphor that could serve us well, but only if we are committed to the wholesale transformation of our culture's relationship to country. Likewise, stewardship payments could play an essential role in that transformation, if managed through the lens of wisdom.

My central theme is that Business-as-Usual (BaU) is unlikely to serve us well over the next 50 years, at least to the extent that it remains anchored in the colonial, extractive, and capital-centric aspects of our culture. What constitutes BaU deserves further discussion, and that will be explored in due course. The key is that, while no one of us is responsible for the entirety of this culture, every one of us is responsible for its continued manifestations.

So I am writing to you in good faith: we both know that change is not only necessary, it is inevitable. How will we participate in the change process? What can we afford to change right now, while there is still time to give the various options thoughtful and fair consideration? What are the urgencies already demanding closer attention, calling us to act as if our shared futures hang in the balance?

There is little doubt that BaU is a familiar place. Its faults are many, but most people are reluctant to cast themselves into the unknown. We are uncertain about the consequences of change, unsure of the alternatives. This caution is quite natural and even sensible. However, the imperative for change is not

so easily ignored. A clear-eyed review of the evidence leaves little doubt that BaU has become a velvet-padded iron shackle, dragging us down, preventing us from nurturing a more abundant and liveable future.

My intention in this paper is to explore the evidence, propose some options, and catalyse your better instincts so that we can act, cooperatively, before the situation deteriorates to the point that desperate options are the only options we have left. Right now--this transformative moment--invites us all to participate in keeping better options open.

## Why Queensland?

My particular set of circumstances have led me here, to a discussion of transformation in the context of Queensland's outback country. In terms of dilemmas, Queensland has much to offer. And if we're going to start at the beginning, let's start with the primary producers who work at the very forward end of our interface with the other-than-human world. I think this is as good a place as any to chip a spark and ignite a social change. Perhaps it is even uniquely suited to such a moment, as we'll consider in pages following.

Queensland's outback, or rangelands, account for about 70% of the state's land area, close to 2M square kilometres (Argentina is 2.8M km2). For the past 150 years, the land has been dominated by extensive grazing operations, first for sheep and then for cattle. Although there are a few broadscale grain and cotton operations, and pockets of mining activity in the mineral provinces, the overwhelming landuse on a per hectare basis is grazing.

Graziers have transformed the land at an astonishing scale. Under the general program of pastoral development the dominant vegetation of entire bioregions has been shifted to better serve commercial aspirations. Millions of kilometres of fencing now partition the Queensland outback with little regard for ecosystem function. The pre-existing productive wealth of the land has been systematically mined, modified, and simplified to the point where no one is quite sure how much natural resilience is left in the system and ideological wars centre on just how much remaining economic value can be squeezed out of the system without fatal collapse.

These claims attract apologists and critics alike: "Where's the data that shows widespread land degradation?" "This wasn't a pristine wilderness when Europeans arrived: the land was already being managed by self-interested humans." "No worries, the land will recover: feeding people and providing economic opportunity has to come first."

Most Queensland graziers are proud of the material prosperity they have worked hard to produce. There's a deep satisfaction that flows from agricultural development, from a determination to overcome weather, isolation, privation, and the vagaries of government regulation and market madness to finally retire the mortgage, put some capital back in the bank, and start thinking about a succession plan.

As much as there is to love about this sort of success, it's not sufficient to the challenges of today, and falls far short of what is needed tomorrow. In this paper we'll look at both the general failures of the BaU model and the specifics of an alternative future that we Queenslanders could choose to pursue.

Queensland is interesting in another way:: the question of what to do about coal mining and export. As with pastoralism, the struggle to wrest an economic profit from the raw stuff of nature has inflated a

near-mythical sense of achievement and righteous satisfaction. Many policy-makers, business leaders and ordinary folk are quite proud to be part of the heroic story of coal mining and export to the world. Coal is fundamental to our engines of material production. It powers the lights and delivers considerable economic rewards. The practical importance of coal, today, is hard to overstate (though some of its more ardent boosters certainly give it a go).

Despite the familiarity and durability of the coal story, it is increasingly clear that it's time for a new chapter. The climate impacts of Queensland's coal cannot be ignored if we are to retain a credible sense of integrity. It's as if a town that had always relied on income from producing an interesting chemical compound suddenly realised that the only use for that chemical was to conduct broadscale genocide. How would the town go about confronting its role in the tragic chain of events that resulted in so much human misery? For many people, this disturbing picture is not merely an argumentative analogy: for them, the continued extraction of fossil fuels is nothing less than a death sentence delivered to not-so-distant generations hence.

So what to do about Queensland's coal? Do we just shrug off the moral hazard and stick with BaU, or do we take the challenge seriously and begin some sort of transition?

In some proposals, there would be a deliberate winding down of the coal industry. Displaced workers would be assured of support, re-training, and re-entry to new opportunities that don't carry the stench of outright moral dereliction. The investors would be handled gently, with compensation, but with firm policy directives to transition to more socially responsible investments.

We urgently need to de-carbonise the world's energy profile. Australians can take the first step and show the sort of leadership that the privileged societies should be demonstrating. This would be an enormous political and economic decision, but why not do the right thing? Especially if we decided to manage the process with a great deal of Aussie-style imagination, good humour, and patience. There is no reason that people should suffer or that legitimate aspirations for return on investment are not respected.

Theoretically, such a compassionate and fair transition is possible, and indeed falls squarely within the remit of a central government with full discretion to manage the country's fiscal affairs for the common good of its citizens.

So what stands in our way? There would be a host of microeconomic and legal reforms needed, but there's no insurmountable technical barrier. Surely it is not the climate science itself, though some still seem determined to die on that hill.

We could say it's a lack of political will, or blame it on the Murdoch-fueled madness of crowds, or on the unapologetic selfishness of human nature. If there is "truth" in these explanations, perhaps it's time we looked more critically at the assumptions and interpretations that result in a package of stories that appear to be blocking us from saying what needs to be said, and doing what needs to be done.

It is here that I think there is a powerful connection to our rangelands story. If there is a generalised problem description that explains both our dilemmas--the question of Queensland coal and the systematic exploitation of the rangelands (and its communities)--then I think we're onto something worthwhile.

Queenslanders have more discretionary income, functional governance, and scientific foundations than most other places in the world. Our graziers are amongst the most highly productive and innovative producers in the world while still somehow managing to remain trapped in threadbare ideologies from a distant past. And our coastal cities are archetypes of urban aspiration, complete with the staggering inequalities and self-absorbed cultures of distraction that typify “advanced” capitalist societies around the globe. In terms of dilemmas, Queensland is a target-rich environment. So, on balance, I reckon it’s a great place to start this conversation.

## The story of natural capital and stewardship payments

Natural capital refers to a suite of ideas that seek to bridge the human-centric world of economics with the more-than-human world of the “natural”. The point of choosing natural capital for the centre of this paper is precisely because of this bridge between those two seemingly distinct worlds. Stewardship payments--or more generally, payments for ecosystem services (PES)--are the operationalised expression of a natural capital theory.

There is no shortage of scholarship examining these ideas. The current paper is offered as a respectful contribution to that ongoing effort. In particular, I seek to advance the idea of natural capital as a potent set of symbolic ideas that add force and urgency to the larger project of cultural transformation. But what exactly is natural capital and how do stewardship payments airise?

Let’s start as simply as possible. Here is my 150 word elevator-pitch for the general idea of natural capital and stewardship payments:

> *A stewardship payment provides an incentive for a land manager to undertake additional care of country, that is, to do things that are beyond the minimum activities otherwise required for their private, commercial operations.*
>
> *The stewardship payment comes from the public purse or through philanthropy, corporate social responsibility, or even through commercial arrangements such as banks rewarding longer-term management decisions.*
>
> *Generally, the stewardship activity being paid for is intended to deliver outcomes that are considered public goods. “Natural capital” is a term that can be used to describe these public goods, which range from ecosystem services to specific biodiversity conservation outcomes. Natural capital is living potential, stored in healthy lands and waters, expressed in the dynamic flows of biological production and adaptation.*
>
> *In summary: the land manager earns private economic income, in the form of stewardship payments, by delivering public goods in the form of increasing stocks of natural capital.*

In this essay I’d like to explore the edges of this elevator-pitch. Embedded in that hot-take of the topic there are technical questions that need to be considered, and a handful of deeper philosophical issues to ponder.

## Guiding lights: narratives of prosperity through regeneration

Current literature offers plenty of theoretical speculation on stewardship payments and other forms of "agri-environmental schemes". There are even some working examples of large economic transfer arrangements that provide producers with non-trivial levels of funding for practices that contribute to improved land condition. However, realising such possibilities requires a different path to the current domination of economics as an exercise in competitive capital acquisition and unlimited expansion.

For general orientation to the technicalities of payments for ecosystem services (PES), I recommend the excellent collection of papers in *Learning from agri-environment schemes in Australia: Investing in biodiversity and other ecosystem services on farms* (Ansell *et al.* 2016). The wonks will point to just about anything by natural capital guru (and new Australian), Robert Costanza,. From the UK there is a remarkably optimistic account of a possible future provided by Dieter Helm's *Green and Prosperous Land* (2019). Helm paints a broad and convincing case for intelligent co-management of agriculture by community and government: we'll take a deeper look at his ideas shortly. And special attention is reserved for the insightful provocations offered by Geoff Edwards in *From Red to Green to Black* (2018).

The philosophical questions I explore in this paper are connected with much deeper uncertainties about the cultural context in which the notion of natural capital and stewardship payments arise. Although this is more challenging territory, it seems essential that we take the time to seriously knock around at the foundations of what we take as "reality" because there is every likelihood that a fair few of those big structural assumptions are no longer sound or fit for purpose.

In this regard I can commend the critique offered by Tyson Yunkaporta in *Sand Talk* (2019), the re-imagining of the notion of debt provided by David Graeber (2011), and the alarming habits of the western cultural mind traced by Jeremy Lent and Fritjof Capra in *The Patterning Instinct* (2017).

The biophysical dimensions of the mind remain foundational to any understanding of our individual and collective actions. In this area a marvellous work has been published by neuroendocrinologist Robert Sapolsky, *Behave: The biology of humans at our best and worst* (2017). Any serious worker on the frontiers of cultural transformation needs to have this one under their belt.

The vital spirit of agriculture and land custodianship finds its philosophy and wise eldership in the works of Wendell Berry. Following closely in his footsteps are the blossoming insights of Robin Wall Kimmerer, Nicole Masters, and Charles Massy.

One of the most inspiring assessments of the climate change challenge comes from Charles Eisenstien in *Climate: a New Story* (2018). The scope, compassion, and optimism of this work led me to take a deep breath and speak up whenever the conversation turns toward climate change. Eisenstein offers a fresh palette of ideas and insights that beautifully connect this modern moment with the deeper truths of humanity's wisdom traditions.

Striding far ahead of my efforts here is the work of Tim Jackson, former Economics Commissioner for the UK's Sustainable Development Commission. In 2009 he released the first edition of *Prosperity without Growth*. Seven years later he published an updated edition (2016) which is even more breathtaking in scope and vision, and even more reliable in its analysis. Essentially, Jackson has given us the reasoning and motivation to reshape our economics, and thus our societies, from the ground up.

## Stories for change

Stories help us to make sense of the world. Many of these stories are carried in the traditions and norms of our culture, while other stories are formed by the experiences and unique journeys each of us take through life. They may take shape as norms, truths, and plain old commonsense. The key insight here is that stories have an evolutionary dimension: the people who tell themselves better stories are more aligned with their circumstances, and thus are better able to carry themselves (and their stories) into the future.

Our stories are scalable. My grandmother cautioned us kids: "Waste not, want not." That stern advice still makes sense in my family household...and it colours the way I look outwards to how the local shire is managed, the way Queensland politicians divide up our State budget, and onwards to the macroeconomics of late-stage consumer capitalism. Grandma's cautions still ring in my ears at every level.

Good stories help us transfer insights from one scale to the next. I take advantage of this fractal-like integrity so that you and I can stay grounded to what we know from first-hand, first principle knowledge even as the conversation shifts across the spectrum from outstation to village to big smoke to the scale of planetary patterns and intelligences.

This observation underpins my hopes for how this essay might prove useful, because if we can shift our stories about the world, we will be well on our way to shifting the world itself.

This essay is not so much an exhortation or a rally-call. It doesn't intend to convert the reluctant reader to a new viewpoint. Rather, it seeks to provide a wide range of references and alternate perspectives...the substrate of good stories...so that those who are already prepared to embark on a program of transformative change will have an additional collection of ideas to draw upon.

## Acknowledgement

I would not be on this journey if not for the inspiration offered to me by Prof Stuart Hill, the irreverent and irrepressible social ecologist who enchanted my mind and heart when I needed it most. And I would like to send a special shout-out to that dusty gentleman of the Sandover, Bob Purvis, who first introduced me to the lived realities of a proper beef-producing steward of country nearly twenty years ago, and sternly warned me that he "doesn't go in for any of that fancy muck." I've been looking for a satisfying minimum of complexity ever since.

It has been a pleasure to compile this paper, illuminated and inspired by these heroic figures and many others. I approach the topic alert to my own limitations, and yet I'm buoyed by the certainty that we all have some small contribution to make to one another. I hear Herman Daly whispering in my ear: "I'm no genius, and others can outwork me. What I do is ask the naive, honest questions, and then I'm not satisfied until I get the answers."

This paper is respectfully offered to you with the great strength of my convictions, and an even greater sense of humility and gratitude for the opportunity to be. here. now.




*A fig tree and a stockyard fence, in ongoing dialogue. (photo: Rod Warnock)*

# 1: Locating a leverage point

## Where is the money?

Natural capital and stewardship payments are concerned with a big problem: there's not enough money in primary production.

In fact, there is not enough money in the rangeland country of Queensland, period.

There is not enough money for healthy communities to grow and offer opportunities to their children. There's not enough money to support high-quality education, excellent healthcare, or to empower volunteer groups essential to a rich and caring community life.

There is not enough money to train, employ, and retain people in good-paying jobs all year long. There's not enough money to ensure that businesses are sufficiently resilient to drought, flood, and fire. There's no reserves to draw on when government regulations add overheads and stifle opportunities.

And there is certainly not enough money for producers to take on board the expectations of the general public, with their ever-increasing demands for better animal welfare, proper mitigation of weeds and ferals, higher biosecurity compliance, and continuous improvements to land condition.

Fortunately for all of us, most rangeland people are tough, independent, resourceful, and in love with the patch of country they have decided to call home. In the face of enormous challenges, they are still out there, making their livings, raising their children, and caring for the country as best they can. We're lucky that people still stick with primary production, choosing to endure and adapt even when it can seem impossible to continue. But there are limits.

Why is it so difficult to thrive and build an abundant future in the outback? For many of those with "skin in the game," the situation has been on a downward track for some time. Decades of neglect by policymakers, politicians, and the public have seen rangelands issues slip off the radar and go silent except for the occasional headline-grabbing moments like the live export ban, the biblical floods of 2018, or threats to form a new state. Most people would know far more about the Great Barrier Reef--where no one lives, and which is a fundamentally alien environment--than they would about the black soil country and Mitchell Grass plains--which have been central to the living culture of both the pastoralists of the last 150 years and the First Nations people for the past 60 millennia.

In addition to poor policy performance at the state and national level, there is plenty of evidence to suggest that life in our rangelands is exposed to a range of global-scale urgencies, such as an increase in climate variability and severity, political instability and its effects on trade, and the cumulative effects of the economic growth imperative which appears to be driving humanity into a very tight corner with respect to sustainable futures.

We could be doing better. Much of the enduring hardship and attendant environmental decline could be alleviated with some wise decisions at the policy level, and some careful conversations at the cultural level. For those willing to support more transformative change, there is every reason to believe that things can improve. Indeed, I believe that the future of agriculture will lead the future for all of us, and there is much cause for quiet optimism. To take advantage of this brighter future will require profound changes to how we see ourselves in relation to one another, through the land.

It's well past time to give the people of the rangelands their due. It's time for a significant upgrade to the package of stories, myths, and beliefs that guide our daily interactions with one another. It's possible to imagine that new stories could take shape around a "new deal for the bush", powered by innovative collaborations between community, science, industry, and (lastly) government.

But where is the money? At every turn we are dogged by the demand to deliver positive social and environmental outcomes while justifying every dollar of public expenditure or else by chasing some form of commercial model. It seems like *Show me the money* is the insistent backing track for every future we try to sing up together.

How can land managers be properly compensated for delivering public goods? How can the rangelands produce more prosperous communities by keeping more of their wealth circulating locally? How do we fund a massive public investment into environmental services, natural capital, and social capital? In short, how can economic capital be liberated to act as an enabler of profound abundance?

It's an important question because the quality of our lives is dependent on our capacity to flourish. Tim Jackson explore

For the moment, let me suggest that money (economic investment) is most reliably secured through the device of a good story. In other words. a compelling vision will attract investors. A narrative that

embeds the promise of prosperity will attract politicians. And a pathway to a more healthy and contented future will attract the public. So let's cast a few images onto the table. Let's imagine what we're working to achieve in the magnificent outback country of Queensland.

## What will it look like when we succeed?

Let's take a moment to imagine the better Queensland that this essay is dedicated to. What are the key improvements that energise and enliven this vision for the outback?

First, there would be more people. Can we imagine that, in the year 2050, the rangelands will be home to 15% of Queensland's population? Currently it is 2%. What would it mean to de-intensify the coastal cities and swell the outback population? Imagine 1.2M new settlers, thriving in flourishing new communities and revitalised regional centres. With the right policy settings, these people could be living and working in an increasingly abundant landscape, achieving high levels of self-sufficiency and integration with the cycles of weather and dynamic ecosystems. They would be growing community through shared history, shared attachment to place, and shared challenges on the land.

Business would be diverse and highly adaptable, focussed on meeting local needs first. There would be plenty of apprenticeships and trade positions on offer. The small towns and communities would be connected to the coast by excellent telecommunications networks, making it even more practical for specialist professionals and regionally-based entrepreneurs to grow their businesses in the outback.

Grazing would still be an important sector, but it would be undertaken on a smaller scale, aimed at the highest value domestic markets first, with export making up a significantly lower percentage of sales. This domestic orientation would be delivering greater profit margins and price stability to producers, as well as reducing the overall pressure on country.

New occupations would open up in the environmental economy, providing stable jobs and good salaries for people to manage country for biodiversity, ecosystem services, and conservation outcomes as well as for cultural purposes. This foundation of stable households will then support a general movement of businesses and cultural activity from cities toward outback communities. Social and economic networks will flourish, thus building the diverse, resilient outback that so many of us hope for. A shared story of country will render the acrimony between primary producers, traditional owners, and greenies an obsolete relic of the past as structural arrangements help nudge collaborative, mutually beneficial relationships into continuous emergence.

And of course there would be a rich and deeply respectful conversation between outback communities and their coastal cousins, revealing far more common interest and healthy interdependency than we currently imagine. This conversation would be supported by a wide range of open data, observations, and assessments that informed decisions from the scale of national policy right through to the local catchment and paddock.

For any 10 people considering such a vision, there will be at least 11 differing opinions on how to achieve it. But if we can agree that this vision is a fundamental improvement over the current BaU state of affairs, then we have a mandate to continue the conversation.

## A Declaration of shared interests

The picture of success above is outlined in broad brushstrokes. Despite the lack of detail, the prospect of a more abundant, prosperous, and diverse outback appeals to many Queenslanders. At a meeting in Brisbane in 2019, nearly 130 people from across the spectrum of industry, policy, science, and community sat together over the course of a two-day "dialogue" to talk about the future of the rangelands. The resulting "*Declaration for the future of our Rangelands*" opens up with these passages:

> ***In the face of...***
>
> ➔ *A deep and enduring attachment to Queensland's outback country, its rural communities, and the iconic ecosystems on which they depend;*
>
> ➔ *Ongoing decline in these communities due to unrelenting economic pressures, a legacy of unfortunate planning and legislation, and the lack of bold, forward-looking policy choices;*
>
> ➔ *The compounding effects of a highly variable climate that is expected to become hotter and increasingly variable, with more severe episodes of flood and drought, and persistent ecosystem stress; and*
>
> ➔ *The resulting vulnerability of production systems to frequent disruption, a widespread decline in land condition, and the tragic loss of biodiversity throughout the ecosystems that sustain us; then*
>
> ***We, as Queenslanders, need to...***
>
> ➔ *Accept there are pressing issues in our Rangelands and an urgency to bring urban and rural communities into serious and constructive conversation;*
>
> ➔ *Celebrate our common agreement on the biological, cultural, and economic necessity of a flourishing, populous, and life-affirming outback, while minimising attachment to outdated ideologies that only serve to separate people from one another;*
>
> ➔ *Affirm that landscape management properly rests in the hands of people acting with modern knowledge and Indigenous wisdom, and that they are the trusted custodians of sustainable utilisation, conservation, and regeneration;*
>
> ➔ *Recognise that more investment is required to build the ecological health of our country, including arrangements that deliver stewardship and natural capital payments...(Declaration 2019)*

The Declaration fits on one page and sounds a lot like motherhood statements. But that's the nature of a vision that is big enough to bring people together. The Declaration has enough specificity to get people into constructive conversation about their shared interests without restricting their capacity to imagine strategies that have never been possible before.

## A promising Dialogue

What is not contained in the Declaration is a roadmap for how to proceed. That work is left up to all of us. One contribution is a process that has been running since the 2019 Brisbane event. The inaugural co-signatories of the Declaration: AgForce Queensland, NRM Regions Queensland, and the Royal Society of Queensland have hosted an online version of the Dialogue to continue exploring viewpoints, realities, and hypotheticals.

Much of this conversation has been aimed at finding the best leverage points to make positive change more likely to occur. There is a general acknowledgement that changes need to be encoded in various forms of policy (local, state, national), but there is a wide range of opinions about what these policies should look like and (perhaps more importantly) what is the theory of change that would make such policies sufficiently attractive to governments.

A compilation of the issues arising from nearly a year of group discussion has recently been published, offering a series of summarised questions and responses that, taken together, provide a scope to the challenges for rangelands policy (Dialogue Participants 2020). These challenges range from the nature of neoliberal ideology and global trade agreements to the tragedy of well-intended regulations that deliver perverse outcomes.

## The dividends of natural capital

How can natural capital help move the future closer to the vision of success outlined previously? It's important to remember that natural capital is an idea. The effects it has in the real world of, eg: research studies; bank accounts; soil carbon; and rates of volunteerism,  is driven through the stories we tell about natural capital.

Natural capital is a simple term that in the first instance connects us to the familiar ideas of financial capital. Financial capital is central to the stories we tell about the good life. Most of us carry a vision of the happy investor: living a comfortable life on the dividends returned by capital. Relaxing with the kids and grandkids on a pleasant afternoon while our good investments refill the bank account for us. Living off the dividends and capital returns. Lovely.

Likewise, when natural systems are healthy, they produce an abundance of environmental "goods and services" on which we humans depend. This is the second connection that natural capital offers. Like canny investors, good stewards of the land negotiate the ever-changing line between cultivation and harvesting to meet human needs on one side, and tending to the innate requirements of the asset--the natural world--on the other. The best primary producers know that their job is to nurture this reciprocal, mutually beneficial relationship with the land so that we can live off the dividends of our natural capital inheritance.

Natural capital offers us a straightforward metaphor that explains why proper care and maintenance of the natural asset (lands, waters, biodiversity) makes good sense, and why depletion of the principal will leave us ruined. Natural capital gives us a clear image of what land management should look like: it should be about continual re-investment in the health of the land of which we are stewards. Through this wise investment we will find dividends expressed as improved land condition, more resilient

paddocks, healthier stock, and less stress. In real life we know that fewer and fewer of us manage to achieve this happy state. The reasons for this are complex.

No matter how we go about explaining it, business-as-usual is clearly not driving enough money through the rangelands to deliver proper land management. Few beef operations are able to thrive solely off the "surplus" dividends returned from their primary production activities year on year. Even excellent land managers with deep pockets find themselves occasionally pulling vitality out of the land at a rate faster than the land can rebuild it. Under ideal conditions, these temporary draw-downs of natural capital can be recovered. But, given the inevitability of drought, flood, and other disruptions, it is all too easy to slide into a downward spiral.

In addition to these natural challenges, there are systemic factors that manifest as unwinnable tradeoffs in the paddock. Chief amongst these factors is a declining terms of trade driven by the ideological pursuit of free-trade arrangements that serve to drive cost of production to an unrealistic minimum. The origin and impact of the policies were recently traced by Geoff Edwards (2020) in a paper produced for the Rangelands Dialogue:

> *Australia's farmers and graziers are running down their natural capital because competition policy domestically and free-trade policy internationally can force the prices of commodities below the cost of sustainable production. In the 1980s and 1990s tariffs were reduced to force so-called fat and lazy industries to reduce costs. Now farmers are being told that their costs must be further reduced in order to match international prices, that is, to maintain low tariffs. This beggar-the-producer policy is now being extended through free trade agreements to the professions, service industries, investors and administrative classes. International free trade bargains away a country's capacity to feed and tax itself and to develop its own intellectual capital.*

Land managers cannot be blamed directly for these larger institutional and cultural machinations. It would be somewhat like blaming individual soldiers for participating in a war that they cannot control. Primary producers are just the "tip of the spear". We need to look more broadly for the rest of the story.

## Is change possible?

If producers aren't entirely to blame for running down the natural capital of the rangelands, and if the primary mechanisms of depletion are driven by big politics, big industry, and the big unknown, it would be reasonable to ask: is change even possible?

I believe change is possible. But to get there, we will need a more careful investigation of the factors holding us back. Where to start? Ultimately everything is connected to everything else, so it doesn't really matter where we start. But I like to categorise and prioritise. In summary, here's my shortlist of the major blockers that need to be resolved or dissolved:

1. **Money - debt and the crisis of capitalism**: with the advent of digital communications and computation, the demand of capital for continuous financial growth has driven us to deadly limits.

2. **Inertia - institutional and individual lock-in**: need to abandon many obligations as if they were stranded assets. We all have to do this and simply move on.

3. **Media - the absence of collaborative discourse in a fake news world**: need to bring more people together in common cause. This is not a process that improves via the profit motive.

These blockers are massive. Certainly it is a long bow to suggest that a loose collection of well-intentioned souls in the back of Queensland could steer the future toward vastly different outcomes. However, when the country is primed for it, new shoots can start anywhere. It's my personal hope that, rather than abandoning the future, rangelands people and their networks will become more active participants. As highlighted in this paper, we each have a gift to contribute. We can all be active participants in shaping the stories and policies that make our shared futures truly prosperous.



*Testing the edges of new possibilities. Forsayth, QLD*

# 2: Natural capital: setting the stage

Over the past four decades the term “natural capital” has steadily diffused through the lattice of connections between pure conservation, pure science, undiluted capitalism, primary production, and public policy.

## Why are we interested?

Economic concerns dominate our modern lives, and for good reason. Very few of us are able to live freely, surviving on the fat of the land in the manner of nomadic hunter-gatherer forebears. Everyone needs to explain their balance sheet when the invisible hand comes knocking at the door: maintenance of financial solvency is essential to being. Under such conditions it is to be expected that much of the interest in natural capital is due to its potential to deliver new financial capital, rather than the potentials of natural capital as seen through non-financial value frameworks.

In other words, many producers, organisations, and commentators start listening to the natural capital discussion precisely because it sounds like (through some black box mechanism) more dollars are going to flow toward producers, their advisors, and their suppliers. But this is hardly an adequate argument in favour of natural capital: if producers could earn significant additional income by tattooing their stock with sponsor logos, there would be a run on green ketchum in no time. If we’re going to evaluate natural capital properly, its merits and flaws will need to be isolated from the generalised urgency for more money to be flowing through primary production.

## A suite of definitions

Natural capital was coined by Schumacher in *Small is Beautiful: Economics as if People Mattered* (1973) and slowly started trending through the late 1990’s when significant applied intellect arrived via the Rocky Mountain Institute (Hawken *et al.* 1999) and then really picked up steam in Australia when the

Wentworth Group absorbed the notion and proposed a national environmental accounting framework in *Accounting for Nature (Cosier et al. 2008)*.

Ecological economist Robert Costanza provides a succinct definition: "(natural capital is) the natural environment and its biodiversity; it is the planet's stock of natural resources, the ecosystems that provide benefits to people (i.e., ecosystem services)." (2014)

We have to be clear that the term itself is a human concern: its utility is revealed in ideas and realities that we humans value. Generally, we think of both the *stock* of living wealth, eg tracts of old growth forest or broad expanses of Mitchell grass, and the *flows* of living energy, eg, the capacity of living soils to increase and drive further biotic production or the capacity of an ecosystem to provide some service that we value. The idea of stocks and flows maintains the metaphor with economic capital: savings (or reserves) and activity (cashflow).

The *Natural Capital Roadmap* offers this view on natural capital:

> *Humans are dependent on natural systems. These systems provide clean water and air, fertile soils, a stable climate and other essential conditions that underpin human health and wellbeing. The term natural capital brings this dependency into economic thinking by positioning the environment as 'natural capital' alongside human forms of capital.(Court and Byrne 2019)*

The World Forum on Natural Capital states that: "Natural capital can be defined as the world's stocks of natural assets which include geology, soil, air, water and all living things."(WFNC 2019)

The agricultural lobby group AgForce are keen to box up natural capital as a portfolio of initiatives that will put more dollars in their members' pockets. In this realpolitik, natural capital is deployed as a way to help de-risk such troublesome issues as climate change and water security by driving more private income into private businesses (AgForce 2019). We'll look at the AgForce position in more detail later.

The National Australia Bank have not put forward a definition of natural capital, but they have a team of clever people working on the risk assessment aspects of "natural value" (NAB 2019).

The National Farmers' Federation has been funded to put some ideas together that will lead to stewardship payments of some sort (NFF 2019b). And the Australian Farm Institute recently hosted a forum at which the main theme was that most agricultural economies in the rest of the world are already dependent on natural capital payments (farm subsidies) and when is Australia going to catch up? (Australian Farm Institute 2019)

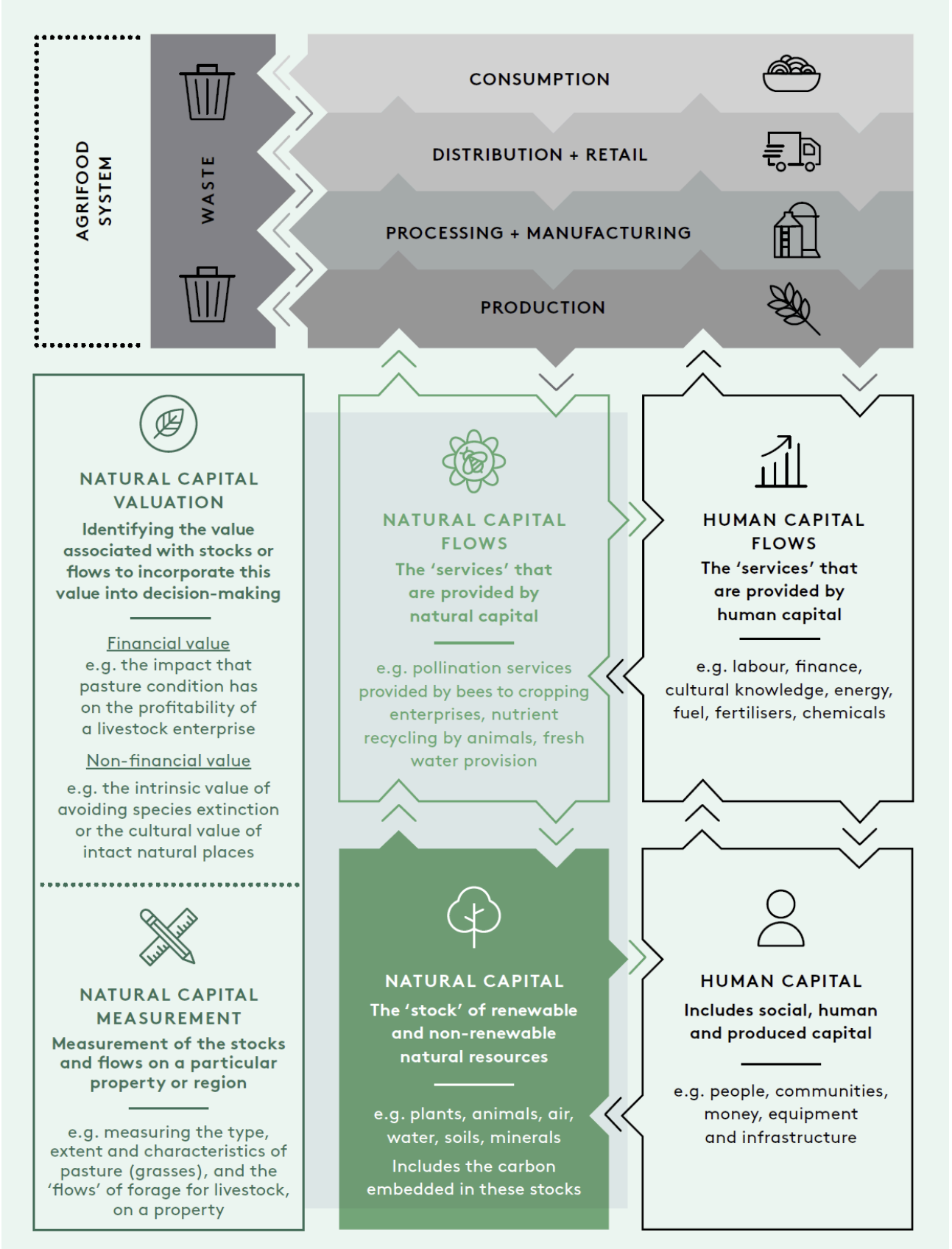
A more conceptually rigorous assessment of various forms of capital, particularly natural capital, is given by Jones *et al (2016)* who assert:

> ...we define (natural) capital 'stocks' as being assets in the environment and capital 'flows' as transformations or movement of those stocks. We adopt an encompassing definition of natural capital as "A configuration (over time and space) of natural resources and ecological processes that contributes through its existence and/or in some combination, to human welfare."

And the fine folk at Conservation International offer this conversational view:

> *What is "natural capital"? -- It's the stock of renewable and non-renewable natural resources (e.g., plants, animals, air, water, soils, minerals) that combine to provide benefits to people.*
>
> *What kind of benefits are we talking about? -- The air we breathe, the water we drink, the food we eat, the wildlife that maintain healthy ecosystems, the forests that absorb carbon from the atmosphere and regulate climate — all of that comes from nature.*
>
> *So natural capital is simply "stuff that nature does"? That seems rather broad. -- Here's another way to think of it: Imagine that nature is a trust fund, and humans are the beneficiaries. Humans live off the "interest" that the fund provides — the air, water, raw materials, carbon storage and its ability to regulate climate and mitigate floods, and so on. If humans keep dipping into the capital — by clearing too much forest, for example — we're going to see diminishing returns from those dividends, to say nothing of their ability to continue to provide benefits over time.* (Velde 2016)

Finally, this excellent effort by Climateworks brings natural capital into a single graphical frame that maps out the territory in terms of types of "capital" that interact in the nation's primary production systems: (Court and Byrne 2019)


AGRIFOOD SYSTEM
WASTE
CONSUMPTION
DISTRIBUTION + RETAIL
PROCESSING + MANUFACTURING
PRODUCTION
NATURAL CAPITAL VALUATION
Identifying the value associated with stocks or flows to incorporate this value into decision-making
Financial value
e.g. the impact that pasture condition has on the profitability of a livestock enterprise
Non-financial value
e.g. the intrinsic value of avoiding species extinction or the cultural value of intact natural places
NATURAL CAPITAL MEASUREMENT
Measurement of the stocks and flows on a particular property or region
e.g. measuring the type, extent and characteristics of pasture (grasses), and the 'flows' of forage for livestock, on a property
NATURAL CAPITAL FLOWS
The 'services' that are provided by natural capital
e.g. pollination services provided by bees to cropping enterprises, nutrient recycling by animals, fresh water provision
NATURAL CAPITAL
The 'stock' of renewable and non-renewable natural resources
e.g. plants, animals, air, water, soils, minerals
Includes the carbon embedded in these stocks
HUMAN CAPITAL FLOWS
The 'services' that are provided by human capital
e.g. labour, finance, cultural knowledge, energy, fuel, fertilisers, chemicals
HUMAN CAPITAL
Includes social, human and produced capital
e.g. people, communities, money, equipment and infrastructure

## Necessary tensions?

Although these definitions are all useful, they miss or obscure perhaps the most oft-cited rationale for natural capital: the environment needs to be on the books. What you don't measure you don't value. The reasoning goes like this: since economics is the foundational organising concept for modern society, it is mad to leave ecosystems "off the balance sheet". By assigning economic value to natural capital it will be properly taken into account through the myriad complexities of decision-making, all of which-ultimately-seek to maximise the utility of a dollar. There are many who echo this view. Dieter Helm (2019) is probably one of the most careful and convincing of the proponents of this view.

However, there is a strong countering argument which positions economics as a useful mechanism, but it is neither necessary nor sufficient to ensure the survival of humanity. Clearly, there are no jobs on a dead planet, or as Herman Daly famously put it: "The economy is a wholly owned subsidiary of the environment, not the other way around."

This appears to confront us with a hard-edged dilemma: either economics comes first, or the environment...it can't be both.

Brilliant minds have dedicated themselves to finding a way to deliver beneficial environmental outcomes within the classical strictures of free-markets and consumer capitalism. Among these, Amory and Hunter Lovins of the Rocky Mountain Institute have coaxed impressive proof-of-principle initiatives from imagination into the real-world. But these proof-of-principle case studies have done little to steer the broad course of modern society back into safe ecological limits.

So how do we approach the sharp dichotomy between the economic and the ecological? Here's another hot-take for consideration:

Humans are biological. This simple truth will pertain until and if a "transhuman" evolutionary break occurs. If this happens, whatever entities arise on the other side of that break will certainly not be human. So, for practical purposes, it should be sufficient to simply assert that humans are biological.

The next observation is that our biology does not (and cannot) be sustained outside of the vast, entwined, dynamic system that comprises biological life on the planet. Thus, if we exceed the safe operating limits of this system, it is highly likely that humans will be sloughed off, remembered as little more than another of life's many experiments that failed to find themselves fit for purpose. The unavoidable truth is that, even for humans, biology must come first.

This raises the other side of the dilemma: how do we express our uniquely human nature? We appear to be a different sort of creature: we have special sorts of fitness (in evolutionary terms)...so what is our fitness to be used for? The world has already seen countless interesting lifeforms come and go. Should we live like we think dolphins and chimpanzees live...like the "noble savage" who is completely at one with nature, to offer a much-caricatured strawman. Taking this line denies any possible benefit from people being *people*, in all their contradictory and baffling ways.

What to make, then, of domesticated dogs, wheat, pyramids, rice, geometry, steam engines, microchips, the Burj Khalifa, the Mars rover, postmodernism, Bitcoin, no-kill farming, and COVID-19? People are doing something amazing, for sure. What if we simply asked the question: in what ways could life *need* people? This might excite some interesting conversation, and is certainly more generative than the

more typical positions (ie, “people are a cancerous aberration” vs “all of the earth is here to fulfil human desires”).

We can start by taking an inventory of homo sapiens’ “features” and then puzzle over how they may be put to service. Whatever the outcome of that research, we can already observe the astonishing capacity of large groups of humans to devise methods for cooperative interaction as argued by Harari (2011). When the world was smaller we organised ourselves around charismatic individuals, or religions, or folk-beliefs that provided a common framework for cooperative behaviour.

It’s actually of enormous value for groups of anonymous or remote entities to operate with a common framework of values, and economics could be seen as the most efficient cooperation process ever deployed amongst our species.

There must be some very interesting cooperative mechanisms operating within living organisms such that very different types of entities still manage to achieve high degrees of coherence. In healthy bodies there is a cooperative allocation of energy for common good: the liver does not compete with the heart for oxygen, it is rather a process of dynamic balance so that the heart gets enough oxygen when running away from a grumpy scrub bull vs the liver needing an extra allocation when processing the story of the narrow escape with a couple of Greg Normans down at the pub. We don’t think about these dynamic shifts of oxygen budgets within our bodies, we don’t experience the stress of relentless competitive drives between our synapses and amino acids, we trust each of our cells to act cooperatively with its neighbours, and hope this cooperative spirit carries on amongst the distinct polities within each cell membrane.

So whatever economics is, its power to facilitate cooperation across a disperse network of anonymous actors is not to be trivialised. It is this aspect of economics (debt and money in particular) that reflects the elegance of the entire universe.

Thus, as with all good dualities, we find merit across the spectrum from pole to pole. How to proceed? As the wisdom traditions tell us, our course through the dilemma is not absolute adherence to one pole or the other. Rather, we are called to surf the dynamic interplay between the two horns of the dilemma, always conscious of the need to keep both poles in mind. Neither can become a totality.

Perhaps what we need is better navigational tools to allow us to better balance our way between the impossible extremes? If we’re going to take natural capital for its beneficial utility, can we set out a metric that assesses the merits of different natural capital formulations?

## A metric for assessing natural capital formulations

Let’s return then to natural capital’s black box: what exactly is it supposed to do? How does natural capital route economic capital through the production sector? What is the *utility* of natural capital as an ideological symbol? Is it revealing something new to us? Is natural capital an novel innovation, a new story of some sort?

The first response would have to be no. In many ways, natural capital is a re-packaged version of commonsense. Everyone knows that if you take care of country, country will take care of you. This is the cornerstone of both Indigenous conceptualisations of land (ca. Turner 2010) and the wise insight of

producers with a long-term view (ca. Purvis 1986; Massy 2017). So why do we need a bit of jargon draped around what most people of the land would think of as just basic commonsense?

As explored above, the term natural capital highlights a tension between basic commonsense, where taking care of country is the first priority, and basic economics, where taking care of capital is the first priority. I called this the “necessary tension” that enables natural capital to connect us to the productive region lying between opposing value frames: economics vs ecologics.

The tension between these two priorities gives rise to proposals for radical neo-peasant reforms of agriculture such as Luke Foley’s Farming for the Long Haul (2019) through to Helm’s vision of a highly prescribed and state-centred agricultural sector (2019).

If natural capital can span such a diverse range of ideas, it might be useful to get away from the internal semantics of any given natural capital or agri-environmental scheme and instead evaluate it through its on-ground utility.

I suggest these are the three key expectations that any natural capital proposition needs to address:

1. Natural capital concepts should help **shift economic norms toward more life-affirming outcomes**, starting with an understanding that the economy is a subset of our larger human and biological priorities.
2. Using natural capital concepts, land managers should be more likely to **make better long-term decisions** and thereby enjoy an upward trend in landscape condition and resilience.
3. Natural capital propositions must operate with sufficient ethical credibility to **justify significant public investment** over the long term.

These criteria can assist the effort to weigh up tradeoffs between various natural capital schemes. Although they invite a highly subjective assessment, these criteria can highlight important differences in the principles behind each scheme. Here’s a table version with codes. I’ll use this metric later in the essay:

Table 6 *Assessment metric for natural capital initiatives*

| Code | Label | Summary | Scale |
|---|---|---|---|
| **1** | **MicroEconomic** | Shift the larger economic game toward improved livelihoods and lowered pressure on country. | 5 - High impact<br>1- Low impact<br>0 - No relevance |
| **2** | **LocalProsperity** | Land managers are more likely to enjoy an upward trend in landscape condition and resilience. | 5 - Highly likely<br>1- Not likely<br>0 - No relevance |
| **3** | **PublicInvest** | Sufficient ethical credibility to justify public investment in rangelands. | 5 - High investment<br>1- Low investment<br>0 - No relevance |

## Grazing is the driver of natural capital in the rangelands

In the Queensland outback, extensive grazing would account for close to 100% of the natural capital run-down, where run-down is occurring. Cropping and grain production account for modest total land area. Mining is undertaken intensively, but again, it occurs at a very small geographical scale. Widespread disturbance from alluvial mining, such as in the pock-marked Mitchell and Gilbert catchments, is largely a thing of the past. The impacts of fracking and coal mining on water resources is still being debated, but for the moment appear to have little direct impact on land productivity.

There is a wide range of views on the current condition, trend, and ideal state for ecosystem health. A recent statistical survey (in preparation, Phelps 2020) suggests that for much of the rangelands, conditions are in the range of A to B+, at least as gauged by the cattle industry. It is certainly true that some beef production practices actually contribute to building natural capital (eg cell grazing and wet season spelling) but for the purposes of this analysis I am only looking at the dimension of land management practice.

Can stocks of natural capital change (positive or negative) while grazing area and profit are held constant? Again this is a complicated approach because there's no way to know what time period is being considered, how to apportion new biological factors, and changes to financial and market externalities. However, the focus here is essentially on purposeful practice change. In other words, the specific act of creating natural capital as the primary goal. My justification is that this maps most closely to the proposition put forward by ag industry groups: if the public is interested in building natural capital stocks, the land manager should be paid for that effort.

So we are in a scenario where the land manager is going to do something different, and that will have economic impacts on their current practice, BaU (business-as-usual).

Taking this approach puts the question of how to build natural capital directly in the hands of land managers and frames it in the most relevant terms possible: an economic argument.

## What is the scale of natural capital in the rangelands?

Evaluating the suitability of natural capital and agri-environmental schemes can be more efficient if there is a rough and ready way to estimate the scale involved. Even the most carefully designed strategy will disappoint unless it is scaled appropriately. To this end I will propose a very simple method for estimating an economic dimension to natural capital in the context of Queensland's outback country.

The rangelands account for 80% of the Australian landmass and of that, I assume 70% is available for extensive beef and sheep production, based on Queensland's patterns. For simplicity, I'll only consider cattle. Working through the ratios, this gives us a production landscape of about 600M hectares. Since there are very few external inputs to the business of extensive grazing, it is reasonable to suggest that the economic value harvested from that landscape is the best existing measure of the value of its natural capital. Other landuses would have different values. For example dryland sorghum and irrigated cotton extract economic value at a higher rate per hectare while involving far higher levels of external inputs. Currently, these alternate landuses are negligible across the rangelands so I will narrow the

question down to: how much economic value is realised from the conversion of rangelands natural capital to beef?

Industry estimates (MLA 2019b) show the total value of Australian beef sales at the farm gate, ie. the value returned to producers, is $19.6B. We're not sure how much of that should be credited specifically to the rangelands, so let's assume 70% again (the rest being income from intensive operations).

That gives us $33/hectare (per year) as the gross economic value earned from harvesting the natural capital of rangelands country.

Table 1 *Annual value of beef production in rangelands, per hectare*

| | | |
|---|---|---|
| Australian landmass is | 7,500,000 | km2 |
| Rangelands are 80% of the Australian landmass | 80% | |
| Rangeland area is | 6,000,000 | km2 |
| | 600,000,000 | ha |
| Fraction of land dedicated to beef production. Assume: | 70% | |
| Beef production area in the rangelands is | 420,000,000 | ha |
| Total Aus beef production value. Assume this is value of gross return to to producer: | $19,600,000,000 | per year |
| Fraction of production from rangelands. Assume: | 70% | |
| Total value of rangelands beef production | $13,720,000,000 | per year |
| **Beef production value of the rangelands landscape is** | **$33** | **per ha, per yr** |

This is a hugely simplistic approach, but it does set the stage for further discussion. The next question is: how do we go about estimating the economic investment required to build natural capital?

## How much would it cost to build natural capital in the rangelands?

The Rangelands Declaration notes that there is a shortfall of economic investment needed to grow the stock and flows of natural capital in the rangelands:

> *Recognise that more investment is required to build the ecological health of our country, including arrangements that deliver stewardship and natural capital payments.(Declaration 2019)*

So how much are we talking about? That depends on a huge range of factors, and no answer is going to be perfect.

A report prepared for the National Land Development Corporation two decades ago estimated that the cost of repairing the Australian landscape would be $65Bn over 10 years (2000). This was in the context of all land types and production systems, though an inspiring figure that attracted plenty of headlines, it also attracted well-deserved criticism for its lack of economic rigour (ca. Pannell 2002).

According to work commissioned by the Australian Agricultural Alliance on Climate Change (Hatfield-Dodds et al 2007) (cited in Hatfield-Dodds and Proctor 2008), it would take annual payments

in the range of $0.7 to $1.6Bn to secure conservation agreements for 10% of each ecosystem and habitat type across Australia.

In the current fashion of COVID-led economic policy, a consortium of 70 leading environmental organisations (BeefCentral 2020) has proposed a $4Bn x 4 yr program that is basically a jobs-creation effort aimed at providing work for up to 24,000 people. The program is not directly indexed to a natural capital outcome, though an investment at this scale would be certain to deliver much-needed environmental outcomes.

It might be useful to note the scale of money being invested in conservation activities. Olmsted (Olmsted 2017, p.5) cites these figures: “The current estimate of annual global expenditures for conservation is in the vicinity of US$30B (Bovarnick et al., 2010), whereas the global need is estimated to be between US$200-300B per year (Credit Suisse et al., 2014).” A local comparison: the 2020 Queensland state budget provides $42M/yr in public funding for horse racing and greyhound racing...it provides $40M/yr for all national parks and World Heritage areas combined (Duck 2019; Anon 2020b).

A current project by Prof Paul Martin at the Australian Centre for Agriculture and Law (UNE) is developing a method to estimate the total investment needed in regenerative agriculture to recover and repair the productive capacity of the land. The estimate will be driven by a survey of land managers and examination of key case studies to derive a national figure.

A private philanthropic investment of $250M (Restore Australia) is being considered by a European donor who is concerned that our nation’s agricultural policies are failing to adequately safeguard and restore our land for the benefit of future generations. The target is to shift 10M hectare to regenerative farming practice within 5 years. The investment averages out to $5/ha per year over the course of the program.

Key to the difficulties in arriving at an agreed figure is the rather impossible nature of agreeing on what it actually means. Consider the proposition that: “On average, well-adjusted children raised in a loving household with sufficient material means are much more likely to grow up and be productive contributors to their community and country.” Now, (with apologies to my North American relations) imagine standing in an elementary school in a poverty stricken, pro-Trump West Virginia coal town and asking: “How much money will it take for these kids to have a happy future?” The estimates will range from [*can’t be done*] to [*it is what it is*]. There are simply not enough common values or goals to form a shared set of metrics.

Even if we could find some useful indices for environmental condition (natural capital) it would still be nearly impossible to establish a 1:1 connection between quantity of money invested and quantity of natural capital returned over some given time period. Perhaps the lack of formalised costing is acceptable and appropriate as suggested pragmatically by Costanza et al (2014) and more philosophically by Kallis (2017).

One thing that is certain: any proposed number will attract fierce criticism. Such animated discussion can provide the opportunity to learn a bit more about how to usefully connect the economic framework to the living framework. For the moment, there are few numbers to even start the conversation. Since economics is our *lingua franca du jour*, and I want this paper to have implications for real policy change, let’s have a crack at some natural capital numbers for the rangelands. I will take a “displacement”

approach to derive the economic figure needed to pay for practice change that has a material effect on natural capital.

## Bye-bye BaU: displacing business-as-usual

I assume that land managers are already optimising their businesses in light of the incentives they face. This is Business as Usual (BaU). Practice change, by definition, involves deviation (or displacement) of the BaU. Although there are many possible ways to drive practice change, I am only considering the possibility of buying practice change as if it were offered to the market as a straight commercial proposition.

This approach is justified firstly by the goal of making natural capital schemes entirely visible to the commercial system, and secondly by the goal of responding head-on to the primary reason producers give for *not* undertaking better land management: “We can’t afford it.”

There’s a related dimension here which is time. Since I assume that land managers are already 100% committed to their business as beef growers, if they were to take up opportunities to earn stewardship payments, where would the additional time come from? There are only so many hours in a day, so earning stewardship payments could only occur, practically, as a result of displacing some of the time that would otherwise be devoted to the BaU grazing enterprise.

With this idea of displacement established, the question arises: what is being purchased? Broadly speaking, what is being purchased is practice change. Specific management actions will have complex effects on country that are impossible to model and which should never be mandated by a central authority. But we can be reasonably confident that there is a big difference between investing 3 cents per hectare and investing 3 dollars per hectare. Because I am using displacement of economic earnings to quantify the scale of natural capital investment, the result is an economic intensity per hectare which is useful for making very general comparisons between different funding options.

Of course this approach fails to account for the vast differences in “conservation value” between different environmental assets. Much of the literature takes it as a given that some bits of the land are far more worthwhile than others, and set about creating rules and adjustments to accommodate this perceived disequality. After all, surely a RAMSAR-listed wetland is far more “important” than an anonymous stretch of lancewood out the back of Croydon, right? There’s some merit in this approach, especially given the extremely fragmented and tenuous condition of some precious natural systems.

However, I believe this is actually a distraction from the more fundamental point that all of the landscape is interconnected and of “essential” value. Interconnectedness (“holism”) is difficult for most of us Westerners to deal with as we are so accustomed to reducing systems to their components and categories (Lent and Capra 2017). But it’s a pretty straightforward concept when scaled to the personal level. For example, consider how odd it would be to assess which bit of your body was “less important.” I have never heard anyone discuss the relative merits of losing a finger versus losing a kidney, or how they might prefer to lose a parent versus losing a sibling. Though these losses do occur in the great tragedy of life, we don’t seek to make these trades as a normal part of seeking happiness. The conversation amongst most people tends toward *maximising wholeness*, not weighing up negative

tradeoffs. The more keenly we perceive this, the more likely we are to make good whole-of-system decisions.

So, for equity issues, it could be advantageous to deal with the entire landscape as an equivalence. Every hectare is worth the same. This would avoid endless contest over whose hectare is most important, and which bits of the land are “worthy” and which bits are “waste”. All land is precious and valuable. My position here is likely to be seen as extreme, but I will leave it to others who are better at finding the incremental processes that connect to today’s realities. For example, the ever-practical Dave Pannell offers some thoughts (2002) on how to calculate a net benefit for different types of investment in different types of land restoration.

Back to the calculations. We can imagine that if, at national scale, we commit to a policy that aims to improve natural capital over 20% of the rangelands (area) at an annual rate of 10% practice change displacement (economic intensity), we are looking at a national investment of about $55M/yr.

Table 2 *Example of displacement investment calculation for 20% of rangelands (Australia) at 10% intensity*

| | | |
|---|---|---|
| Beef production area in the AU rangelands is | 420,000,000 | ha |
| Fraction to be improved (target for natural capital practice change) | 20% | of total beef area |
| Improvement area (for natural capital investment) | 84,000,000 | ha |
| Displacement percentage (economic intensity) | 10% | |
| Value of beef production (status quo) | $33 | per ha, per yr |
| **Natural capital investment quantum** | **$54,880,000** | **per yr** |

Queensland accounts for about 47% of beef production. Keeping all other variables steady, this means the Queensland natural capital investment to displace 10% of BaU grazing across 20% of the landscape would be about $26M/yr.

Table 3 *Queensland displacement investment*

| | | |
|---|---|---|
| Queensland percentage of production (of national total) | 47% | |
| **Investment to displace 10% of BAU on 20% of QLD rangelands** | **$25,793,600** | **per yr** |

There is no way to neatly connect a dollar invested in a natural capital strategy and a “percentage improvement in land condition”...things are simply not that simple. But the displacement investment method outlined above at least offers some sense of scale. And importantly, it positions any discussion of natural capital in the context of a land manager’s straightforward cost/benefit calculations, which is where most well-intended arguments for practice change come-a-cropper.

The displacement strategy could work because commercial returns are at the centre of practice change. Natural capital can be increased or decreased via an endless range of strategies. A fence here, removing a watering point there, reducing herd in this season, shifting in that season...these are all fine-scale judgements that are entirely within the skill and mandate of the land manager. No one knows that country better than they.

But *purposefully building natural capital* is a different idea to *purposefully building a profitable beef enterprise (with some natural capital gains as a side benefit)*. This has profound implications for who is

best suited to managing the land. One or the other objective needs to take precedence. It is also the inflection point in the problem of public money spent on private lands.

## What are the downward pressures on natural capital?

Clearly, there are many factors driving landscape decline, rural depopulation, and the trend toward corporatisation of primary production (Foley 2019). I want to highlight the influence of macroeconomic policy on primary producers in Queensland.

There is disturbing evidence that agricultural production has been floating on a deepening debt for some time now. Work by the heterodox economist Ben Rees (2019) demonstrates that as early as 2005 the gross value of Australian farm production fell below the total amount of farm debt. In other words, more debt is required to produce food than the food is worth.

Rees suggests that this is a direct consequence of inadequate agricultural policy, noting that neither Australia's rural adjustment approach or the farm subsidy models pursued overseas have been successful at defending a necessary level of profitability, much less providing for ecological protection and reinvestment in natural capital. Our agricultural policy has increasingly exposed farmers to the pressures of globalised markets and competition for short-term capital returns, to be achieved at virtually any cost to the environment. He concludes that, until better economic models are developed, "...demands for environmental sustainability will achieve little other than to move focus away from the need to reform inappropriate agricultural policy and drought policy." (2019)

Focussing on the downward pressure on farm earnings, the National Farmers' Federation encoded a variation on Rees' assessment directly in their Natural Capital Declaration:

> *...the benefits of lower food and fibre prices due to open competition within a free trade environment are enjoyed by all consumers. This is, at its worst, to the determinant of landholders who are struggling to cover the costs of environmental stewardship. The long-term outcome of this problem is the degradation of our natural capital. To continue with the current approach to agricultural supply chains is not in the best interests of farmers or Australian consumers.* (NFF 2019b)

Although the NFF have a poor track record in defending the interests of smaller, domestic producers, they are at least clear in their observation that unrestrained free trade can encourage a race to the bottom.

Simply put, the demand for return on economic capital ensures that reinvestment in the land will be systematically minimised. This is especially true where the reinvestment has a higher proportion of public good, indirect benefit to the producer, or is associated with uncertain, distant outcomes. Pragmatically we are forced to discount the future in a struggle to reliably service current debt. Satisfying the financial returns on capital *first* is our only choice under the BaU model. It makes beggars of us even as we beggar the land.

As long as capital returns have the casting vote in every decision, our long-term trajectory is gloomy and grey(Eisenstein 2011; Helm 2019). Sticky-taping a "natural capital" stewardship payment on top of

the existing machinery of capital-centric management practices will do little to stimulate the profound change of culture that is needed.

## Get over the export

As noted, one of the big policy blockers is Australia's participation in various free trade agreements which expose rangelands producers to global markets. In a frank assessment by Edwards, this single 'imperative" of the macroeconomic model drives a grim cycle of decline more emphatically than any other single factor:

> *A high proportion of rural properties carry financial debt that cannot be serviced through income earned by producing commodities of food and fibre. The prices that farmers receive for many commodities are capped by international prices set in US dollars, but their costs are set in Australian currency and rise according to the cost of living so they have no ceiling. Primary producers are reduced to being price takers squeezed by competition between middlemen and retailers within Australia, and yoked internationally to a national bipartisan commitment to nearly unconditional free trade and free foreign investment.*
>
> *In pursuing competition policy, since 1995 governments have deliberately preferenced the interests of consumers in cheap food products over the interests of producers in receiving a fair return for their labour and investment. Producers instead are lectured to reduce costs to remain competitive. 'Reducing costs' for farmers means investing less in the regeneration of the natural capital asset on which their enterprises are based, as these expenditures can be deferred.*
>
> *The resultant of these forces means that graziers in Queensland's pastoral zone typically cannot look to market forces to reimburse them adequately for the cost of producing commodities sustainably, let alone for the cost of regenerating landscapes that need rest and restoration. After a run of dry years, many farmers have nothing left in reserve. This is not to deny that some grazing businesses are reliably profitable, use advanced technology, are managed by optimistic, energetic and enterprising operators and are actively working towards sustainability. In the unimproved pastoral rangelands as defined here, however, this does not describe the typical enterprise.* (Edwards 2018, p.4)

Exported beef must be competitive on the world market, which means there are limited opportunities for the federal government to offer direct payments to farmers (to improve natural capital) because these could be seen as subsidies under the various free trade agreements we are party to (Edwards 2020). There are clauses in the WTO agreements that allow for payments to producers in relation to natural disaster, ecosystem services, and loss of income (via Rees 2020). However, these clauses would be examined in an extremely adversarial manner by our competitor exporters, potentially limiting the degree to which they can be usefully developed and applied for our producers.

As a consequence of their disastrous dabble with globalised trade policies, Australian policy makers have sold us the wrong end of the pineapple. Edwards puts the matter succinctly:

> *No longer is trade policy viewed as a tool to advance the national well-being. Conversely and perversely, the well-being of Australia's producers and consumers is subordinated to the*

> *ideological pursuit of "free" trade, with "free" being defined by the nations who wield the most trading power. (2020, p.2)*

Instead of contorting the concept of conservative land stewardship in order to eke out a concession from the cut-throat competitive world of global beef trade...what if we simply reduced the level of exports and found better opportunities for outback communities and their land?

Tapering down exports will "earn" a natural capital improvement through reduced grazing pressure on country. There's a whole raft of land management that needs to take place in order to avoid the negative consequences of removing cattle, but that's another line of discussion. For now, let's just consider the flexibility we gain by un-shackling ourselves from the demand for export earnings.

Nearly three-quarters of Australian beef is produced for export (MLA 2019b) and there is virtually zero import. Feeding our own country would require only 25% of the current production effort.

What will the beef producers do with their extra time? How will beef importing nations cope with Australia's withdrawal from the export beef market? What will happen to all the land that is currently under management for beef production?

These are relevant questions. They need to be tabled in an open and creative national conversation, connecting land managers with money managers, and anyone in between. Perhaps a Dialogue would suit the purpose.




*The relationships between real wealth and financial wealth give rise to contradictory and highly contested views on land management. (photo via: [https://twitter.com/CameronJudy3/](https://twitter.com/CameronJudy3/))*

# 3: Natural capital: an assessment of initiatives

Natural capital initiatives are aimed at creating a meaningful linkage between the (real) living capacities of the planet, and the (imagined) reality of financial capital (expressed as monetary accounting entries). There's a lot of territory here. In this section I'd like to examine some of the instrumental expressions of natural capital as a potentially beneficial metaphor.

Although there is a considerable academic literature probing the topic, and no shortage of reporting in the press and blogosphere, it is interesting to note how few monetised natural capital implementations exist. My intent was to provide an assessment of the various policies, protocols, and position papers that constitute "natural capital in action" but the pickings are thin. Perhaps this reflects the fact that, at the moment, very little money actually flows through a "natural capital" theory until you get to the edges for things like the USA's Farm Bill, the European Common Agricultural Policy, and the UK's Natural England programme. Although natural capital concepts are certainly mobilised through these schemes, the general focus is on mobilising capital in the form of business support. Except for Natural England, there is no coherent ecosystems accounting or holistic environmental policy to correlate the business support measures.

On the other hand there are some excellent natural capital initiatives such as the “4 per mille Soils for Food Security and Climate” program (Minasny *et al.* 2017) which connects with evidence-based regenerative outcomes, but for which there is no formalised funding mechanism.

From the material that is available, I’ve attempted to form two clusters: the theory, standards, and data sources are under **Frameworks**, while the actionable codes of conduct, position papers, and policies issued by relevant representative groups are under **Positions and Implementations**. Essentially this is an attempt to separate out the more abstracted initiatives from those that are closer to boots and hooves on the ground.

**Frameworks** are simply indexed and summarised. **Positions and Implementations** are assessed against the natural capital expectations proposed in Chapter 2. A similar exercise, focussed on formal typologies and functional mapping, has been undertaken in the South African context (Barendse and Currie 2016, p.3). The closest example in Australia is the assessment framework in Dale et al (2013b) for a Governance Systems Analysis that potentially reveals a map of organisational capacities and network richness.

# Frameworks

Table 4 *Significant international frameworks and Australian initiatives*

| Ref | Name / location | Summary | Scope |
|---|---|---|---|
| 1 | System of Environmental-Economic Accounting (SEEA)<br>https://seea.un.org/ | *...a framework that integrates economic and environmental data to provide a more comprehensive and multipurpose view of the interrelationships between the economy and the environment and the stocks and changes in stocks of environmental assets, as they bring benefits to humanity.* | UN / Global |
| 2 | Wealth Accounting and the Valuation of Ecosystem Services (WAVES)<br>https://www.wavespartnership.org/ | *WAVES is a World Bank-led global partnership that aims to promote sustainable development by ensuring that natural resources are mainstreamed in development planning and national economic accounts.* | Global |
| 3 | Natural Capital Protocol<br>Natural Capital Coalition<br>https://naturalcapitalcoalition.org/ | The Coalition is a member-based organisation to coordinate natural capital matters, especially at large corporate and government scale.<br>*The Natural Capital Protocol is a decision making framework that enables organizations to identify, measure and value their direct and indirect impacts and dependencies on natural capital.* | Global |
| 4 | Australian Environmental-Economic Accounts, 2019<br>(LINK) | *Australian Environmental-Economic Accounts (AEEA) contains accounts for key environmental themes. The AEEA is data focused, with minimal interpretation or analysis.*<br>*In the AEEA, accounts are provided for environmental assets, water, energy products, greenhouse gas (GHG) emissions, and environmentally related taxes.* | Australia |

| | | | |
|---|---|---|---|
| 5 | Climateworks: Natural Capital Roadmap (LINK) | *… focuses on embedding the concept of natural capital, and specifically the measurement and valuation of environmental 'assets' as an important (but insufficient) enabler of increasing sustainable land use.* | Australia |
| 6 | An Experimental Ecosystem Account for the Great Barrier Reef Region, 2015 (LINK) | *This information paper presents an experimental ecosystem account for the Great Barrier Reef (GBR) Region of Australia. The account is consistent with the System of Environmental-Economic Accounting 2012 - Experimental Ecosystem Accounting framework* | Australia, QLD, Great Barrier Reef region |
| 7 | Dept of Environment, Water, and Planning: Accounting for the Environment (LINK) | *We are developing accounting applications based on the SEEA framework to provide better, integrated and more consistent information and analysis on our environmental assets in Victoria – information about which assets have been depleted or lost, which are declining in condition, and how the health of these assets affects our well-being as a society.* | Australia, VIC |

# Positions and Implementations

## *Accounting for Nature*

https://wentworthgroup.org/2016/12/accounting-for-nature-2016/2016/

The Wentworth Group's 2016 publication, Accounting for Nature (AfN) set the high-water mark for an approach to measurement that is both rigorous and practical for local, regional, and national implementation.

Billing itself as "A scientific method for constructing environmental asset condition accounts," the AfN is somewhere between a Framework and an Implementation. I'm listing it here because it deserves attention and respect as a world-leading contribution to this space.

Essentially, the AfN is a structured method that supports the development of self-consistent, repeatable indices of environmental condition. The establishment phase defines the accounting context (eg, spatial boundaries, environmental attributes that will be measured, reference condition, aspirational conditions).

Once the context is established, the asset is surveyed to determine current (actual) condition of the asset. From here, the accounting process is set to run. Periodic observations are taken and the results interpreted. Change is recorded in a 100 point scale (percentage diff) Fractional units of change are "denominated" in something Wentworth have called "eConds" (units of environmental condition).

At a property scale, a land manager might decide to implement the AfN methodology to demonstrate condition change for a stretch of mixed scrub and frontage that they wish to manage for "natural capital outcomes". If the marketplace accepted eConds as valid units of natural capital, we could

imagine an efficient conversion of observable natural capital outcomes (expressed as eConds) and a compensating quantity of economic capital (expressed as dollars).

This model can be scaled from the paddock up to national coverage. There is no intrinsic limitation to what can be valued in this way since the AfN process is always premised on a well-defined context.

There are limitations, of course. I'll discuss two places where I think the AfN has vulnerabilities: comparability depends on baseline data, and lack of metric relevance.

Comparability. The AfN divides the environment up into 5 broad classes (Land, Freshwater, Coasts, Marine, and Atmosphere) from which accounts can be defined.

In any given class there is expected to be some relevant data that establishes a "baseline" condition. The term baseline is a bit misleading (IMHO) because in practice it means something closer to "pristine" or "pre-European contact", with the in-built assumption that this represents a kind of "ideal" (debate on this point could be considerable).

By requiring the use of a published dataset as a baseline, AfN hopes to achieve cross-project comparability so that the value of an eCond from *this* project is "equivalent" to an eCond from *that* project.

Several issues arise. Data is notoriously sparse for most environmental assets. Despite many (and ongoing) rationalisation projects data also continues to be patchy and disorderly. And data is always shifting as new evidence (modern and archival) comes to light. This would require a rather frequent re-valuation process for the eCond.

For eConds to be comparable between projects, there needs to be a high level of coincidence between them. For any given two projects in a specific asset class, I wonder what the statistical odds are of a 1:1 match between (a) their specific environmental assets; (b) the quality, currency, and precision of baseline data for their spatial extents; and (c) the ongoing account maintenance regimes.

Relevance. AfN depends on the selection of a discrete number of indicators and formulation of an observation strategy that will yield comparability over time. This is a familiar approach to measurement, particularly in the sciences. But it is not necessarily suited to assessment of natural systems where any specific observation at any given time is highly likely to miss the "essence" of what's going on. In the context of engaging with a living system, where continuous learning and adaptation are the norm, it will be interesting to see how an eCond may morph over time.

This is a very difficult matter to resolve, I believe, as it goes to the heart of the divide between reductionist strategies and holistic understanding. Further discussion is outside my timeline for this essay, so I leave the matter here for further reflections.

Summing up...The central goal of AfN is to provide society with a tool that allows for more efficient measurement of good (and bad) environmental changes. In this sense, it is a most welcome contribution. It is already being deployed by the Queensland government's Land Restoration Fund and it is likely to fill an important void in the natural capital strategies of the future.

### *Climateworks: Natural Capital Roadmap*

https://www.climateworksaustralia.org/resource/land-use-futures-natural-capital-roadmap/

The Natural Capital Roadmap is also listed under frameworks because it contains elements at both abstract and actual implementation.

The Roadmap was developed through a careful process of workshops, expert groups, forums, and conversations that expressed a high level of integrity and commitment to the goals of the project. In addition to the condensation of the problem space to 9 “action areas”, the process also invited the formation of new coalitions and collaborations amongst participants. This unique approach aimed to both capture expert views from a broad cross-section of relevant actors, it further aimed to precipitate new cooperative action, ie, to start driving on the road that the roadmap proposes.

Presented as a tabulation, the Roadmap offers a summary of where we are now, what is needed next, and who are the most relevant actors. This assessment is offered across the 9 action areas.

It is a valuable and useful contribution to the natural capital discussion in Australia, and should be supported by periodic review and re-publication. It would be straightforward to produce a trend report against each of the action areas, and this could go a long way toward more effectively communicating the state of natural capital implementation.

The Roadmap makes an admirable attempt to communicate the limitations of natural capital accounting at the same time as providing an optimistic recommendation:

> *This Roadmap focuses on embedding the concept of natural capital, and specifically the measurement and valuation of environmental ‘assets’ as an important (but insufficient) enabler of increasing sustainable land use.* (Court and Byrne 2019)

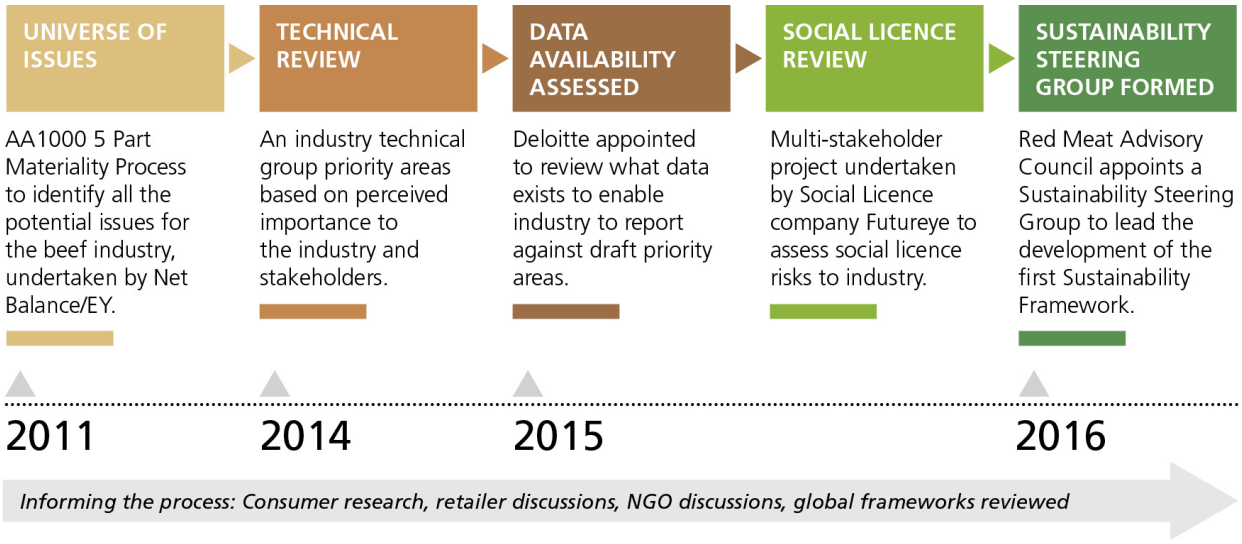
The word “insufficient” is significant in this context as it leads toward the larger critique of a capital-centric worldview, to which I have already dedicated a fair bit of time. Given the Roadmap’s institutional positioning, it is to the credit of the authors that they managed to retain this warning flag in the final language of the document.

### *Meat & Livestock Australia: Beef Sustainability Framework*

https://www.sustainableaustralianbeef.com.au/

The MLA have developed an Australian Beef Sustainability framework to provide the industry with a well-formed, highly adaptive system for demonstrating progress toward key social licence goals. The Australian Beef Sustainability Framework (ABSF) adopts the UN Sustainable Development Goals as an overarching system for describing the connections between beef production and the aspirations of the global community for sustainable development.

Work on the ABSF began in 2011. Development included a vast range of consultations with industry leaders, international experts, regional NRM bodies, and relevant agencies and industry advocates (MLA 2019a).




Although enthusiasm has been building slowly since launch in 2017, few commentators in the industry press recognised at the time what a watershed contribution the ABSF offers to the industry. The ABSF has been carefully and intelligently designed to allow beef enterprises to more easily “on-board” themselves to the process of sustainability reporting and accounting. Not only will this be increasingly expected of industry as consumers and land conservation activists push a social license agenda, it also lays the foundation for the stewardship payments that the industry has been interested in developing.

The ABSF provides a number of simple self-reporting processes to get started. Larger or more advanced operators can quickly expand their reporting to far more detail if they choose. Since the ABSF provides some common data collection standards and conceptual alignments that suit various grazing regimes, the scene is set for the production of a world-leading report on industry, developed and operated by industry.

One of the more remarkable achievements of the ABSF has been the assembly of a new database that combines cadastral boundaries with land ownership and beef enterprise identities. The new database records over 100,000 discrete operational units which are managed through the approx 50,000 agricultural businesses that are tracked by the ABS. Although it seems like a very simple dataset, the fact that it now exists is of great significance. Through a simple spatial interface, industry leaders are now able to correlate remote sensing data with land managers in near real-time. Approximations for land condition and trend can be interpreted and then connected to specific enterprises and their management decisions. This provides the foundation for accountability across the industry.

Access to the database is restricted for privacy and commercial reasons. My familiarity with it comes from arm’s length discussions in technical circles close to the project, so some details are going to be askew. However, I cannot overstate the value of putting a proper data layer into the ABSF so that specific land managers can be correlated to specific land outcomes. This is the foundation of a cooperative, public-interest approach to management of the rangelands as a common-pool resource.

Although some commentators dismiss the utility of the UN SDGs, the MLA have actually given Australian graziers an enormously valuable line of credibility and linkage to a global conversation about how to reduce the environmental impacts of grazing. In provisioning the ABSF on such robust technical

foundations the MLA have set the industry on the front foot, ready to claim early-mover advantage for its producers.

### *National Farmers Federation (NFF)*

https://nff.org.au/wp-content/uploads/2020/02/NFF_Roadmap_2030_FINAL.pdf

Like many of you, the main thing I know about recent NFF activities is that they are leading Australia's farmers to a $100Bn farm gate target by 2030 (NFF 2019c). This goal was reached through wide consultation leading up to their 2030 Roadmap (NFF 2019a). The Roadmap was developed first by global accounting consultants, KPMG, and then reviewed over a 6 month period involving contact with about 400 NFF members and stakeholders. The Roadmap proposes 5 Pillars around which progress is to be measured. Not surprisingly, the NFF are very aware of the need to address the topic of sustainability. It comes right after Pillar 1 (dedicated largely to transport logistics and securing export market access).

Pillar 2, Growing Sustainably, offers five Aspirations, centred on: ecosystem services and stewardship payments; carbon neutrality; water security; land security; and food waste. Within each Aspiration there are some actions and impacts, and a Metric is provided to help measure progress. This is a clear and easily-digested format that lends itself well to ongoing reporting.

Figure (below) is the Pillar 2 Report Card for 2019. Note the "above expectations" progress in 2.1, where the 2030 Metric is to achieve a "net benefit for ecosystem services equal to 5% of farm revenue." We don't really know what that means. However, the high score for 2019 apparently relates to (a) progress on a stocktake of commodity-based sustainability frameworks, and (b) the $30M pledged by the government toward an Agricultural Stewardship Pilot Program (DAWE 2020).

This lack of specificity dogs the whole Roadmap. There are no mentions of external standards or verification processes. No metrics that deliver against existing sustainability targets (eg regional NRM Plans). The Roadmap avoids making commitments that can be measured clearly across the industry, and compounds this by failing to undertake a data harmonisation effort that would power a set of objective metrics to communicate land condition and trend. The NFF fails to connect its Roadmap to international standards or frameworks for sustainability in precisely the opposite way that the MLA chose to hook the ABSF up to the UN Sustainable Development Goals.

Perhaps the NFF do not see such effort as appropriate to a Roadmap...after all, the ABSF is an actual thing: a credible framework that can be operationalised. A Roadmap is a more ethereal statement of general intent. If this is the case, it begs the question why the NFF did not even manage to get an "Australian Agricultural Sustainability Framework" listed as one of their future goals in the Roadmap. That would have at least provided some credibility to claims that a deep commitment to sustainability exists within the NFF agenda. But even this token demonstration is missing.

Somehow the NFF even missed a free kick by not mentioning one of Australia's most cherished brands: Landcare. First given life by a loose network of Victorian farmers and conservationists and coaxed along by Joan Kirner in 1986, the movement's institutional framework was forged in a visionary partnership between the NFF and the Australian Conservation Foundation in 1989. This extraordinary movement has kept the principles of local people working together on local issues, from paddock to

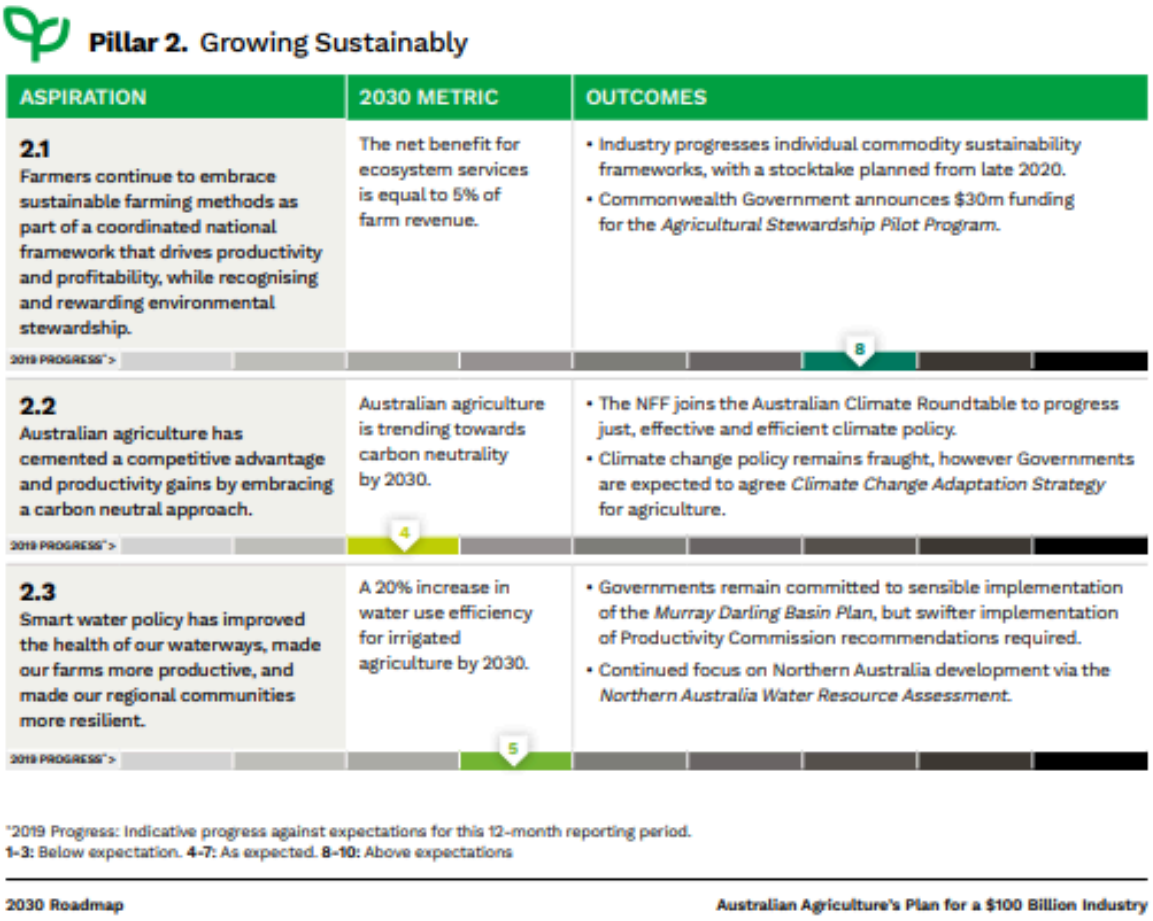
creek line, for over 30 years. If the NFF were looking for a ready-made vehicle for carting some social license, highlighting a continuing commitment to the principles of Landcare ought to have been a no-brainer. But they decided not to.

The one thing that was agreed was to run “$100Bn by 2030” as the one-line headline. Bold, dramatic, and one-dimensional.

Farming is about life, and yet life is completely excluded from the headline. For example a few more words might have hinted at goals like: improved land condition and productivity, increasing water efficiency, rising farm incomes (nett), intergenerational equity, regional food security, biodiversity, reduced carbon profiles, reduced petrochemical input, increased employment opportunities, improved food vitality and nutrient density, improved resilience to climate variability...in other words, all the values that matter. These values, presumably, are to be delivered as virtuous side-effects of hitting the sales target...assuming they don’t cost too much.

So, instead of anything more complicated or “value laden,” we get *$100Bn by 2030* as shorthand for “Success!”

That speaks volumes about the current state of mainstream agriculture in Australia today.



## Pillar 2. Growing Sustainably

| ASPIRATION | 2030 METRIC | OUTCOMES |
|---|---|---|
| **2.1** Farmers continue to embrace sustainable farming methods as part of a coordinated national framework that drives productivity and profitability, while recognising and rewarding environmental stewardship. | The net benefit for ecosystem services is equal to 5% of farm revenue. | • Industry progresses individual commodity sustainability frameworks, with a stocktake planned from late 2020.<br>• Commonwealth Government announces $30m funding for the *Agricultural Stewardship Pilot Program*. |
| 2019 PROGRESS* > 8 | | |
| **2.2** Australian agriculture has cemented a competitive advantage and productivity gains by embracing a carbon neutral approach. | Australian agriculture is trending towards carbon neutrality by 2030. | • The NFF joins the Australian Climate Roundtable to progress just, effective and efficient climate policy.<br>• Climate change policy remains fraught, however Governments are expected to agree *Climate Change Adaptation Strategy* for agriculture. |
| 2019 PROGRESS* > 4 | | |
| **2.3** Smart water policy has improved the health of our waterways, made our farms more productive, and made our regional communities more resilient. | A 20% increase in water use efficiency for irrigated agriculture by 2030. | • Governments remain committed to sensible implementation of the *Murray Darling Basin Plan*, but swifter implementation of Productivity Commission recommendations required.<br>• Continued focus on Northern Australia development via the *Northern Australia Water Resource Assessment*. |
| 2019 PROGRESS* > 5 | | |

*2019 Progress: Indicative progress against expectations for this 12-month reporting period.
**1-3:** Below expectation. **4-7:** As expected. **8-10:** Above expectations

2030 Roadmap Australian Agriculture's Plan for a $100 Billion Industry

| ASPIRATION | 2030 METRIC | OUTCOMES |
|---|---|---|
| **2.4** We have stemmed the loss of productive farm land, improved the health of our landscapes, and brokered lasting co-existence arrangements with other landholders. | Maintain Australia's total farmed area at 2018 levels | • The NFF will deliver the Commonwealth funded $4m *Sustainability Certification Project* to analyse, and further develop, existing industry sustainability models. |
| 2019 PROGRESS* > 6 | | |
| **2.5** Australia has halved food waste, and significantly reduced the number of Australians facing food insecurity - thanks in part to a proactive partnership with the agricultural value chain. | Halve on-farm food waste by 2030 | • Numerous initiatives established to capitalise on Australia's food waste opportunities, however most in early stages of development.<br>• A national food security strategy is required to reduce the number of Australian's seeking food relief, which has increased by 22%. |
| 2019 PROGRESS* > 3 | | |

This is an example of polished, professional communications by an industry advocacy body. It is a good bit of gear to hand out to farmers at conferences, and to slide across the table to agency bureaucrats.

The headings are clear and positive. The 2019 scores are good: looks like a bit more to be done, but basically the “sustainability box” has been ticked and we can move along to more important matters.

The thing is, NFF have virtue-signalled a good cross-section of important land management topics. But have carefully avoided making anything too explicit, binding, or onerous. In other words, the Roadmap is a firm endorsement of business-as-usual, despite some vigorous nodding in the direction of sustainability.

The Roadmap and the Report cards arise from a significant range of normative assumptions. I’m not sure if or how these assumptions are documented in other NFF papers. It is quite likely that I’m missing obvious explanations, but I probably would not be alone in that respect. The question is, how well does the 2030 Roadmap serve the farming sector from a natural capital perspective? I believe there is room for improvement.

Here are some examples of unchallenged (or unexplained) assumptions drawn variously from Pillar 2 and elsewhere in the 2030 Roadmap document:

Table 5 *Assessment of assumptions underlying NFF 2030 Roadmap*

| **Metric 2.1** | **“The net benefit for ecosystem services is equal to 5% of farm revenue.”** |
|---|---|
| This is the key metric for ecosystem services, but what does it mean? Net benefit implies that, in the course of production, there is a *removal* and an *addition* of benefit (of ecosystem services). Farming cannot result in an ongoing net loss of ecosystem services, so just to maintain status quo the net of benefit change needs to be positive. Is it not already positive?<br><br>How would we know? How is the *removal* and *addition* measured?<br><br>We are talking about the net change to ecosystem services. The amount of net change (the target) is to be measured as 5% of farm revenue, ie, in dollars. What is the accounting process to convert between units of ecosystem services (natural capital) and units of farm revenue ($AUD)? If this process is already determined, shouldn’t the Report Card be reporting that metric?<br><br>Assuming the 5% goal is intended to be reached by 2030, then it could mean NFF are expecting 5% of $100Bn to be the value of net gain in ecosystem services. This would mean “$5Bn worth of ecosystem service net benefit” is being provided to the Australian public via the Aussie farmer. So: how much is the farmer being *paid* to deliver these services? Dollar for dollar? Does that make any sense in terms of the total value of ecosystem services required to support Australian ag?<br><br>And there is the hard cash needed to administer the scheme. Who is paying to account for all the removals and additions of natural capital during the course of a year? The farmer doesn’t need more paperwork...and that admin effort would subtract from the net gain. Who is paying for the rural extension services needed to drive practice change? Who pays for the policy development that helps nudge commercial ag away from being a net extractor to a net contributor? Are these expenses figured into the net gain equation?<br><br>Perhaps I have read the metric wrong. Is there an alternative meaning? How about: “By 2030, farmers will receive a net financial benefit equal to 5% of farm revenue as payment for providing ecosystem services.”<br><br>That sounds more attractive to the farmer. But the metric is entirely focussed on the net payment that farmers receive, with no commitment to a particular ecosystem services outcome.<br><br>We know that farming *can be* regenerative, ecological, and based on sound conservation principles...but it is often not practiced this way. The point of being paid for ecosystem services is that the benefit to public good | |

should be quantifiable. So how does NFF justify the *quid pro quo* for the $5Bn in annual (?) public funding?

For this to be the headline sustainability metric, I seem to be easily confused as to its meaning.

| **Metric 2.2** | **"Australian Agriculture is trending towards carbon neutrality by 2030."** |
|---|---|

There is an understanding that, to be meaningful, targets should be S.M.A.R.T. This metric does not fare well in that respect.

The aim of Aspiration 2.2 appears to mainly be focussed on the Australian Government making a firm policy decision so that farmers have some "certainty" with respect to emissions, carbon farming, and anything else that might end up weighing on the operational balance sheet.

The industry is committed to "...a trajectory approach for each commodity to work towards carbon neutrality whilst maintaining productivity and profitability." So, yes, we'd like to tend to trend toward neutrality, but only insofar as it has no material impact on operations.

The costs of more specific measures are to be borne by the public (assessment tools, farm-scale carbon plans, cow-fart research)

There's a fair bit of tending to trend. It might be a more credible claim if NFF said right up front: "We really don't have good data on this because (a) no one is funding it (b) farmers are not compelled to share operational data that would make this exercise meaningful, and (c) we probably don't want to know the answer anyway."

Rolling back to the very top, Roadmap Aspiration 1 asserts that the goal is for "Agriculture (to be) ranked Australia's most trusted industry."

It would seem obvious that the journey begins with an open honesty, an invitation to receive criticism, and humble participation in collaborative problem solving undertaken with the benefit of actual data.

| **Metric 2.3** | **"A 20% increase in water use efficiency for irrigated agriculture by 2030."** |
|---|---|

Water is life, Australia is the world's driest inhabited continent, and CSIRO has repeatedly warned that on current projects Australia will need access to double its current water consumption by 2050. In spite of billions of public funding over two decades the MDB is a dog's breakfast and the most inspiring recommendation from the agri political brainstrust is more dams...preferably a Bradfield scheme, but otherwise how about enormous de-sal plants.

Is a 20% reduction in irrigated ag the best sustainability metric that NFF could agree on?

What about total volume of water to be used by ag? What about a running calculation of water required per calorie of production achieved, with a target to year on year reduce by 3%? How about a cap on the total amount of water that ag will ever make a claim to (and thus commit to living within limits of the natural system)? How about a commitment to total water accounting (like carbon accounting, but simply measuring the consumptive use profile of every farming operation? And again, who pays for this level of measurement? If robust accounting and reporting is not the goal, how does the NFF defend this as a credible commitment to sustainability?

The problem with this Roadmap metric is not the 20% efficiency target...that's great...but it says so very little about the larger context in which this precious resource arises. Why so little about water? Likely, the assumption is that water sustainability issues are handled in the marketplace. Water is a costed input to production already, so nothing more needs to be done here...clearly the market is doing a great job of allocating the scarce resource to the highest use. Bollocks, and the NFF know this. But water is even more triggering for farmers than climate change. So the Roadmap swerves around any serious discussion of water sustainability

targets and we, collectively, are no further toward real water security than when we started.

| Metric 2.4 | "Maintain Australia's total farmed area at 2018 levels." |
|---|---|

I watch in horror as faceless suburbs pave over beautiful agricultural soils around the Atherton Tablelands, so this one is especially close to my heart. I too do not want to see the life-giving farmlands lost to so-called higher-value uses like housing, mining, or industrial development.

But under this metric we find an odd outlier. Amongst the usual threats to farmland there is a new entry: biodiversity. Yes, strangely, the NFF's commitment to a Biodiversity Strategy appears here, instead of under 2.1, Ecosystem services. Most people would assume that a thriving suite of ecosystem services *necessarily* involves a deliberate stewardship of biodiversity. So its placement here appears to reveal a sense that biodiversity threatens to remove access to good farmland. How? Possibly through nit-picky biodiversity regulations?

The other concerns in 2.4 appear related to loss of water and land quality to mining/fracking, and a glancing reference to uncertainties arising from Native Title. These are all perceived threats to a farmer's "right" to operate on nice country. Natural capital is all about helping producers work on country that is continuously getting sweeter, so there ought to be an alignment of goals.

What appears to be missing here is any incentive for the *farmer* to take care of what they already have. What about a commitment to soil carbon targets? What about a program to revive and regenerate farmland that has gone out of production due to poor quality: by bringing this area back into production the overall level of natural capital is improved and farmers learn the skills of recovery instead of only looking for greenfields development. Is there a metric that shows how the industry is going back and recovering country instead of aiming for new development to be opened up? North Australia comes to mind.

Again, the implicit assumption appears to be that the private market looks after land prices, which determine how land gets utilised. The only complaint arises when farmers get bid out of the action by either higher-profit activities or virtue-signalling biodiversity campaigns that strike a bit of success looking after a frog here or there. In this case the NFF would prefer there to be some "sustainability" safeguards put in place.

In any truly (biologically) sustainable agriculture, biodiversity is an asset. It belongs in the aspirational goals for improving ecosystem services. It deserves to be integrated with production systems aimed at building enduring organic abundance. It is difficult to understand how a sustainability target can be formulated otherwise.

| Metric 2.5 | "Halve food waste by 2030." |
|---|---|

If there's one thing I learned around the family dinner table it was "Waste not, want not." I believe most farmers would have grown up on wisdom similar to this. So it must be nearly heartbreaking to work in an industry where, for lots of complicated reasons, a high level of waste is the norm. Good on the NFF for committing to the industry to waste-reduction.

The initiatives outlined, however, are passed to others for implementation. There is no commitment by farmers to measuring or reporting wastage. The public should fund R&D into how farmers can convert their own waste into new (private) income streams, and the big ticket items are going to involve foodchain logistics (ie, outside the farm gate).

From a natural capital perspective, this list of half-fearted metrics raises some pressing questions. Surely it is not the case that agriculture is *in favour* of:

- Running at a net loss to environmental services
- Using water without regard to the ecosystem on which it depends
- Failing to control greenhouse gases and failing to act as a carbon sink
- Abandoning mismanaged ag land and putting virgin country under new development

No farmer would sign up to that agenda for the simple reason that it is sociopathic, immoral, and not a great business plan. However, the NFF appears to be doubling down on protecting the industry's "right" to call its own shots...but by doing so it puts farmers squarely on the wrong side of an increasingly activist public.

Farmers don't need to be beaten up by ill-informed do-gooders intent on pointing out the obvious. Yet, under a business-as-usual scenario as envisioned by the Roadmap, this is the route farmers will follow.

In effect, the very basis of the 2030 Roadmap's Sustainability commitment is an acknowledgement that farming is not currently sustainable,  by most reasonable measures. It must shift. Fiona Simson does her best to signpost this in the 2019 Report Card: "In an increasingly complex environment, the single certainty faced by Australian Agriculture is that 'business as usual' is no longer an option, and nor should it be."

The problem is that it will cost a lot of money to deliver on real sustainability goals, and there is no credible pathway to attract the scale of funds required under the BaU arrangements which lock in an unquestioning cultural acceptance of returns on financial capital, debt for private land, speculation on private profit, and unlimited dependency on export earnings. There is no feasible path from here to there, and that's the problem that Simson faces. The NFF are facing that fact on behalf of their industry.

Why can't the NFF spell out the situation more clearly and take a decisively *activist* approach? I can only imagine that the NFF ask themselves the same question. But I need to be gentle here. I think we are all guilty of shuffling the really big problems off to the too-hard basket. The NFF can only do so much. They are "in the business" of representing the interests of their farmer members. Scare the horses and they stop paying membership fees. No income, no NFF. Brutal. I don't envy their situation.

There has to be a more humane and compassionate way forward. That's the basis of recommending the commons, fiscal debt, and a reduction in export, all of which is explored in a rangelands context in chapters following.

## Summary assessment

Here is a summary and scoring for each of the natural capital initiatives discussed. The assessment is performed against the metrics proposed in Chapter 2 ((crossref))

Table 7 *Assessment of natural capital initiatives*

| Initiative | MicroEconomic | LocalProsperity | PublicInvest |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **Accounting for Nature** | 2 - Possible contribution via national accounts that make policy impacts easier to defend and adjust based on credible data | 3 - Provides land managers with relevant evidence, supporting better decisions. | 4 - Very good mechanism for assessing condition of natural capital assets, supporting trust in a market for natcap credits |
| **Climateworks: Natural Capital Roadmap** | 3 - Solid contribution via improving the shared language that policymakers could use wrt natcap | 2 - Gives a straightforward explanation of natural capital in context of landuse, land managers can engage more efficiently | 4 - Very good approach to indicators which supports the establishment and maintenance of trust |
| **Meat & Livestock Australia: Beef Sustainability Framework** | 4 - If taken up with enthusiasm, the SDG indicators approach provides both defensible policy reporting and gateways to larger social agenda | 3 - Very good connection between paddock-scale initiatives and the aggregation of those metrics toward meeting standards (access to market) | 4 - Very high connection to evidence frameworks, supporting public trust |
| **National Farmers Federation: 2030 Roadmap** | 1 - Makes virtually no effort to isolate factors that will lead to improved livelihoods and reduced pressure on country | 2 - Questionable connection between Sustainability metrics and improved decision-making | 1 - Relies primarily on strength of lobby to force public trust; virtually no commitment to data transparency or collaborative development of social license |
| **National Farmers Federation: Natural Capital Position Paper** | 1 - Makes a claim for public funding; offers minimal mechanisms for policy makers to defend investment | 2 - Very modest ambitions for farmers; unlikely to deliver significant benefits | 1 - Public trust is expected, not earned. |

# Worthy mentions

## *What about carbon?*

The carbon economy could be cited as a type of natural capital initiative. I believe this is misleading because none of the carbon methods contain specific mechanisms through which dependency on natural capital accounting could be enforced. In other words, carbon projects are monetised to deliver a single objective, alienated from the wider context in which the project is undertaken.

There is no enforceable constraint on a carbon project in terms of what most managers think of as the basics of good stewardship. Under the narrow view of the carbon farming methods, it is quite acceptable to pay for carbon sequestration services while that same project also “emits” negative impacts such as more weeds and ferals, increased fire risk, and an impoverished community. As long as the carbon is sequestered, the money flows. This arrangement is as alienating and potentially harmful as any other capital-driven land use proposition.

To the credit of NRM Regions Australia and some daring officers at the Clean Energy Regulator, there is at least a glancing reference to the Regional NRM Plans contained in the land methods application form (e.g. CER 2015, p.6). Proponents are asked if their project aligns with the relevant Regional NRM Plan.

This ought to convey some sense of obligation, however vague, for the project to take account of the wider landscape context. However, the proponent merely needs to tick yes/no...they do not need to detail consideration of how their project might impact surrounding properties, how it might interact with adjacent projects, or how it might contribute to cumulative effects should additional carbon projects be taken up in the region. Proponents are not ever required to explain how their carbon farming project fits into a larger ethos of good land stewardship on their own properties (Hannam 2019).

None of these considerations are required of proponents.

Further, proposals are not vetted, examined, or assessed by a qualified (neutral) third party with appropriate local intelligence. As a result, the approval and implementation of carbon farming proceeds in its own silo. There is little recourse for the neighbours should a project produce noxious “externalities.” I am not aware of administrative action ever being taken against any carbon project whose outcomes blatantly contradict community aspirations contained in the regional NRM Plans.

Credible recommendations are starting to emerge from research work undertaken as a sort of rear-guard action to cover the shortcomings of the initial program design. The RAPTA framework proposes a resilience approach to “holistic assessment of social, biophysical and economic impacts of carbon farming” (Cowie *et al.* 2019). A recent contribution, *Carbon farming for resilient rangelands: people, paddocks, and policy*, carefully sets out a range of positive and negative attributes of carbon farming as a landuse option (Baumber *et al.* 2020).

Despite these welcome insights, carbon farming is currently implemented as a market-based instrument. Unlike natural capital, carbon farming arises as one--amongst many--disconnected activities in the emerging “environmental economy”. Such an economy is characterised by straightforward commercial arrangements to deliver a specific quantum of “environmental output” for a specific economic fee. Although entirely rational under BaU, it is a grossly simplistic formulation. For land-based carbon projects to fall into such a narrow spectrum reveals a most unfortunate missed opportunity to connect them to a viable land management activity within the larger context of regionally-appropriate natural capital outcomes (Dale *et al.* 2013a).

Regardless of the semantics, there is sustained and speculative interest in various carbon-centric landuse schemes.  However, given the dramatic and perverse outcomes to the land (and communities) that can arise from “successful” carbon projects, this sector is not yet well-aligned to the fundamental goals of natural capital.

### *The Land Restoration Fund*

The Queensland government is seeking to address this problem with carbon with a rather inspiring program called the Land Restoration Fund (or LRF). The initiative provides the framework for investors to make supplementary payments for “co-benefits” that are delivered in the course of implementing a normal carbon farming project.

For example, a project operator may decide to undertake biodiversity surveys and develop a management plan that suggests the best way to burn country (for carbon) while (additionally) optimising that burn for biodiversity outcomes. This additional effort is rewarded by earning co-benefit credits which are essentially a premium on the $/ACCU paid for the certifiable carbon credits.

The LRF established three broad categories of “co-benefit”:

1. **Environmental** – improving biodiversity, habitat for threatened species, soils, wetlands, and water systems.
2. **Social and Economic** – improving the resilience and strength of regional communities by providing direct and indirect jobs, and more investment into Queensland regions.
3. **First Nations** – providing on-country business opportunities as well as new service delivery businesses and supporting cultural connections. (DES, QLD 2018)

Potential investors are attracted to these co-benefits for various reasons (eg, corporate social responsibility, social license, and agencies looking for improved delivery models). This serves to broaden the market and bring in new investment. The LRF has a target of $500M flowing through its projects within the course of a few years.

In order to manage the production and sales of the co-benefit “credits” produced, the LRF has commissioned efforts to develop certification methods for each area. The idea is to provide an appropriate certification mechanism for each type of co-benefit with the objective of supporting a trusted and transparent marketplace for the co-benefit credits.

Although the concept is admirable, the implementation struggles with a familiar range of complications. There is the usual internal friction that wears on every initiative that moves through a bureaucratic process, and there is the unrelenting restraint of the Treasury toward every new spending proposal.

A more subtle problem is that the whole process is cast in the language of a marketplace. This has the effect of pitting seller and buyer in a hostile, zero-sum relationship.  Since the LRF’s market transactions are ultimately based on financial debt, contract, and settlement all the usual patterns of overselling and under-delivering are brought to the table. The establishment of trust and reciprocity is very difficult in a pure marketplace amongst strangers. This is particularly relevant to the LRF because the “co-benefits” being paid for are second-order aspects of the underlying carbon project. In many cases, there is no crisp boundary around the additional co-benefits of a project because outcomes such as biodiversity, capacity building, and resilience are related aspects of any land-based project.

So there is a challenging complexity: how can a project operator gather up sufficient, credible evidence of co-benefits and deliver them to the marketplace? Clearly such an arrangement cannot work in the sense of an ideal/anonymous market. The assessment and settlement of “outcomes delivered as

agreed" can only take place where there is a significant level of trust between the buyer and seller. If these two parties were neighbours in the same regional town, such a level of trust would be entirely normal. But in the LRF context we are talking about large amounts of "impact investment" money flowing from remote corporates, philanthropists, and state politicians (Olmsted 2017). The connections between these actors and on-ground practitioners is likely to be attenuated at best. There are also vast differences in the type of risk each party carries. Where practitioners are dependent on co-benefit payments to make ends meet, there is an unfortunate incentive for coercion and creative bookkeeping. Where investors are highly exposed to reputational risk, the tendency will be to favour projects with low risk profiles. But this lowering of risk can be manufactured through skilful greenwashing, sometimes more easily than through proper management of meaningful projects.

The LRF undertakes its program in the guise of a transparent marketplace where there is a "certifiable" correlation between investment and outcome. But could well be an unreasonable expectation. It is only a matter of time before some investor spots a negative interpretation of the co-benefits they thought had been certified, and the scheme will be faced with a severe crisis of confidence. A collapse of trust would be difficult to recover from.

Through the LRF, any co-benefits built into these projects can help Queensland advance toward a wide range of ecological, cultural, and economic goals.

However, there are significant risks and uncertainties associated with the assessment and validation of these co-benefits for each individual project. Further, it is likely that there will be unforeseen impacts from the cumulative and synergistic effects of land management changes at catchment and community scale. These risks and impacts pose a serious threat to the LRFs model. Any erosion of trust or credibility in co-benefits could trigger a precipitous loss of market value.

Finally, it should be noted that the LRF relies on the stability (and continuation) of the Clean Energy Regulator's role as custodian of the carbon methods that define how ACCUs are to be certified. This is a national agency, exposed to the shifting currents of political ideology.

Assuming the LRF are able to continue their good work without calamity on one hazardous shore or another, they may get a chance to evolve and adapt their model, addressing some of the underlying points of vulnerability as they go. This would be a great outcome for the natural capital agenda as it would drag the money-for-carbon crowd toward a more holistic interpretation of "carbon farming." And it would mean a bunch of great projects earning money for Queenslanders who are taking care of country.

### *Regenerative agriculture*

I see regen ag as another term for the diffuse cloud of practices that call themselves permaculture, syntropic agriculture, natural sequence, natural intelligence, biological, biodynamic, regenerative grazing, agroecology, no-kill, etc. (notable exception: "conservation agriculture" generally refers to a high-input, high emissions style of conventional ag introduced along with direct-drilling systems of the 90's and early 2000's, still promoted by agrochemical industry today).

Regen ag has pulled in a fair share of commentary recently because, like natural capital, it glues together two hot topics: how to systematically rebuild degraded farmland, and do that within the

context of (commercial) agriculture. Restore Australia (2020), a proposed injection of over $250M in private philanthropy, is entirely centred on the conversion of conventional Australian land management to various forms of regenerative agriculture.

There is certainly a lot of promise here for techniques to rapidly restore and enliven the land at scale, and with an eye for commercial norms. The work of syntropic pioneer Ernst Gotsch in Brazil is legitimately mind-blowing (Agenda Gotsch 2015), while closer to home there is the work of visionaries like Peter Andrews, Tony Coote, Bill Mollison, David Holmgren, and Terry McCosker. Massy (2017) provides an excellent account of the land managers leading the way in Australia.

Some conventional farmers burr up at the mention of “regen ag”. In conversation with , Lynne Strong (2020), one of the leading social influencers in ag circles, I heard a familiar theme: producers don’t like to be told what to do, they don’t like following somebody else’s religion, and many of these regen ag advocates try to make their own program look good by running other people down. None of that washes very well.

Regen ag is not a religion, thankfully, but it does involve shifting to a different sort of mind and heart, and that’s probably what makes people uncomfortable until they are ready for the conversion. There is no secret sauce or fool-proof recipe: as with all tools, the outcome is dependent on many factors. In themselves, regen techniques tell us very little. One farmer is able to use a shiny John Deere with the most gentle and benign effect: another fella might be able to split a whole community apart through a poor conceptualisation of agroecology.

And finally, regen ag sits in an uncomfortable space with respect to the ecosystem of professional agronomists, farm consultants, wealth advisors, etc...most of whom would be unfamiliar with the ethos (“ideology”?) that regen ag seeks to instantiate. The success factors for regen ag tend to be off balance sheet, and that is a danger flag for conventional managers.

An example of this misalignment is evident in the case of a 10-yr study (Ogilvy *et al.* 2018) that purported to show regen ag farmers doing as well (or better than) their conventional neighbours. One of the industry’s most respected advisors ripped shreds off the study (Francis 2020), leaving the impression that regen ag is at best a very poor business strategy. One of the central issues raised by Francis was the importance of using terms such as “profitability” with technical precision lest the unwary reader get the wrong impression of the claims being made. This objection is surely defensible, but it also highlights a significant difference in value frameworks. In conventional ag, there is only one set of values that relate to profitability, and they can all be precisely entered on the balance sheet. I believe that sort of precision tends to “give the cost of everything, and the value of nothing.” Sadly, Francis does not advise his readers that there are hazards in applying his precision to the real world of lived experience where the highest values are realised in harmony with the land and oneself. This is more the domain of stewardship, something that Francis probably considers off-balance sheet.



*Deeply eroded country handed back to Indigenous management. Lakeland, QLD*

# 4: Perspectives on stewardship schemes

We have covered a fair bit of territory on the metaphor of natural capital. In this chapter I will focus on stewardship. How is the term being used, and how can the role of stewardship be appropriately monetised.

There is a spectrum of stewardship that begins with a cash-only, fee-for-service proposition and ends in the mythopoeic wisdom of the indigenous soul. For me, the essence of stewardship is expressed as a movement. It is not a specific state, but a continuous practice. The steward is moving away from extractive, alienated relationships with land, toward embedded, mutual relationships with country. There are as many ways to express this orientation as there are hearts and minds dedicated to country. Stewardship is not a set of regulations and formalisations: it is a commitment.

In the practice of everyday affairs, this sort of high-minded language has to be translated to more tangible expressions. We need some intuitive means for discriminating amongst various deployments of the term “stewardship”.

There are many people and institutions whose core missions align beautifully with the principles of stewardship. And there are those who have little interest in that journey: these agencies and organisations wish to signal a virtuous concept while remaining comfortably enmeshed within the BaU paradigm. Picking differences along the spectrum and “scoring” one’s colleagues is a thankless task at

the best of times. But without some sort of critical reflection it is all too easy to slide out of meaningful commitment and arrive at self-congratulatory tokenism.

I will dive in here: first reviewing some of the more well-known agri-environmental schemes and then touching on a series of topics that are associated with the design and implementation of such schemes to arrive at a wider perspective on the notion of land stewardship.

# Relevant stewardship schemes

## *Agricultural Stewardship Program*

**Australian Government, 2019 (?)**
https://www.agriculture.gov.au/ag-farm-food/natural-resources/landcare/sustaining-future-australian-farming

This is the flagship Australian effort aimed at stewardship payments. It is a $34M program delivered over 4 years through the National Landcare Program. It is a new program so investments are primarily being made in framework and process initiatives that will support the ongoing delivery of the program into the future. There are three key deliverables:

- **Policy**: Agriculture Biodiversity Policy will look at national vision and how to position the public interest in relation to farm practices.
- **Certification**: Australian Farm Biodiversity Certification Scheme establishes a “brand” that enables farmers to show their compliance with the principles and practice of biodiversity stewardship.
- **Pilot**: Agriculture Biodiversity Stewardship Pilot Program will make payments to small and medium enterprises and will test strategies for implementation of the Policy and the Certification scheme

**Assessment**

In its basic outline, the program is innocuous enough. There are few details available since the contracts for the program are negotiated privately between the Commonwealth and its delivery partners. Judging by the material available online, the key issues might be:

***Isolation of biodiversity from production.*** There is only a hint that the program intends to aim for an integration between biodiversity and production outcomes. In other words, provision of biodiversity for public good is seen as an incidental activity which a farmer may choose to undertake independent of their private activity as a primary producer. That is clearly a sensible approach from an agency or market perspective, but it enshrines the misconception that farming activity is anything other than entirely enmeshed in and dependent on a productive relationship with biodiversity.

Since biodiversity is positioned as an incidental add-on this program is likely to develop a sort of split personality. On one side the program will be assigning an arbitrary collection of ecosystem functions to the domain of private/for-profit activity (eg, cropping and grazing), and on the other side, a different set of ecosystem functions will remain as public goods provided on a fee-for-service basis (eg riparian corridor health and native veg).

Would it not be more productive to start from the perspective that an improvement to biodiversity must (by design) lead to an improvement in primary production? For example, increasing the abundance of predatory wasps requires development of native grass and shrub species (Stephens *et al.* 2006). Does the Agricultural Stewardship Program start by asking the farmer to assess how valuable these wasps would be to their production? Or does it merely assess the quantity of native grasses and shrubs as a proxy indicator of healthy biodiversity?

This is a testing perspective because it forces one to consider the alternative: do we accept the type of primary production which is not enhanced by improved biodiversity? That is, if our BaU farming practices are inimical to biodiversity, isn't that already a matter of immediate concern? There should be a whole line of discussion here...how to justify or apologise for the necessity of farming practices which *by their nature* are bio-phobic.

We'll leave that question hanging and assume that, for the most part, modern farming is not intentionally antagonistic toward biodiversity. In fact, a good many producers are able to give examples of how biodiversity improves the quality and reliability of their harvest. And we can hope that many more farmers are moving to this view.

If, ideally, more and more producers are already shifting toward a more integrated relationship with biodiversity, where does this leave the Agricultural Stewardship program design? If farmers are already committed to improving biodiversity because it is good for their private gain, what is the parsimonious rubric that the Department will use to isolate out the fraction of biodiversity additionality that is owned by the public's investment?

It's a difficult question today because we (collectively have not tackled the hard problem which is deciding how we view the provision of public goods within a private property regime. Accordingly, the Department is likely to ignore the too-hard basket, continue with this program as-is, enjoy some initial success, and then fall victim to political assassination on ideological grounds (sample headline: *"Why is the public paying farmers for what they ought to be doing anyway for their own proifitability??"*). This will result in the program being wound back after a few glory years, once again leaving producers stranded with the bleak option of grinding through their natural capital because the market doesn't provide for long-term reinvestment.

Putting boxes around different sorts of ecological function obscures the potential for farmers to increase their profitability (a private good) through management practice that delivers diffuse public goods.

***Funding: scale and source***. At this point there is not much indication of the anticipated scale of public money being considered, nor is there a hint that the scale is to be established by considering the task itself (ie, recovering and regenerating land condition). Likewise, there is no clear indication of how public funds will be ring-fenced to secure decadal-scale land management decisions. In the absence of discussion on these points, it seems practical to conclude that (a) funding levels will be meagre and highly contested; and (b) the program is not likely to achieve the high levels of durability that natural capital strategies require.

### *Environmental Stewardship Program*

Australian Government, 2007-2012
https://www.nrm.gov.au/national/continuing-investment/environmental-stewardship

This program was a dip of the toes in the water by the Commonwealth via the Environmental Protection and Biodiversity Conservation Act (EPBC). Connection with EPBC was essential because it gave the Australian Government a justification for direct investment on matters that would normally be reserved for the States.

It was a "market-based, competitive funding" program that targeted 5 different ecological assemblies listed for protection under the EPBC in New South Wales, Queensland, and South Australia. The market instrument used was a competitive reverse auction mechanism whereby land managers compete for government funding to enable them to conduct conservation actions on their land at lowest cost to the government.

According to the Commonwealth: "Participating land managers are contracted for up to 15 years to conduct management activities to protect and enhance the condition of the threatened ecological community(s) on their land. Activities may include grazing management, weed and pest animal control, and maintenance of buffer zones."

In total, approximately $152M in public money flowed through the program, with significant in-kind and cash contributions from land managers of the 480 project locations. For scale, let's note that this investment represents a very rough average of $21,000 cash per year per land manager over the ~15 year period. I did not find data on the land area covered, so am not sure what the per-hectare investment intensity was.

A review of the program was undertaken with a socio-economic lens by CSIRO (2013) which noted, perhaps optimistically, that their "...report provides details of the methodology used to conduct the survey such that it may be repeated in the future to track change over time." No such survey appears to have been undertaken to date, so we will likely remain ignorant of the longer-term learnings that could be harvested from this program.

A more ground-level assessment of the program was presented by Emma Burns et al (2016) who noted that the "Environmental Stewardship Program experience showed that, although governments demonstrate that they are sometimes willing to try new ways to protect biodiversity, their administrative arrangements are often so inflexible that they stifle the original innovative idea and approach."(2016, p.48)

**Assessment**

***Narrow focus.*** The program (by design) enforces a delineation between EPBC-listed ecological communities and the unlisted environment (ie, everything else). This again sets up an unnatural partition between production and conservation goals, working against the tendency for land managers to take a holistic view of their environments. Despite this shortcoming in the program's architecture, some proponents take a more generous view of the potential for integration (Sato *et al.* 2016). It would

be very heartening to see people working to circumvent the worst of the bureaucratic compartmentalisation, but the bottom line is that there is very little research or experience in this area.

***Zero-sum market strategy*.** The program was implemented with a standard market mechanism, reverse auctions. The intent was to deliver the best allocation of limited economic resources to "bidders" who were best able to pitch a cost-efficient works program. This is in accord with standard commercial logic. But it violates several important principles which have been discussed prior, eg: the land is not alienable to economic value; there is no imperative for a competitive outcome; and the nature of markets is to put buyer and seller into adversarial tension instead of collaborative alignment.

***Lack of replication.*** Given the long time frames and substantial funding involved, it would seem that this program ought to have formed a very important reference point for the current Agricultural Stewardship Program.

### *Countryside Stewardship*

UK, Natural England
https://www.gov.uk/countryside-stewardship-grants

This is perhaps the international "gold-standard" scheme most familiar to Australians. It has been operating since 1992 in various forms and has matured through its origins with the European Union Common Agricultural Policy (CAP) to its new form in a post-Brexit UK. The program is an example of an "agri-environmental scheme", or AES. In summary:

> *AES operate through voluntary contractual agreements and provide farmers with payments in return for the delivery of environmental public goods and services and/or the adoption of modern environmentally-friendly farming practices. Their implementation is based on the subsidiarity principle, meaning that AES are specially designed to negotiate the particular production-conservation circumstances faced by individual Member States, which they achieve by addressing three intertwined matters, namely: greening farming practices; reducing food production impacts on biodiversity and improving overall countryside management.(Hejnowicz et al. 2016)*

A thorough review of the Countryside Stewardship programme is beyond the scope of this paper. However, those interested in a positive view of the programme should have a read of Dieter Helm's *Green and Prosperous Land* (2019) as he gives a clear and convincing view of the programme's intentions.

**Assessment**

***Reductionist foundation*.** Despite the inspiring vision of the programme, it falls short of making the critical leap to a truly holistic view of the "agri-environmental" systems that it aims to support. The vision presented in Helms' account is an all-encompassing story of revitalised farmland, efficient and resilient ecosystem services, and thriving conservation reserves that provide a myriad of benefits both tangible and spiritual. Since this vision is to be achieved through standard economics, the secret is to undertake a correspondingly all-encompassing assessment of costs and benefits of the agri-environmental assembly.

This assessment is given a dynamic dimension through a plethora of models that allow planners to reliably weigh the economic performance of various initiatives and make wise tradeoffs say, between reclaiming a section of the Fens (Randall 2013; van der Hoek *et al.* 2019) or paying for a few more beavers on the Otter (Sutton and Costanza 2015; Harvey 2020).

For procurement, Helms (and Natural England) prescribe a nimble mix of public/private arrangements that seek always to deliver the best economic efficiency. This efficiency cais only legible when expressed through tight specifications, thorough contracts, and excellent processes of assessment (monitoring and evaluation).

All this planning, measuring, and contracting makes for a picture that is quite seductive to our mental selves. Countryside England manifesting a sort of clockwork universe which tick-tocks into the future, delivering life-affirming outcomes, health, abundance, and beauty. There are some very inspiring and hopeful passages in the explanatory material (DEFRA 2020).

I would like to believe in this vision, but cannot fully trust the process yet as it feels so dependent on the modes of thought that brought us here in the first place. DEFRA makes “rational assessments and tradeoffs” that are only possible through a staggering level of effort to correlate the real world with the abstracted world of models and data.

My intuition is that Natural England may well end up being a lived example of Lewis Carroll’s parable of Mein Herr who, in an effort to faithfully model (and optimise) an entire country, created a map that was so detailed that it required a 1:1 scale. History shows that this magnificent map was never fully unfolded. It turns out the farmers objected to the map on the sensible grounds that, when unfolded, it would block out the sun. After reflection, they decided to tear the map up and, as Mein Herr concluded: “...we use the country itself, as its own map, and I assure you it does nearly as well!” (Carroll 1893)

### *State-level stewardship and offset schemes*

There are a range of schemes at state level that create a payment system for land to be managed for biodiversity outcomes as part of an offset arrangement. Land with existing biodiversity values may be approved for development, with the subsequent loss of that biodiversity, because the developer is required to fund or arrange for a suitable offset.

These schemes are certainly better than nothing and can result in positive natural capital outcomes. However, they also suffer from a number of common failures, as has been well documented in the literature

**(NSW)** Biodiversity Offsets Scheme: https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/biodiversity-offsets-scheme

**(QLD)** Environmental offsets: https://www.qld.gov.au/environment/pollution/management/offsets

**(VIC)** Offsets for the removal of native vegetation: https://www.environment.vic.gov.au/native-vegetation/native-vegetation/offsets-for-the-removal-of-native-vegetation

**(TAS)** still emerging...see: https://www.yumpu.com/en/document/view/48907445/biodiversity-offsets-in-tasmania-huon-valley-council

**(SA)** One year trial program for pastoralists to isolate sections of country from grazing: https://www.wa.gov.au/service/community-services/grants-and-subsidies/apply-community-stewardship-grant

Offsets program: https://www.environment.sa.gov.au/topics/native-vegetation/offsetting

**(WA)** Pay for regn agriculture planning and local environmental projects: https://www.wa.gov.au/service/community-services/grants-and-subsidies/apply-community-stewardship-grant

Offsets program: https://www.der.wa.gov.au/your-environment/offsets

## Property rights in a stewardship perspective

Central to the political and bureaucratic anxiety associated with stewardship payments is the problem of public money flowing in and around private benefits (Haddad 2003; Wilson and Wilson 2007; Pannell 2016). Our cumbersome concepts of land “ownership” means that the problem of public-private benefit will continue to scuttle virtually every well-intentioned initiative that seeks to support, reimburse, subsidise, fund, or pay for public good outcomes delivered through private land management.

So let’s dive straight into the hornet’s nest and clarify who actually owns the land on which primary production takes place? In other words, who owns the rangelands?

Acknowledging that there is an unresolved tension that arises from the claims of First Nations people, and acknowledging that our culture’s normative expectations about being able to “own” a parcel of the Earth is already a bit peculiar, it is worth probing this issue of land ownership through the provisions in our Constitution.

As discussed in illuminating detail by Edwards (2018) the lands of Australia are vested in *the people* as a common wealth. Freehold tenure offers owners a *subset* of rights, allowing a party to enjoy a parcel of land, chiefly through the right to exclude others from enjoying that land. But these rights are, ultimately, subordinate to the underlying rights of the people in common.

This relationship is especially clear in the rangelands context, where land parcels are vast and tenure is often expressed through various forms of pastoral leasehold. Thus, private landholders are more like tenants, whose continued presence is subject to the rightful discretion of the citizens. This idea fundamental to gaining traction of landscape-scale natural capital and stewardship proposals.

## Right to farm: an unresolved tension

Stewardship can be seen as life willingly offered in service of others. On the other side of the spectrum life is played as a competitive struggle, and the rights of the individual are paramount. In this world, land ownership means the as-of right to use that land in any way the owner sees fit.

The *right to farm* has emerged as a pushback against a range of pressures that are perceived as curtailing the liberties of producers to develop their land and farm as they please. The finger is pointed at a range of aggravations, including poorly considered government planning, insidious over-regulation, and the illegal stunts that have become staple for inner-city activists (QFF 2019; VFF 2020; NSW DPI 2020). The trespass laws that were rushed through state governments in 2019 and 2020 reflect the intensity of tensions between private property owners and direct-action militants.

There needs to be a more constructive consideration of these tensions. What happens in the polarised space between the view of land management as an act of stewardship, and the view that land ownership is a sacred private right? Without going the full GreenShirt, it is fair to say that extreme interpretations of private freehold do not invite deeper discussion. There's a fence around the paddock and the gate is closed.

Individual liberty claims are confronted by the question of right livelihoods, twisted by the contest between local people and remote influencers, and further distorted by industry advocacy bodies and self-interested civil society groups. In such a tangle, it is easy to lose the logical thread of any particular proposition as angry slogans and accusations are exchanged through the media.

There is a need to have far more considered and respectful discussions so that the issues resolve toward a more cooperative, mutually beneficial arrangement. But this is not for the faint-hearted.

As a starting point, I believe the BaU ag sector needs to unpack their own internal contradictions with respect to the freedoms that come with land management. Here are three of the hot-button points:

- Land managers assert the right to choose any legal profit-making production technique; *but*
    - *they object to public policy that accounts for, and assigns costs to, negative externalities.*

- Agriculture enjoys the status of an essential public service; *but*
    - *it wants to be exempt from meaningful public oversight and policy.*

- Farmers want the liberty to extract natural capital from "their land" for free; *but*
    - *object to a social obligation to re-invest in natural capital where it impacts private profits.*

I am not aware of a theory or industry policy initiative that resolves these contradictions. The Australian Beef Sustainability Framework contributes a set of values and measures that could inform further discussion. And any meaningful discourse will require the inner-city militants to confront their own contradictions, in particular their role in perpetuating the alarmingly unsustainable suburban and urban conurbations chewing up Queensland's coastal fringe.

Although there are some important points of natural justice in the right to farm arguments, they obscure the fact that many tensions borne by land managers arise through a mismatch between proper land stewardship and the overbearing demands of financial growth.

The ways in which finance creeps in and takes over our businesses, government, and land is the shared story between farmer and urbanite. Even though a farmer-city alliance is cited as a goal of the GreenShirts, it comes across more as a blood pact to double-down on BaU in a populist race to the bottom. Railing against regulation, reporting, and regeneration is missing the opportunity to find progressive common cause with the cities. Far more productive ideas are encountered in the movements associated with food justice, food sovereignty, degrowth, and reconceptualising food as a commons (Anon 2020a) reviewing (Vivero-Pol *et al.* 2018).

It seems clear that such a discussion will involve a mutual acknowledgement of dependency on, and obligation to, one another. The *right* to farm must be welded on to an *obligation* to serve. Thus, we could begin work on a set of shared principles that can help us manifest better outcomes for everyone, farmers and fanatics included.

## Social license is a significant matter

Social license is a powerful term that has seen a lot of usage recently. Like “natural capital” it is a metaphor: no one physically issues licenses on behalf of society. Social license refers to the moral and ethical dimensions of an activity as distinct from its strict legality. It is often used in cases where there is a clear need for precautionary approaches (the moral imperative to safeguard a liveable world for future generations) but there is no regulation or law preventing the activity in question. This can happen around large resource exploration and extraction projects. Generally speaking, companies operate within the strict letter of the law. But many people (ie, the public) can nonetheless feel that the activity is “not right”. Hanabeth Luke (2017) referring to Tsing (2011) provides an encapsulation:

> *Social license is a term often used to describe levels of community acceptance for an industrial project or other landuse change (Joyce and Thomson 2000). Gaps between landuse planning decisions and community aspirations can create conflict and, potentially, social resistance. Whilst some people may tolerate, adapt and benefit from new developments and landuse changes, others may experience physical or emotional impacts that can lead to friction between industry and community, as well as within the community itself.*

When it is mobilised effectively, social license can have material impacts on an industry’s capacity to conduct business, so it has to be taken seriously. The mining industry went through a significant period of self-reflection before developing strategies that allow it to engage with the social license conversation and return to a position of relative strength (Boutilier *et al.* 2012; Costanza 2016; Ofori and Ofori 2019). Primary producers have responded defensively to the concept of social license on fronts from land degradation and veg clearing to animal husbandry and live export, but as yet they have not gone through the transformative processes that the mining industry has undertaken.

Social license debates can provide a valuable glimpse into the future since the discussion is about what “should be.” If history is any guide, many of these “should be” aspiration end up coming to fruition. For example, rangeland operators should note how banks and other financial institutions are starting to reduce or even refuse services to industry sectors that fail to engage with social license issues. Most

producers are already working toward improved animal welfare but social license can include global-scale issues too. Companies who are “sitting out” the climate debate may well find themselves locked out of markets and finance in favour of competitors who adopt socially-acceptable mitigation strategies (Stanford 2020). As mentioned previously, the MLA’s Australian Beef Sustainability Framework (MLA 2019a) is a singularly positive effort in this regard.

With few exceptions, farmers and graziers are still encountering the idea of social license in two ways:

- From a producer’s perspective, there is resentment towards a remote “public” who impose their values without taking proper account of the additional costs that the producer must bear. For some producers, the only alternative seems to be counter-attack or lining up behind combative industry advocates who work to shout the public down..
- From the public’s point of view, there is resentment that the *de facto* operation of laws, agreements, and economics all fail to adequately deliver food and fibre that meets the highest expectations for ethical and sustainable production. In their view, threatening to withdraw social license is the only alternative left.

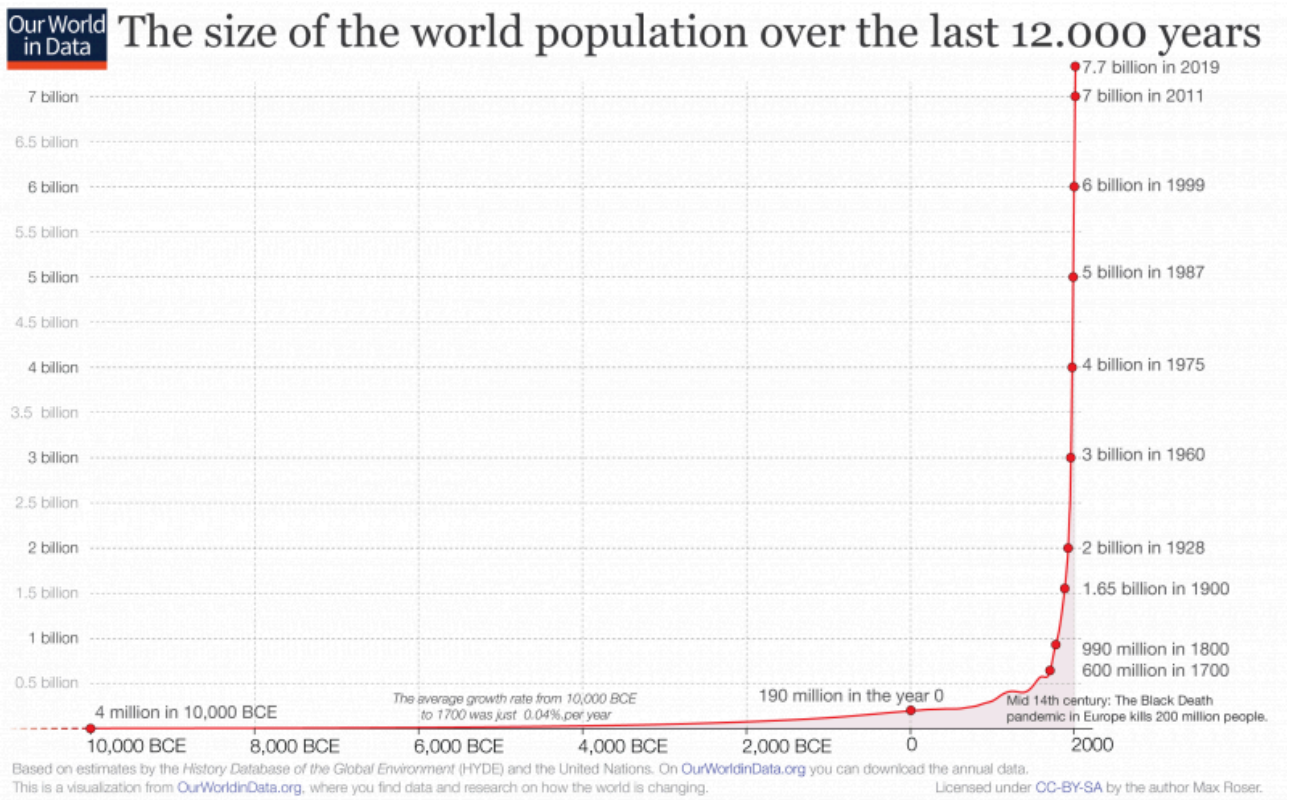
This is an unfortunate impasse. The concept of “social license” is quite powerful and should be retained as a useful asset in the democratic toolkit.

## Rural-urban divides and the reality of collapsing cities

The usual formulation of the rural-urban divide needs to be re-considered. There is a superficial story that shows us heroic, hard-working farmers producing the world’s best food and fibre. People in the cities have no idea the true cost of these goods. Worse, a fraction of that urban population have become aggressively anti-farmer as a result of misleading representations of primary production.

This caricature has some truth to it, but it is also a massive mis-direction. There are far more problematic divisions between cities and the land that feeds them. The petty offences of a handful of vegan activists are only a hint at the extent of the problems.

To find these deeper issues, it is necessary to remember that cities with populations larger than 100,000 people are extremely recent phenomena, and most of them have collapsed due to resource exhaustion (Janssen and Scheffer 2004; Diamond 2011; Yunkaporta 2019).




Dealing with dense concentrations of people is not something that we've figured out how to do yet, but history is accelerating and we had better lift our game really quickly. Projections for world population and distribution are summarised with alarming clarity in Gutteridge's account of food security (2020, chap.3). In just the last 100 years the scale of cities have become so immense that it is fair to say we are operating completely outside the limits of human experience.

These cities are full of people who are detached from country and yet still dependent on the provision of life support. The situation in Lagos is different in many ways to the situation in Brisbane. In Lagos, a high percentage of people are directly connected to small farmer production, daily fresh-food markets, and first-hand connection to primary production networks. In Brisbane, the vast proportion of people encounter food as mediated through two corporatised and anonymised shopping "experiences", accessing highly-processed consumables with minimal connections to the lifeways that produced them (Tsing 2015). The underlying relationship remains: social power resides with the people...and the people are in the cities. Thus, our cultural story is imagined by urban minds. The future of the rangelands will be determined by cultural shifts in these urban minds.

Our cities are populated by marketing consultants, media pundits, academics, franchise operators, tradies, economic advisors, machinery dealers, chemical suppliers, and so on until the entire apparatus of mainstream culture has been assembled. They all need food and fibre, and they are all competing to squeeze a dollar from one another. Because the dollar they squeeze from one hand is in turn squeezed by someone else, the continuous effect is to wring "excess" capital out of the system. That means less money for workers, less money for precautionary policies, less money for preventive programs, less money for reinvestment to grow natural capital...the end result is an impossible proposition for both the land and the people who are doing their best to turn a living wage from primary production.

Considering the historical endurance record for very large cities (it is not good), there is reason to suspect that the current age will be much the same. COVID has been a disquieting reminder that we are woefully unprepared for interruptions to global (and national) logistics. There is little sign that the cities will begin a process of de-intensification and decentralisation anytime soon. So the risk of sudden and violent collapse is increasing, regardless of how much we'd like to just not talk about it. Inevitably, a point of critical failure will be reached and the major underpinnings of that mainstream story collapse (Jackson 2016; Wood 2020).

We should be making it possible for large numbers of people to establish small agrarian settlements across the rangelands. Such a policy would both (a) increase the basis on which thriving outback communities can emerge and (b) reliably contribute to resilience by cultivating a new generation of people with the skills to meet their own survival needs. Those two outcomes are good either way: if the mainstream doesn't collapse, we will have a more populous outback with practical people going about their low-intensity lifestyles. If collapse does catch up with us, well, same as above.

## Degrowth and coviability

Ideas about "degrowth" have been circulating for some time now, particularly since *Limits to Growth* (Meadows *et al.* 1972) set the contemporary discussion in place just as the world's largest economies careened forward on the back of speculative finance. The outlines of degrowth are admirable and defensible. The argument is that since unlimited economic growth is not sustainable over the long term, there needs to be a more equitable distribution of prosperity to enable human flourishing in all societies (Jackson 2016). Acting ethically (and rationally), citizens of the rich countries will accept a program of intentional reduction in material intensity while maintaining or increasing the basis on which a more enduring prosperity is built: health, family, community, opportunity. Thus, the world's materially wealthy cities should be on a trajectory to slow down, leaving room for the world's poorest to catch up and properly meet their basic material needs. Such a strategy reduces global inequality while overall lowering the footprint of urban resource requirements.

It is useful to note that the cities, like governments, businesses, and people, are under tremendous pressure to deal with issues arising from an un-limited growth agenda. A recent article contributed by Ian Lowe and Mike Berry highlights the issue:

> *No Australian city has a long-term vision showing how a future stabilised population might be supported with the essential resources of food, water and energy. No Australian city has faced up to the inevitable social tensions of increasing inequality between a well-served inner-urban elite and an increasingly under-resourced urban fringe.*
>
> *Leaders in cities that have not grown as rapidly, such as Adelaide, lament their failure to grow like Sydney and Melbourne, despite all the associated problems. All implicitly believe unlimited growth is possible.*
>
> *In reality, the expanding ecological footprints of the large cities have created unsustainable demands on land to support urban dwellers. And the wastes the cities produce are straining the capacity of the environment to handle these.* (Lowe and Berry 2019)

So, out west we have rangelands land managers struggling to avoid natural capital run-down due to the pressures of financial capital, and in the east we have governments struggling to maintain a growth agenda with insufficient natural capital and (public) finance and to service that growth.

At the scale of macroeconomics, there is a clear recognition that our current arrangements are untenable. And a new set of economic foundations are needed. Tim Jackson has been particularly clear on this point:

> *… the investment portfolio for a sustainable economy consists in building long-term assets in low carbon technology and infrastructure, in resource-efficient manufacturing, in service provision, in health care, in education, in public spaces and social goods, and in the protection and restoration of habitats, forests, wetlands, soils and other natural assets. Some of these asset types may offer very conventional benefits with rates of return comparable to existing portfolios. Others however will impose considerable challenges on existing institutional structures and financial architectures because their very real environmental and social benefits are not reflected in market prices and financial returns.*
>
> *The scale and nature of this dilemma suggest that the combined challenges of climate change, environmental pressure, and resource scarcity require macroeconomic as well as microeconomic responses. In fact, there is a need to develop a fully consistent ecological macroeconomics in which it is possible to maintain financial stability, ensure high levels of employment, improve the distribution of income and wealth and yet remain within the ecological constraints and resource limits of a finite planet. (Jackson et al. 2016)*

The natural companion in a degrowth scenario are our urban cousins. The rural-urban divide has been thoroughly elaborated in the literature, and many researchers and commentators have moved on from this framing. It's a good thing, I believe, because there is a high demand for fresh assessments of underlying stressors and unifying aspirations. These assessments need measures that can be communicated in both highly-specialised domains of expertise and in far more accessible forms through various expressions of cultural narrative.

In the current era, GDP (gross domestic product) is the standard measure of economic activity and this is expected to reveal all the important information we need to know about how our world is going. If it were not so, one has to wonder why it continues to provide the wrought-iron bookends for any discussion of national aspiration. The critiques of GDP as a useful signal of human progress are numerous. A convincing account of the faults (and occasional merits) of GDP is given by Tim Jackson in Prosperity without Growth: laying the foundations for an ecoomy of tomorrow (cite)

Instead of digging further saps under GDP's crumbling edifice, I'd like to flag the arrival of "coviability" as an alternative framework for standardised measures. The work assembled in *Coviability of Social and Ecological Systems: Reconnecting Mankind to the Biosphere in an Era of Global Change* (Barrière *et al.* 2019) spans a breathtaking (and refreshing) spectrum of contributions that support coviability as a credible indexing theory. A brief introduction will suffice:

> *In a more sustainable world, the concept of coviability is emerging as a concept to respond to humanity's current global concern about its future. Coviability forces real challenges to the future of humanity, and demands attention to all types of inter-relationships existing on a global scale, so that life oriented by the logic of "development" of a few does not interfere negatively on the way of*

> *life of other social groups, leading to uneven development and increasing exclusion. In fact, despite official discourse on environmental protection, the logic of development that is promoted and perpetuated reveals a lack of recognition for much of the rights of Nature.*
>
> *Coviability invites us therefore to rethink the relationship between society and Nature, in order to preserve ecological and human sustainability in its various dimensions––economic, social, cultural––thus demanding a huge effort in order to build a dialogue between the empirical knowledges and the different areas of science, in search for the analysis and solutions to the problems.* (2019, p.xv)

Adoption of measures centered in coviability would go a long way toward orienting our cultural conversation in more relevant terms.

## Country needs people: Land management at human scale

Let's ask another question relevant to the theory and practice of land stewardship: Where are the people? Humans belong in the landscape: we learn what it is to be human through deep encounters with the natural "other", and thereby gain our orientation in the world. As Mary Graham (2021) has said: "Humans need a preface. That's what country gives us. The thing that comes before us. We need that preface for our lore, our culture, our own peace of mind that there is something bigger than us. Otherwise we go mad." ((transcript ref))

This is a relationship that cannot be automated, abstracted, or modeled by artificial intelligence. It's critical to both ourselves and the living land that we show up in person and engage. Pay attention. Learn. Act with reciprocity.

The Rangelands Declaration calls on us to:

> *Affirm that landscape management properly rests in the hands of people acting with modern knowledge and Indigenous wisdom, and that they are the trusted custodians of sustainable utilisation, conservation, and regeneration.(Declaration 2019)*

There ought to be an enormous number of jobs on offer, yet depopulation is the overwhelming trend across Queensland's outback. There are many complex factors at work here (Phelps 2020) but most of the explanations feature some form of economic scarcity. People leave the outback because there is no way to earn a living. Everybody has to be selling something. There are only so many natural resources to flog, and without the capacity to transform something into cash, life in the outback (or anywhere else!) becomes a very challenging prospect.

Let's suppose for a moment that people could make an honest living by performing the work of environmental (natural capital) stewards. Leaving aside *how this gets funded*, let's stay focussed on what a new generation of natural capital stewards could mean for outback communities.

Heather Douglas has written persuasively on the need to broaden our ideas of how a multiplicity of cultural activities are necessary for flourishing communities (ca. Douglas 2020b). She specifies two key factors necessary for future development:

> *To survive as a viable region, two primary goals should guide rangelands development decisions: repopulation strategies and improving wellbeing. Expanding the population will improve the visibility of rural and remote issues in the political landscape and gain commitment to the region. Creating long term, well-remunerated jobs will provide income for individuals and essential revenue for regional governance processes.* (Douglas 2020a)

Douglas notes Gray's (2007) vision for a "new regionalism", globally connected, and based on ecological stewardship and self-sufficiency:

> *(These new communities would be established) combining ecological modernisation with bioregional principles. Political decision making in new regionalism is democratic, participatory and collaborative. Communities are organised primarily around naturally defined regions. New regionalism is outward looking and globally engaged, with an ethos embedded in the notion of a global civil society to provide a vision and desirable level of accountability. In this utopian visualisation, production and consumption is local and cooperative, and natural resources are used efficiently.* (Gray 2007 in Douglas 2020)

There are further discussions of the role of people in the Australian outback provided by Pew's campaign: *Country needs People* (2016). This is largely centred on the opportunity to employ Indigenous Rangers for cultural and conservation activities on Indigenous Protected Areas (IPAs), national parks and reserves, and in land management activities on grazing country.

## How much should a stewardship payment be?

I've placed the discussion of "how much?" here, in the middle of the paper, because it forms the decimal point on which the balance of entirely different sorts of values are considered.

To review: the standard BaU approach to a stewardship payment is to (a) define and assess the condition of an environmental "asset"; (b) find a defensible line of reasoning that connects that environmental asset to an economic figure; and then (c) negotiate a price that will be paid per increment of positive change in that asset.

For example: (a) a wetland might be assessed in poor condition; (b) its value as a water filtration service is equated to the cost of building water treatment facilities (Kenny 2006); and (c) a price for shifting the condition of the wetland (according to some assessment framework, like Accounting For Nature) is negotiated between land manager and the funder. Payments then flow.

This approach leverages the great strengths of the marketplace to distribute scarce assets to their highest utilisation. Scarce public money finds its way to rare and highly-valued natural capital assets, via some market technique, eg, reverse auction or select tender. The strength of this approach is its familiarity. It is entirely "legible" to the agencies, companies, and land managers who would be expected to participate. It is especially coherent for the remote publics who would be providing money to the arrangement. Distant suburbanites are the same as high worth philanthropists and government agencies in this regard: they all want to have credible evidence of a "return on investment" and the notion of paying specific dollars for a specific quantum of environmental benefit just sounds like common sense.

But it's a dead-end road since what is being offered (environmental benefit) cannot be alienated from the context of the land, and cannot be valued in dollars. Inevitably, such a market-based arrangement will tend toward the usual games which are the staple of markets.

## *Cash for koalas*

Suppose a philanthropist put a great deal of money into trust so that biodiversity payments could be made to land managers who could show improvements to their habitats. The agreed indicator is the number and health of the resident koala population. (The count would be overseen by certified independent koala counters, of course.) Land managers would be paid per head for increasing koala populations. That's fair right? The donor puts money into a stewardship program and they need to see tangible outcomes. So let's pay per koala. A very simplistic rendition, but basically we have a "cash for koalas" program.

If such a scheme were to proceed I predict that within two seasons the Queensland Country Life would be running articles about old mate who (for a price) could drop off a dozen ringers the night before the census man showed up. Why worry about the pesky things all year long when you can get a good mob with just-in-time logistics? There's the other story about the fella who was accused of unfairly luring koalas across the paddock fence with especially tasty eucalypts: isn't he stealing what rightfully belongs to the neighbor? On top of this shadowy behaviour we will also hear that the scheme is dogged by inefficient bureaucracy ("let industry count its own koalas!"), tilted in favour of the big players ("it's not fair...they have professional koala cuddlers on staff!"), and of course the paperwork would be a nightmare.

If this sounds ridiculous, you haven't been paying enough attention to the long and inglorious history of attempts to attach deterministic business rules to complex adaptive systems. And really, that's a lot of what this whole paper is about: the cash-for-koalas caricature is a faithful rendition of the follies of the "mechanical mind", something that Charles Massy discusses through the fascinating stories of regenerative agriculture in *Call of the Reed Warbler(2017)*. I do apologise to the koala-lovers out there...my point is simply that the market will inevitably produce incentives for such behaviour. And that would be a real shame because it leaves so much potential un-explored.

I think a viable alternative to the cash-for-koalas programme would start with the idea that the most valuable asset is the land manager's attention. There is no asset as valuable as this, so that is what the public should pay for.

## *Paying for attention*

How to measure attention is easy enough because, unlike the handful of experts who are capable of quantifying the relative health of soil biota (or validate actual koala populations), almost all of us are already expert at detecting when someone is paying attention or not. Thus, it would be straightforward to establish an audit process that combined assessment by peers (with keen local knowledge) and assessment by outsiders (with good general knowledge).

The verification process doesn't need a lot of paperwork or technical surveys. A simple interview at the kitchen table would likely be sufficient. This would be a conversation amongst fellow "commoners", ie

amongst people who share in the management of a commons. The central question would be: “How did you spend your stewardship payments this year?”

The interviewer might be someone from a different district and the circuits of interviewers would be changed every few years. Becoming an interviewer might be something like jury duty: a normal part of civic function.

Land managers who are paying attention to the complex challenge of building natural capital will be able to discuss their journey with a high degree of credibility. Land managers for whom natural capital (and stewardship payments) are just another “finance game” will struggle at these interviews. Because it is pretty easy to spot the difference, land managers can be accurately (if subjectively) assessed for their performance.

The assessments can be supported by a range of remote sensing and on-ground audits as well: these objective measures, however, must always be given lower weighting than the land manager’s own assessment because such scientific measurements are too easily confused by the complexity of living systems. The farmer’s insight is what is being paid for and assessed.

What we are paying for is the land manager’s attentional input, focussed on the long-term accumulation of natural capital. So, how is a price set?

### *A price for the natural capital stewardship payment*

I believe the most efficient method is to take a straight per-hectare approach. In the holistic world of complexly interconnected living systems, every bit of the land is as valuable as the next bit.

I have shown that rangelands country delivers (very roughly) $33/ha gross earning per year. Leveraging the displacement method outlined above, I can pick a figure of 10% as being economically “interesting” to a land manager, i.e. $3.30/ha for stewardship payments.

Thus, under this scheme, a 20,000ha property would be offered $66K/yr from the public purse to fund some range of practice change activities. The money is provided every year, up front, no application needed.

At the end of each year, the land manager is assessed through the kitchen table interview. The land manager chooses how to explain their land management practice, using words and artefacts that make sense to them: no complicated paperwork needed.

### *Proving the return on investment*

Is an informal chat around the table sufficient to acquit the expenditure of public funds? I think a careful examination shows the answer to be yes, and actually quite a bit more effective than the typical bureaucratic processes surrounding government funding programs.

The land manager’s obligation is to tell the story of how they spent the stewardship funds. That is, how do they connect their stewardship payment to the high-level goal of building natural capital on the land under their management. The land manager must have a very wide discretion for how they spend the country’s money. Nonetheless, it should be possible to map out chains of reasoned linkages between

some specific expenditure, and some expected benefit. For an outlier example, suppose the report that they needed to take the family to the Sunshine Coast for 2 weeks. Why? Because they needed a clear head before (linkage) they were ready to undertake a complete redesign of their grazing system (linkage) with the goal of radically building soil carbon and native pastures. We might flinch at paying for their holiday, but this is what is meant by trust and discretion. What should the auditor say about the $12,000 vacation? “Thank you for explaining your reasoning, Ms Grazier, we’ve taken notes and look forward to hearing more from you next year.”

This would be alarming to the Audit Office, no doubt...but they are on the wrong side of reality here. With complex adaptive systems, the one thing you really don’t want to do is pretend you can map out causal linkages in an audit trail. The outputs of a complex adaptive system are not reducible to predictable quantities. In contrast, pattern behaviour can be confidently predicted based on the type of inputs delivered to the system. For example, through the provision of appropriate governance (Mahon *et al.* 2008), or the provision of intentionality, coherence, and resources (Roundy *et al.* 2018).

That’s all very well, but at some point the land must start showing some response to the land manager’s efforts. At each year’s interview, the land manager should be able to explain how their annual natural capital investment payment had been spent. There should be a clearly reasoned causal chain leading from expenditure to result. There is no science or right/wrong judgment needed at this stage: remember, the land manager has maximum discretion to use that money how they see fit. All they have to do is explain how *they* rationalise the way that public money translates to an increase in natural capital.

These lines of reasoning can be plotted in a rough and ready way, by the interviewer, so that a picture emerges of the land manager's evolving thinking. This forms a sort of investment decision map, which functions as an audit and an acquittal.

And since we will have a “map” of the investment choices the land manager has made over preceding years, we will be able to better interpret the situation where a land manager is showing poor performance.

### *From deterministic outputs to complex systems inputs*

So let's abandon the idea of asking land managers to show a specific increase of soil carbon delivered in exchange for a specific payment of money. It’s an inappropriate way to understand the relations of stewardship.

A far more interesting mapping is the collection of rationales that will be offered by land managers at their annual audits. Cynics will focus on the edge cases like the Sunshine Coast holiday, but my expectation is that the vast majority of land managers, who are *already focussed on doing the right thing by their country*, will welcome this new stewardship payment and will delight in making proper use of it to grow stocks of natural capital through an astonishing range of practices that are relevant to the specifics of their patch. Since the interviews are undertaken by fellow land management adepts and enthusiasts, there is plenty of opportunity for interesting conversations to develop and be shared. The annual conversations are a de-facto innovation and wisdom collection process that will reveal far more useful information about land management in Australia than anything currently undertaken.

The $3.30/ha figure is clearly offered for discussion purposes: the underlying point is that the stewardship scheme should be extremely simple to operate and based on the principle that the public is paying for the land manager's attention (input), not the number of koalas (output). I will call this flat-rate scheme the **Outback Stewardship Agreement**. It will find its feet in outback Queensland first, and then be adopted nationally.

### *How to lose the farm*

This scheme offers a large degree of freedom to the land manager. I think that placing enormous trust in the land manager is exactly what is needed: no one knows the country better than the farmer. But the public has to trust that the farmer is legit. That trust will grow when provided good foundations: independent peer assessment, audits, remote sensing, etc. But that trust has to be protected from free-riders and incompetents.

What if a particular farmer is a gun mechanic and popular with the lads, but is poorly suited to a life of stewardship? Sorry: the public is paying for attentional energy. There needs to be a graduated series of consequences for non-performance.

Again, the details of these consequences need to be developed. The practicalities of this scheme can only emerge from constructive dialogue amongst the participants in managing what is essentially a common pool resource.

Drawing on Ostrom, I think it is essential that (ultimately) a land manager's right to farm is at stake. If all other avenues fail to make a satisfactory change in the land manager's performance with respect to their natural capital investment funds, then they should lose the privilege to manage the property.

This is extreme, but necessary. It is right and proper for the public to expect a land manager to "pay attention" to the matter of natural capital. The public (through this scheme) is happy to pay the land manager for their services. But if the land manager does not wish to "pay attention" to the public's interest, then the public should be able to ask the land manager to move on and allow someone else the opportunity to work the land.

This establishes an essential quid-pro-quo that bridges the public-private divide in an equitable, yet decisive arrangement. The Outback Stewardship Agreement thus puts real money and real consequences under this relationship between stewards of the land and those who most benefit from that stewardship.



*Looking for common ground in a future for the outback. Forsayth, QLD*

# 5: Queensland's Outback Commons

If you've hung on this far, you must be pretty game. So I won't apologise for alarming you with what is essentially a thought experiment over the next few pages. It's a story. Like most good stories it has drama, danger, and intrigue. I leave the happy ending to your imagination.

In relation to current investments, the following proposal is mammoth. But such biblical-scale initiatives appear to have traction of late. Consider the magnitude of the Bradfield Scheme (Wikipedia 2020a) which proposes to re-engineer the physical hydrology of Queensland. By comparison, my more modest proposal seeks only to rearrange a few sacred cows.

Let's begin by tipping the table over...we're not going to play the game of business-as-usual any longer.

## A modest proposal for a more modern outback

*IMAGINE:*

We, the good people of Queensland, have talked amongst ourselves, from the Gold Coast to Boulia, from the greenies to the Green Shirts, from the first nations to the fresh Australians, and we have decided to take on a big experiment that connects the rangelands right through to George St.

We have agreed that the land comes first...we are part of the land...and we all agree to this as our foundational source of values and morals. Our identities as individuals are far less important than our role as part of a cooperative culture whose primary occupation is custodianship. At least in the context of the rangelands.

A huge change is needed. We need a new contract between the people who manage country and the public at large. We need a new arrangement, that (for lack of a better term) "socialises" a portion of the pastoral estate.

This is like a big structural adjustment program, so we have also agreed that there should be no net loss of income to people's wages and businesses; there should be a fair and humane process of transition; and we need to respect the reasonable aspirations of people who have amassed large holdings. In other words this is all the people deciding to be gentle with one another while firmly moving in a radically new direction. There will be a heap of obligations and credits that simply get wiped off the books, both financial and social, thus clearing away the gridlock of accumulated habit.

In the areas affected by this new program, the cadastral boundaries would stay in place (for now), but the leasehold and private property tenure rights would be dissolved and re-formulated. Land managers have a right to stay where they are. They will be the first generation of stewards.

And we have agreed to a big (nation) building program, sort of like Snowy II, but with a future:

**Grow the population of Outback Queensland by 15% in 5 years while reducing export cattle by 15%**

In other words, this is a plan to increase the number of people who make their homes and raise their families in the rangelands, and to decrease the area of land producing export beef. Both of these goals advance the general objective of increasing the stock of natural capital across Queensland's outback.

The point of such a transition would be to explicitly put the shared interests of the public first through the option to exercise governance powers peculiar to the commons. In this new arrangement, private tenure is no longer supported, nor necessary. The production of food for Australian food security proceeds. The expertise needed to build natural capital is carried in the minds and hands of land managers working their patch. Supply chain logistics would proceed as usual, noting that there will be a fair bit of re-calibration as suppliers of high-input, export-oriented services and supplies transition to more locally-relevant, low-energy strategies that are appropriate for a natural capital context.

The only thing that has been removed by the commons is land speculation and farming for personal ambition. Once land values are brought under government control and capital speculators have cleared off, there will be room for the people who are interested in land stewardship. People who want to play the land as if it were just a game are welcome to hit the casinos and racetracks.

By rights, the current land managers ought to have first crack at continuing to work the properties they have control over. They carry much knowledge of the country, and are well-placed to step into the role of wise (and productive) stewards of the common wealth. Under a commons arrangement, the only thing that has changed is the basis on which this privilege is granted. In the commons, a right to farm is not secured by private finance. Farming becomes a privilege that is earned, assessed, and realised through proper relations with land and people.

Let's turn now to some rough numbers to support this Outback Commons. We'll start with the reduced herd size.

### *Reducing cattle impacts*

In this story, we'll reduce the tonnage of export beef by 15% over 5 years as a means of reducing negative grazing impacts by 15%. The logic is intentionally direct: it's a form of spelling. Slowing the rate of extraction due to primary production allows natural capital to regenerate. There are lots of other ways to reduce grazing pressure, especially via more effective control of wallabies and kangaroos, but

what we're trying to calculate is the cost of displacement of the underlying economic activity. Fewer cattle, fewer watering points, more dingoes, fewer wallabies.

This simple approach also ignores all the complications of real-world beef production enterprises where multiple properties are used for breeding, fattening, storing, and finishing. This is just a ready reckoner to get us in the ballpark. Following is a series of calculations to reach an economic cost of displacing export production, and the amount of land opened up for alternative (public good) utilisation.

Table 8 *Scale of impacts at 15% reduction of export beef, QLD herd*

| | |
|---|---|
| Total value of export beef and veal * | $9,500,000,000 |
| QLD rangelands fraction * | 42% |
| QLD rangelands export value | $4,018,500,000 |
| Target reduction in export beef grazing pressure | 15% |
| **Target = Economic displacement (loss) per Year** | **$602,775,000** |
| | |
| Total QLD area (ha) for grazing export beef (@$33/ha) | 121,772,727 |
| **Target = 15% reduction = land area opened up (ha)** | **18,265,909** |
| | |
| QLD herd size (number of head) * | 12,100,000 |
| QLD herd, rangelands fraction | 70% |
| QLD rangelands herd (number of head) | 8,470,000 |
| Annual rate of turnoff (herd productivity) | 30% |
| Total head turned off per year, rangelands | 2,541,000 |
| Fraction of total production for export (per MLA) | 72% |
| Total turn-off, export fraction, QLD rangelands (head) | 1,829,520 |
| Target = 15% reduction of export herd (head) | 274,428 |
| | |
| ** (per MLA 2019 Snapshot)* | |

This tells us that a policy of reducing Queensland's annual beef export production by 15% will displace about $600M of primary production value per year.

Very roughly, this also means that 18 million hectares of country will be freed up for other landuse, focussed on the accumulation of natural capital.

## *Building community*

Now, we want to bring people to the outback to raise their families and take on stewardship of country with a specific aim to grow natural capital. We won't discuss what those activities might be (there are volumes of ideas). Note that we assume 100% of the economic investment is met through public funding: none of it is directly balanced by financial return (ie, nothing produced by these new settlers is sold to offset the financial investment in natural capital). This provides a worst case scenario in terms of the public finance required.

I quantify the new population in units of households, because the idea is to cultivate the revitalisation of communities. There could be one or more jobs amongst these households, but let's not count the number of jobs. Counting individual employment contracts is not the point of this policy initiative. The number of jobs created can be misleading because of the uncertain linkage with the goal of attracting families to make their homes and thrive in small outback communities.

Since these new households are going to take some time to settle in and optimise in the environment, we'll add 20% to the current average incomes. Working on the back of an envelope we see that a 15% target suggests 4,500 new households being established at a total public subsidy of about $380M per year.

Table 9 *Scale of impacts at 15% growth of households, QLD rangelands*

| **Outback QLD population** | **80,000** |
|---|---|
| People per household | 2.7 |
| Households | 30,000 |
| Income per household, annual | $70,772 |
| | |
| Target population increase in 5 yrs (as households) | 15% |
| New households | 4,500 |
| | |
| Economic subsidy (assume) | 120% |
| **Annual total household subsidy (QLD)** | **$382,168,800** |

Added to the $600M in lost production income, we are talking about a public investment of $1Bn per year to achieve 15% displacement (reduced impact) and 15% replacement (increased human capacity). We have no idea exactly what this translates to in terms of natural capital accounting (e.g. tonnes of CO2 stored, number of feral animals reduced, hectares of perennial pasture revitalised). But we can feel confident that, if the basic preconditions were in place, it's quite likely that a substantial measure of public good benefits will flow from this investment of economic capital.

## *Self-sufficiency as a cultural norm*

The outback commons offer an opportunity which only becomes clear once we shift our values toward community self-sufficiency. The rangelands are classically described as a depauperate, marginal landscape unsuited for intensive agriculture. Thus, we have enormous land holdings, grazing, and very few people eking a life out of land yielding gross returns of $33/ha for commodities, 70% of which are sold to export markets

The grinding disadvantage of outback communities shifts if the social goal is shifted. Instead of asking what's the most amount of economic wealth to be extracted at the least cost of production, how about asking instead: What is the capacity of the outback to sustain settlements of the size of Boulia, if they were based on maximising self-sufficiency? In other words, if the aim of the settlements were to

achieve local food and water security for a population of about 300 people (120 households), how many settlements would comfortably fit in the rangelands?

Water is often cited as a limiting factor, but those limits arise in the context of high-consumption, commercially-focussed resource utilisation norms. Try putting the mayor of a small Ethiopian town in charge of a new settlement on the Barkly. I am confident they would bring in a culture of conservative resource use that would scale very well to the conditions there. Or request the assistance of a clear-eyed Mewari swadeshi leader: ask them about effective forms of local governance that help keep villages vibrant, innovative, and yet conservative in their resource demands. These people know how to care for scarce natural resources as if their lives depended on it. I'm not aware of local-scale food security research that takes this approach in the context of Queensland, but it might make for a very interesting exploration.

The point is that the rangelands can likely support a hugely expanded population if the baseline objective were to grow healthy, connected, and vibrant communities. The resulting network of small communities would develop micro cultures of necessity and in relation to the immediate presence of the land. Over time, they will be learning and elaborating the cultural habits of true resilience (Ridges *et al.* 2020). For the cities to survive they will need far more than remote sensing algorithms, drone tree seeders, and virtual fencing. They will need an enlivened connection to country manifested through other humans acting in mutually beneficial relationships between the abstracted urban hive mind and the embodied intelligence of the living planet. Our outback commons provides just such a reservoir of capabilities.

## *Questions from the commoners in transition*

So we're planning to socialise a fair bit of the rangelands. The people who currently run that country are deeply invested in their BaU lifestyles and arrangements. We've imagined what the mid/long-term picture might look like for the Outback Commons, but what about in the short term? What are some of the sticky questions that need to be addressed with respect to personal freedoms and private aspirations? Let's cover a few sound-bite sized issues and responses:

***What about equity? I deserve to be able to cash out on the value I've built here.***

The transfer to commons would involve a fair payment for the value of the land.

***Under a commons, how can I leverage my land for investment capital?***

You can't. The land is no longer your personal financial asset to be leveraged for anything. But then again, you don't need to do that sort of thing any more. There is plenty of investment capital, both from the public program and through other green investment sources.

As a land manager, as a steward of the commons, you do not need to take on speculative debt in order to "survive in a cut-throat competitive business environment." This isn't the world of rapacious capitalism anymore. No need to worry about setting up a secure off-farm investment portfolio and voting to support franking credits while dodging taxes...that's a fine hobby, but it's not key to your solvency. You don't have to beggar your ethics just to make ends meet. All you have to work out are

productive relationships with the enormous living complexity of the land you have the privilege to manage. Too easy!

***What if I want to buy a jet ski and my land manager salary makes that hard?***

I guess the answer is to do like you already do: save your money.

***What if I want to buy three jet skis and I want to do it now? Aren't you restricting my freedom?***

Not at all. But the public is only hiring and paying for land managers who are dedicated to putting their attention into land management. Stewardship is not for everyone. You are free to find a different job that allows more free time for jet ski holidays.

***I have a right to build my financial assets however I choose.***

Yes, you do. But the point is that land management is about stewardship, not personal wealth accumulation. Land managers are not looking to get rich. For those who lust after a crack at a huge financial windfall, perhaps socialised primary production is not the right place to look. There are plenty of other sectors that are not yet socialised...take your risks, sweat the debt, and we all hope you get rich. But that is not a game we want people to play with our land any more. The land is there to be worked by stewards, by custodians of the commons. We are looking for people who understand the difference between farming natural capital and farming financial capital.

***I have lived here for 3 generations, and I will never give up this land to anyone.***

Fair enough. You sound like a proper custodian already. Transferring to a commons will only change your situation for the better. Instead of having to always hunt for a dollar to pay the bills, the bills are already paid. All you need to hunt for is a way to make your country sweeter, your cattle fatter, your ringers happier, your neighbours closer, and your family stronger. Do all that and you'll be fulfilling your side of the public service obligation, and the home paddock is still the home paddock. Not a bad gig, really.

***What if the government changes their mind and takes my land?***

Yep, there are no guarantees in life. There are two basic strategies: defensive and offensive.

Under the defensive strategy you would put up strong fences, buy some guns, and spend your money electing politicians who shout about protecting private property from the scourge of big government. You are secured through the strength of individual defenses. But this path also leads to a continuous corrosion of public institutions and amplification of dominating individuals who can act capriciously. Thus, your security is reduced as the culture descends to the level of might-makes-right.

Under the offensive strategy, you would build your personal security through networks of reciprocity. As you help make your neighbours and distant city cousins more secure and connected to a culture of abundance, a virtuous cycle is reinforced. The culture shifts to looking out for everyone's best interest in a network of cooperation where my benefit comes through your success. In such a culture, the government is a partner and ally. It provides a strong institutional foundation which offers stability and security for everyone.

## Across the public-private divide

Stewardship of the commons also helps move us beyond the zero sum formulation of assets=liabilities on the ecosystem services balance sheet. Edwards (2018, p.36) highlights this emergent possibility:

> *The stewardship conception also casts environmental regulation into its proper perspective. Instead of being an infringement on private rights, it is an attempt by society to ensure that the obligations it desires or requires are met. The stake that the landholder has in the ecosystem services from broadacre properties is less than the stake the community holds. Private property regimes derive from the common property, which is owned by all citizens collectively (subject to native title).*
>
> *Damage caused by poor management practices is an infringement of the residual property rights of the community.*
>
> *Reeves (2002:ii) noted that "The claim that farmers ought to be compensated for restraints on their freedom to use their land as they see fit can be readily opposed by a claim that those who receive ecosystem services ought to be compensated for reductions in the supply of those services brought about by agricultural practices". This lose-lose debate is bypassed if farmers are compensated not for negative restraints on freedom but for positive production of (environmental) goods.*

So farmers, as land managers, are ideally placed to work on behalf of the public. When agri-environmental land management is undertaken as a public service we get a neat resolution to the problem of public-private divide. Substantial portions of the rangelands could be converted to an agroecological commons. This would open up the policy and regulation space to encompass a wide range of new possibilities.

Once the public-private barrier is removed, the rangelands can be the focus of sustained public-good investment. New landuse options that cannot be justified under private economic arrangements can be pursued in the name of public good outcomes, generally bundled under the heading of natural capital and ecosystem services.

Howard Briggs points to this outcome as a likely resolution to the continued downward pressure of private economic activity:

> *Without a major injection of public funds to have these lands remain in pastoral use, they may need to move to a use other than primary industry in order to maintain their overall health. Circumstances are likely to arise where there is a need to move ownership and management away from the private sector and towards the public sector.(Briggs 2020)*

The decision to manage land for cattle, for ecosystem services, or for some blend between the two is very much a matter for individual land managers to reach, ideally in cooperative discussion with their regional neighbours and communities. Unlike the current BaU arrangements, however, I am proposing that non-beef, non-extractive land management activities are positioned as real (and necessary) alternative opportunities, directly funded from the public purse.

This approach does not imply the cessation of beef production. It does however emphasise the necessity for the net cumulative effects of all extractive and regenerative activities to be tipped in favour of increasing natural abundance. Achieving the right mix is a matter of continuous conversation amongst land managers, scientists, wise elders, and intelligence from around the globe. In other words, the outback can be managed as a diverse commons and it will produce far more cumulative benefit than the BaU options: more private development schemes undertaken through the mechanisms of the conventional economy.

## Who pays? Isn't this a lot of money?

Let's cover some aspects of everyone's favourite question: how do we pay for it?

Is a $1Bn/yr investment of public money in natural capital a staggering sum? Yes and no. If we're trying to *earn* this money through the current market economy, then yes. It's impossible to justify. If we're trying to fund it through bonds floated on the commercial markets, then also yes. But in the big scheme of our national economy, $1Bn is quite a modest figure. And here's the trump card: the finance for this adventure can be a notional entry against our national debt, carried without concern for as long as we like. If that sounds like wishful thinking, let's look a bit more closely at what is actually involved.

Let's assume this project has been successfully pitched as a "grand experiment" that will help inform us on a journey toward rebalancing accounts with ourselves and with the natural world. The idea has taken hold, and people want it to happen. Think of it as having secured a democratic majority. Implementation of this project is a valid exercise of national will.

The immediate stumbling block is "how will we pay for it?"

Note that some people argue that *how will we pay for it* is actually the wrong question: we can't afford not to (Eisenstein 2011). But under the prevailing fashions of economic orthodoxy we will need a more specific answer.

Edwards (2018, pp.67–71) does a very competent job of surveying the range of possibilities available through governmental mechanisms including tariffs, levies, replacement of welfare payments, etc. The National Farmers Federation, AgForce, National Australia Bank, and others are looking for ways to bring investment capital to the table via markets for the natural capital (or ecosystem services).

These strategies are based on free-market orthodoxy, and as such, will begrudge the deeper, shared goal of making the public's natural capital asset base *as increasingly abundant as possible*. As discussed in previous sections, as long as the environment and human well-being are put on the negotiating table to be traded off against a notional "scarcity" of currency, the most durable and beneficial policy options will remain obscured.

### *Government's proper role: spend money into existence*

One interesting strategy is to alleviate the artificial scarcity of economic capital in a deliberate and carefully measured program of public investment. In other words, using the mechanism of fiscal debt as it was intended: to provision public goods through direct employment. This is the domain of "modern monetary theory" or MMT (ca. Kelton 2020).

MMT is a thoroughly modern re-interpretation of Keynes in a world of fiat currency. It has attracted huge popularity, and, naturally, there is plenty of insightful critique to balance out the more faddish claims of its proponents (ca. Dittmer 2015).

The central assertion of MMT is that government's proper role is to manage the rules, or underlying mechanisms, of the economy such that the maximum benefit can be enjoyed by its citizens.Generally this is seen to be full employment, excellent utilisation of human and natural resources, and low inflation. The key levers that MMT asserts are the creation (and destruction) of currency.

Because a country which has monetary sovereignty already owns its own currency, it has the monopoly power to create and remove money from its economy at will. In hard times the government can issue money into the economy to support full employment (creating fiscal debt), and in boom times the government needs to tax money out of the economy to reduce inflation (creating fiscal surplus).

These two powers, creating and destroying money, are the levers that MMT asserts are the government's mandate. The powers are to be used wisely on behalf of the best interests of a nation's citizens. The citizens' interests are always central: money, which in any case is an imaginary tool of entirely human origin, is a notional variable which can be managed to suit the peoples' needs over the course of inevitable fluctuations and vicissitudes of the business cycle.

This is a very simple explanation. In most modern economies governments have hobbled their own powers through legislation designed to protect the public from reckless politicians who would be tempted to spend big simply to buy their popularity. Independent central banks are used to set rates and make the key fiscal decisions. Governments are forced to seek finance on the commercial market, and this is precisely why significant public funds are never available to meet significant public goods, such as liveable wages in the environmental economy. But it need not be so.

In order to fund a massive new investment in natural capital, we could simply decide to use our own sovereign currency to pay ourselves the money that is necessary to get the job done (Dawson and Lloyd-Cape 2020; Dawson 2020; Dart 2020b).

There is a technical challenge in terms of how this new money, created at federal level, can be delivered to state level. The constitutional relationship between commonwealth and state makes this a serious question. However, I am certain that, where there is sufficient alignment of interest, there are promising answers.

A conventional objection to MMT is the risk of triggering inflation. When "free money" rolls into the market, a portion of it will be absorbed by price hikes that add no value to the economy. This inflationary risk is well-recognised by MMT proponents. Far from ignoring the problem, an MMT approach puts management of the potential for inflation at the centre of discussion. Inflation destroys economic value and is the cause of deep anxiety for people who hold large financial assets. But an absence of liquidity means that a large number of people are already suffering due to lack of meaningful employment. Spending money into existence through job creation is a valid way to kick-start a virtuous cycle of earning, spending, and saving. When the private economy is unable to take the initial risk, as in the case of funding an environmental economy, then it is reasonable for the state to step in and provide new money. Yes there are many ways to game and pervert this, but speculators and free-riders are a parasitic phenomenon in both inflationary and deflationary environments.

Real inflation happens when the demand for goods and services exceeds their actual supply. When all the necessary Indigenous Rangers have been hired at good wages, but we still need more rangers, it means demand is outstripping supply and the conditions for inflation are established. Isn't it a better problem to have? Right now there are a lot of people sitting idle, or are idling in non-productive roles (Graeber 2019) because we insist on pretending that capital is a scarce resource. As a sovereign nation, we could properly fund every national park and every Indigenous ranger position tomorrow, if we wished.

### *Deeper in debt, or a bit of loose change?*

Spending money into existence this way adds directly to our fiscal debt. Is it such a big deal? For example, I have proposed a pure debt of $1Bn per year. How does debt feel when added to the national accounts? Let's consider:

The gross national debt stands at about $684Bn, so our new debt adds about $1 in $700, or an additional burden of 0.14 percent. Less than 2 tenths of one percent.

Table 10 *New public investment in proportion to national (fiscal) debt*

| | |
|---|---|
| National debt (fiscal, 2020) | $684,000,000,000 |
| | |
| Lost production income (export reduced 15%) | $602,775,000 |
| New household incomes (investment for 15% growth) | $382,168,800 |
| **Total new national debt per year** | **$984,943,800** |
| | |
| **Fraction of national debt** | **0.14%** |

A tenth and a half of one percent doesn't sound like much, but just to drive the point home, let's consider a couple of analogous fractions.

If Australia were like a property running 9000 head, turning off 3000 head per year, 0.14% is like giving up the profit on 4 beasts per year. How could a land manager justify giving up those 4 head? Perhaps they had decided to (slightly) destock. Or perhaps they're one of the generous graziers who regularly donate a portion of their turn-off to local charities. For example they might have decided to donate 4 beasts per year to a regional foundation that helps rural kids take advantage of education and leadership opportunities. Assuming the foundation is run well and focussed on its goals, that's a pretty reasonable investment in your region's future, yes?

Let's try a different measure. Many people haven't yet converted to MMT, so they still feel like the national (fiscal) debt is their personal responsibility. Let's think about the proposed rangelands debt as a pound of flesh, or squeezing blood from a stone...how much blood are we talking here?

Like many of you, I'm a habitual blood donor. I'm not sure who will benefit from the blood, but donating just feels like a good thing to do. I can donate up to 6 times per year and each donation is about 470ml. If the entire national debt were my blood supply, this new national debt I'm proposing here is like giving an extra 7mils over the course of a year. (BTW: a single shot of rum is 25ml)

4 beasts or 7mils? 0.14%? Pretty small beer when you think about it. After all, we are talking about seriously transforming the rangelands. That's got to cost something. What better way to pay for it than through our sovereign power to manage our own economy?

Table 11 *Analogous measures for proposed national (fiscal) debt*

| **Analogous measures** | |
|---|---|
| | |
| **Donation from herd*** | |
| Herd size (beasts) | 3000 |
| **New national debt as number of beasts / yr** | **4** |
| | |
| **Donation of blood**** | |
| Total blood volume (mL per person) | 5000 |
| Typical blood donation (mL) | 470 |
| Donations allowed per year | 6 |
| Total blood donated per year | 2,820 |
| **New national debt as mils of blood / yr** | **4** |
| | |
| ** See: **Noeline Ikin Foundation*** | |
| *** See: **Red Cross Blood Donation*** | |

## *Life-centric values*

For many veterans of the funding circuit and the political circus, pitching a $1Bn/year public debt proposal is madness. But consider other forms of madness that have actually translated to reality. I'm speaking here of the sovereign power of Australia to invent money using the "magic" of fiscal debt, as in the case of the Australian "Future Submarine Programme" (FSM). The government has approved about $300Bn of public expenditure for a dozen submarines that will not be completely delivered for another 30 years (SfA 2020). Imagine that! As if the best interests of Australia three decades hence could be served by weaponising our relationships with southeast Asia? As if the age of gunboat diplomacy was a glorious standard of international relations we yearn to recover and preserve? As if sending a few young people out in a tube full of bombs was going to make much difference to an implacable foe? The FSM is not even a little bit connected with the reality of building peace or achieving military relevance, which are the purported justifications for this huge new public debt.

What this expenditure really delivers is a bit of economic leverage amongst a whole range of corporate and state actors. In other words, the FSM is a procurement program that buys corporate influence. The government is merely buying its way in to sit at the big boyz negotiating table. The *actual warheads* are far less important chips to play with than the *kilotonnes of government contracts* that flow through the military sector.

It's not all bad. Those public funds are "spent into existence" and the newly-created money pays for people to do stuff. Those people study hard problems and do clever things. They take their earnings

and buy stuff from other people. The economy gets a boost, people have jobs, and everyone is more or less happy. But... it would really be best if none of those submarines ever fired a single shot, right?

Perhaps it is not so outlandish to propose the investment of $1Bn per year in a far-sighted project to populate and regenerate the outback? Aren't the dynamics similar? Public money flows, people earn their salaries and buy stuff. The economy gets a boost, people have jobs, and everyone is happy. The best bit is that, unlike the questionable "peace" crafted from depleted uranium warheads, we get to enjoy the benefits of our public investment. Australia will enjoy a healthier natural environment, more populous and contented communities, and we will have made great strides toward becoming more resilient in the face of climate change (and other tumults).

Somehow we allow the political class to convince us that $300Bn of French submarines is a wise "investment" to be funded through fiscal debt (ie, non-existent capital). This ought to make the critics of Modern Monetary Theory offer an apology for being so literal minded. MMT is really just a set of observations about how a sovereign state might go about managing its money supply for better social outcomes. I would have thought that if we can find $300Bn to play an imaginary game of sticks and swords with Xi Jinping, we could surely have found $1Bn to do something useful here at home, in the real world.

A reminder: MMT asserts that, in times when there is clearly an underutilisation of human resources (ie, unemployment, under-employment, lack of living wages) , the whole society benefits by providing a way for those resources to be utilised. Given the dire employment prospects in the rangelands, aren't we ready for a bit of a shake-up? Consider all the talent latent in the farming sector, in the cities, in Indigenous communities, amongst disaffected wealth managers, bored marketing executives, desperate political advisors, prescient coal lobbyists, honest greenies, wise old professors, disillusioned military contractors, and radical young farmers...if there were a more positive and life-affirming way for them to "make a living", might we not benefit greatly from giving them that opportunity, even if no export earnings were earned? Couldn't it be worth the risk? Aren't we able to trust ourselves to stare down an inflationary curve in exchange for vastly increasing the opportunity for natural capital livelihoods in the rangelands?

Fiscal debt may have its dark side and it will inevitably involve perverse consequences. Yet it remains one of the most obvious and plausible strategies for securing the scale and certainty of discretionary, public-good funding needed.

Let's remind ourselves (again) that the purpose of having a government in the midst of our national economy is precisely to ensure that the economy serves the highest aspirations of the citizens. Once that basic role of government and economy are clearly seen, we may be able to accept the proposition that fiscal debt is the proper way to finance the natural capital investment that our land so desperately needs.

Even if a pure form of MMT is not the ultimate answer, it is useful to note that governments in the USA, UK, China, and the EU have developed very large institutional processes to manage economic transfers to agriculture. A brief survey of these schemes has been compiled recently by Peter Dart as part of the Rangelands Dialogue: *How have other countries funded environmental services for land management?* (2020a).

## How will we know it's working?

No matter how you look at it, a proposal like the above would cause some serious upheaval in peoples' lives, so the expected gains need to be worth the disruption. How will we know if our nest egg of natural capital is growing as a result of our investment of financial capital? What needs to change, how much change is needed, and what would make the best measures of success? If we can't measure and map our journey, how are we to navigate an agenda of intentional change? So there's another issue: the data is patchy and imperfect, the models are not the territory, and the real world is moving fast. It would be better to make some half-right, broad assumptions sooner rather than later. The perfect is definitely the enemy of the good here because even the more academically rigorous assessments highlight just how difficult it is to derive a coherent story based on data alone (Foran *et al.* 2019, pp.275–276).

Measuring biological abundance and diversity is already undertaken using a wide range of techniques and at scales from the in the paddock to multispectral imagery from orbiting satellites and everything in between. The effort to develop sensible, easily-communicated measures has been given a big boost through the UK's targets in the *25 Year Environment Plan* (DEFRA 2018). But in Australia we lack an agreed framework for common understanding of landscape condition and trend, especially in the rangelands.

It should be noted that condition and trend reporting is not really a technical problem: there is no shortage of technology. Instead, it is a failure to properly fund the ongoing assessment and reporting of the health of the commons. This is a proper obligation of government. Most people would understand that meaningful public discourse needs to be supported by analysis and assessments based on expert interpretation and synthesis of real data. This effort must be performed in the public's interest, and it provides the rational backbone of appropriate and equitable policy. Such an important public interest process ought to be one of government's showcase deliverables.

### *A commitment to ignorance?*

Sadly, Australia enjoys an especially embarrassing record in this regard, as catalogued in horrifying detail by David Marlow (2019). I believe this is one of the most egregious--yet generally unremarked--failures of the "clever country", particularly over the past 20 years. Ironically perhaps, this self-inflicted ignorance has occurred right in the midst of an explosion in technical and theoretical advances that should make such assessments all the more accurate, economical, and useful. Instead, (to pick out just three examples) we have witnessed the assasination of Land and Water Australia (2009), defunding the Australian Collaborative Rangelands Information System (2014), and the ongoing perversion of once-proud CSIRO into a tragi-comic mash-up of world-beating public good researchers and fee-for-service hustlers.  Even the BoM has been trimmed, shaved, and groomed to fit cost-recovery and industry-first ideologies (Keane 2020).

Over the past two decades our Commonwealth Government has systematically cut funding that might be used for land condition and trend reporting, and the State Government has spent the last decade working out protocols and looking for budgets to replace agricultural and environmental information assets that were dispersed in the name of austerity. As a result it is difficult indeed to accurately

discuss the state of natural capital in the rangelands. This woeful situation could be easily improved, and indeed the Declaration calls for:

> *Supporting a Rangelands reform agenda that includes:*
>
> *Cooperative ownership of a biennial State of the Rangelands Report presenting social, biophysical, cultural, and economic indicators of condition and trend; (Declaration 2019)*

The last great assessment of rangeland condition, *Taking the Pulse* (2008), was produced by Gary Bastin's team at the Australian Collaborative Rangeland Information System (ACRIS). The report is massive, detailed, and sets the stage for a whole new era in landscape assessment strategies. Unfortunately, ACRIS was shuttered in 2014 in a spasm of (small-minded) small-government ideology.

## *Toward a fit-for-purpose assessment framework*

Trusted, impartial, curiosity-led science in the public interest would be an obvious starting point for open and transparent policy processes in a competent nation state. If Australians are going to engage in the big environmental issues with any hope of achieving a more liveable future, we need far better arrangements to source, curate, interpret, and communicate the condition and trend of our country's natural systems. As a modest start to this end, the Rangelands Declaration specifically calls for:

> - *Programs to enable the informed and ethical use of data to ensure all people can participate in shaping the Rangelands future in a constructive manner, particularly in the area of natural capital accounting; (Declaration 2019)*

As our proposed natural capital agenda for Queensland finds roots across the rangelands, we will harvest an increasing density of information that reveals the biophysical condition and trend of the land. Likewise, we will be informed of the social indicators connected to quality of life, resilience, and mental health.

What we will never have is a set of accounts that give a numerical equivalence between financial capital "invested" in this agenda and the economic value of the "returns". At least, this is not what we should aim for (Williams 2020).

Instead, let's cast the "modest proposal" to socialise the rangelands against the natural capital metrics proposed in Chapter 2. Here's a summary of how the Queensland Outback Commons might stack up in the hypothetical.

Table 12 *Assessment of "Queensland's Outback Commons: a modest proposal" against natural capital evaluation criteria*

| Attribute | Scoring commentary |
|---|---|
| **1: MicroEconomic**<br>Shift the larger economic game toward better outcomes | The commons strategy scores high marks in this regard.<br>The essential advantage over alternative proposals is that significant levels of financial capital are supplied by the public to the commons at no rate of return. There is no pressure for economic growth to service interest-bearing debt. The financial capital is transformed to natural capital via jobs and |

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| | businesses delivering services relevant to natural capital.<br>The validity of this proposition will be demonstrated through improved mental health, more livable communities, and more abundant ecosystems.<br>As citizens observe the positive outcomes of this strategy, they will expect similar solution approaches in other areas. This will be a profound shift in the rules of the economy, nudging them toward delivering better human (and living system) outcomes.<br>There is significant risk that the success of the strategy will threaten actors who benefit from BaU arrangements. The recommended approach is to integrate and communicate. |
| **2: LocalProsperity**<br>Land managers to be more likely to make good long-term decisions | The commons strategy scores high marks in this regard.<br>The key blocker to better decision-making by land managers is the absence of a supportive economic framework. |
| **3: PublicInvest**<br>Sufficient ethical credibility to justify public investment | The commons strategy is particularly favourable here as it is a human-centric evaluation process that is locally relevant, flexible, and focussed on learning and adaptation.<br>The goal of "returning value to the investor" is always in view because the technical dimension of building natural capital is spoken in a thousand different dialects across the rangelands. By insisting on evidence of attentional energy, the best form of credibility is open for audit. This "reputational verification" strategy takes precedence, but does not exclude other forms of validation such as conventional land condition assessments.<br>Finally, the commons approach gains credibility through the fact of a well-understood (and exercised) pathway to remove poorly-suited land managers from country. |

This same metric would be employed on a regular basis to assess and guide the Outback Commons over time. A more thorough accounting against the theory of commons and common pool resources could also be undertaken, as follows.

## Efficiencies of a rangelands commons

Earlier I listed Ostrom's list of necessary preconditions for a successful commons approach to management of common pool resources. I'd like to re-frame those preconditions in the more specific context of Queensland's rangelands to help encourage a commons strategy at effective scale.

Table 13 *Interpretation of Ostrom's minimum conditions in a rangelands context*

| Abbreviation of Ostrom | Rangelands context |
|---|---|
| 1. Clear definition of the commons resource | This will take some work. Clearly defining the resource is a very important factor. I believe, however, that the goal is to develop a holistic definition of land health, reflecting the intent of natural capital in a broad sense.<br><br>It may involve a delineation between different aspects of the land, allowing for complementary forms of common pool resource to be segregated out for management efficiency, all the while recognising the intrinsic inter-relationships |

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| | involved.<br><br>We are explicitly understanding the land as a whole system. It should include both natural capital as well as the related human capital factors. The goal is to avoid isolating certain resources at the expense of others, within the reasonable capacity of land stewards and the supportive community. |
| 2. Common resource is local and appropriate | The rangelands as commons are directly accessible to remote communities and highly relevant to their work as stewards of natural capital on behalf of the public interest. |
| 3. Participants are part of the decision-making | The existing cohort of land managers are in the saddle in terms of decision-making. How to build natural capital is highly contextual in both time and space. There is only one practical way to engage with the land and that is through on-ground decision makers.<br><br>The key difference with a natural capital commons is that every micro-management action can be optimised to advance natural capital, not service financial debt.<br><br>Land managers are entirely capable of shifting their management goals in exchange for a proper living, and thus there is very little justification for taking management control away from land managers. Given a practical and well-funded set of management goals, land managers will make wise decisions. |
| 4. Monitors are accountable to participants | Monitoring land condition and trend needs to be happening at all scales and much more intensively, largely as a matter of curiosity and learning. The current resource exploitation model requires punitive, contested monitoring. By lowering the absolute amount of extractive pressure, and by removing the opportunity for speculative land management, it could be assumed that a majority of the “free-rider” risks can be dampened, and the need for punitive monitoring likewise lowered.<br><br>Monitoring then becomes part of a larger learning process, observing how the land wants to work, and drawing far more productive connections between those natural tendencies and the demand profile of Australia’s urban centres.<br><br>This challenge (consistent supply of food vs variable natural conditions) could be usefully informed by deep, extensive, and persistent observation and interpretation.<br><br>To Ostrom’s specific concern, the first audience for this data will be the land managers and, through interpreted and aggregated formats, to the general public (who are funding the commons).<br><br>Radical transparency with data is easier to achieve since commercial survival is no longer dependent on competitive games. A land manager’s data-driven narrative is always available through instrumental records and direct observation of the land and management practices. |
| 5. Graduated sanctions are available | Monitors and sensor data should gradually make it more difficult and less rewarding to subvert the ethics of the commons. However, there will always be advantage-seeking individuals looking for free-ride opportunities.<br><br>The range of offences are not clear at this point because of uncertainty around how to define the common pool resource. However, I think it would be |

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| | reasonable to say: “The privilege of managing land on a full public wage is a pretty good gig. The most serious offences should result in a loss of the privilege to manage land.”<br><br>My view is that sanctions need to be worked out in conversation between groups of land managers and sections of the general public who wish to join that conversation. In this way, the land manager and the land “owner” are able to discuss practical and effective sanctions. That conversation should be revisited periodically to ensure there is ongoing trust. |
| 6. Simple conflict resolution | Conflicts in traditional commons were settled on a spectrum of intensity, from a hard word in the field up to appearance before a group of elders or governors.<br><br>In the modern commons it ought to be possible to trial a range of these cultural patterns, supplementing them with technical tools where appropriate. Thanks to the ubiquity of digital communications, there are fewer ways for individual “bad actors” to persist in the system. |
| 7. Self-determination recognised by higher-level authorities | The essence of the rangeland commons is for local custodians to get together and make decisions about how to run the land, arrange for capital works and improvements, and deal with problems. Except in very rare circumstances, the operational activities of primary production in natural capital commons will be decided individually and cooperatively by groups of land managers.<br><br>Where matters cross into local council responsibilities, a proper conversation needs to be convened. Where state and federal regulation still persist (much of it could be shelved), another conversation needs to take place.<br><br>The presumption is that the land manager is the expert on their land or in their custodial context. Higher-level authorities are restricted from giving direct operational undertakings to land managers. The idea is that higher-level goals are to be communicated, discussed, and interpreted through extensive dialogue until workable solutions are agreed all around.<br><br>This avoids nonsensical regulatory gridlocks such as with veg management and reef regulations.<br><br>Local land management is respected formally and is carefully preserved under legal agreement. |
| 8. Nested organisations, local managers at local level | The idea of polycentricity works well with existing arrangements in the rangelands. Under a commons, it would be natural for network facilitators like the regional NRM bodies to take on a much more active role in relationship building and maintenance, translation between scales of specialisation, and monitoring the interconnectedness of actors in the network. |

The interpretations provided in Table 13 are necessarily brief. There is a lot of unknown territory here that requires additional intellectual effort combined with real-world experience. We can find some supporting evidence from related initiatives. Graham Roy Marshall (2019) offers a thorough account of both Elinor and Vincent Ostrom’s ideas deployed in the context of environmental citizenship.

Despite producing a range of arguments that appear to support practical implementation, he concludes guardedly:

> *Our understanding of the metaconstitutional conditions conducive to community-based governance (and its underpinning covenantal practices) in settings of environmental management, and of how to establish and sustain those conditions, is particularly thin. While the corrosive effects of political modernism on these conditions are clear, it is far less clear how these effects might be reversed in contemporary settings such that the prospects of establishing community-based environmental governance, and in turn the environmental citizenship on which it depends, are made more favourable. (Marshall and Malik 2019, p.16)*

The people of the rangelands and the people of the coast are joined together in the challenge to confront the unknowable future. How an Outback Commons could contribute to a better future is unknowable in specific detail: all we can infer are general tendencies.

It is not likely that small-scale family farming will be saved by militant animal-rights activists or spared by the green-washing exercises of industrial producers. The inequalities in farm size and profitability are growing . It will take a lot of changes across the sector to arrive at a position of mutual trust. But trust is really the only feasible path forward (Lush 2018) and it is the ultimate outcome of a properly managed commons.

Our best strategy is to re-form our relations to country and to community using the principles of the commons that Ostrom has found to be durable and effective. Although there are no guarantees, the commons connect us to social solution patterns that have proven successful for human flourishing for a very long time indeed.



*Building the networks of meaning that connect us to one another and the land. Georgetown, QLD.*

# 6: The proper stewards of the commons

## An identity of belonging

Stewardship and custodianship may be new arrivals in the jargon of modern Australian agribusiness, but these concepts have been circulating in the real world for many thousands of years (Kimmerer 2013; Pascoe 2014; Lent and Capra 2017). I have suggested that the current popularity of "stewardship" in forums such as *Queensland Country Life* is driven by the lure of payments for ecosystem services. But this is surely too cynical. There are many land managers whose intentions, above all, are to care for the country they call home. Land managers with this view are already on the path toward naturalisation, becoming part of an identity of belonging.

Stewardship in this deeper sense clearly leads us toward the experience of the First Peoples of this land. As a newcomer, I can only listen, learn and seek to understand some aspects of an Indigenous perspective. I am encouraged by Tyson Yunkaporta's observation that "we are all descended from first peoples from somewhere," (2019) and thus we all share a lineage, carried through cellular memory, to a common culture of identity with "our" land.

Over the course of cultural evolution, my branch of humans detached themselves from the lifeways of Albion and Ierne. They sharpened up the tools of colonial expansion and set forth, powered by a massive cooperation network called capitalism and supercharged by an oil-fired military-industrial complex. I come from a proud tradition of invasive disruptors, much like the haughty, invincible cane toads that dominate my patch of north Queensland today. In years to come, those cane toads will be brought into harmony with the land (Parrott *et al.* 2019), and the land will have been shaped by the toads in some great movement of mysterious reciprocity (Gammage 2012).

It might be helpful now to examine the meaning of “stewardship” in a more indigenous sense, and with particular respect to the principle that the land comes first. This may help build a bridge between the more substantive rights and obligations of a steward or a custodian, and the simple pragmatics that economic arrangements are concerned with.

A person is recognised as a custodian through social agreement. This person has the right and obligation to speak for certain country. In exchange for this custodial privilege, the person is expected to observe, interact, and infer certain intelligences from their country. The custodian’s obligation is to interpret what the country needs in return for the uses that people might want to put it to. This insight is a benefit to the communal group: each custodian becomes a “specialist” who can reliably bridge the ever-changing needs of the group with the ever-changing context of country.

Like all social contracts, there are conditions under which the collection of rights and obligations can be dissolved or modified. Custodians who fail to perform their duties are less valuable to the group and, in time, the group will act to improve the situation to favour public good. (Sutton 2001, p.19).

At this point we can connect the concept of the indigenous custodian to the ideal land manager. This person is profoundly connected with country. This ideal farmer looks deeply into the land and understands it as a living system with an intentionality that demands respect and rewards collaboration, not dominance and alienation. The farmer’s heart and hands serve the land first, through difficult times and easy times. The farmer is bonded mentally, emotionally, and morally to the land they cultivate and care for. There is little, if any, need for regulation, audit, or penalty. In such a relationship, an abundance of natural capital emerges as a frictionless collateral benefit accruing to the group of people in the farmer’s social network (Foley 2019).

Here is the pivotal point: from this enduring, continuously renewing relationship between farmer and land comes the abundance and resilience that we, as a society, are seeking from those people who are given the rights and responsibilities of being custodians of our country.

So, if cultivating natural capital is this straightforward, what is standing between our farmers and their magnificent destinies as our most wise and respected community members? Aside from the brutal logic of the economy, there is quite a lot of cultural cruft and colonial baggage that is preventing us from seeing all the options clearly. But let’s leave that for another day and instead imagine how we might create some narrative devices to cut through the snarls and carry this idea forward.

## An end point for country as private capital

The core of the issue we’re discussing is this:

What is the nature of Australia’s relationship with its primary producers and the land assets they control? If the land assets are considered private property, managed at the absolute discretion of the land holder, then the responsibility for all maintenance and upkeep of the land ought to be borne by the land holder.

Currently, commercial pressures make it nearly impossible to turn a profit while keeping a lid on the weeds and ferals. As long as city-people keep raising their expectations for animal welfare, biodiversity

conservation, better wages, safer conditions, transparent reporting, biosecurity compliance, and higher quality product...well, good luck. That is not a commercial proposition.

The broad conversation to date has been a simplistic push and shove, with primary producers caught between their passion for good land stewardship and the grinding realities of capital debt peppered with demands to meet the rising cost of social license. This untenable situation arises from the premise that agriculture is best delivered through private enterprise, in competition with the neighbours, the bank, the greenies, and the land itself.

As outlined in the modest proposal, perhaps it's time to test the idea of re-socialising agriculture around the formulation of a natural capital commons. To do this we will need a solid narrative that explains the principles of equity and fairness involved.

## What might it mean to socialise the land?

There's nothing particularly strange about a proposal to "socialise" some portion of the rangelands. The heated defence of private tenure misses the point that so little biophysical (and economic) reality respects such legalisms. If a person's goal is to live contentedly on a patch of country, raise children, contribute to their society, and grow wise through good times and bad...none of that actually depends on the legal fiction of a title deed or permanent leasehold issued by the Queensland Government.

Paradoxically, any private security gained by a land title ultimately depends on the fairness and durability of the society that issues the title. An overemphasis on private rights actually diminishes the vigour of the society, and thereby devalues the title. Thus, the way to make the title as valuable as possible is to grow the health and capacity of the society. As society improves, the private title's value technically increases, but in reality it becomes less relevant...greater benefit is provided through the society as a whole than could ever be secured within the confines of a private title.

Australia's lands have been variously managed by public servants and private developers in no particular pattern. For the past 150 years Queensland's pastoral country has been chopped up, aggregated, reserved, covenanted, redrawn and sold off in any number of ways.Various arguments forward at a specific time and place meant some areas fell under one tenure or another: there is no robust planning theory that explains why the patchwork of tenure we currently have is optimal.

### *Title deeds and other anxieties*

The mythos surrounding "the homestead" is far more icon than literal. I suspect that there are very few parcels of land that have actually maintained their cadastral and familial integrity for more than 50 years. We are already a culture that has put "land ownership" at the centre of our triumphal story, yet we don't actually live there very much. The vicissitudes of economic affairs means that the majority of us carry a notional homestead in our hearts, but rarely extend our residential address across generations. Inescapably, the right to financially "own" land implies the ever-present risk of losing that ownership should finances go the other way. Strange that we should peg down something so important to us (the family home, the land we love) on such a flimsy and capricious map.

This inbuilt risk is probably at the core of so much anxiety and anger should any discussion of land ownership be brought forward for discussion. It's as if we know in our hearts that the "legal" ownership

of land is always second to an ethical and lived relationship. We absolutely depend on finance and law to explain our individual right to exclude others from connection to a portion of the earth's surface.

An example of these simmering tensions is the borderline hysterical public reaction to the idea of native title. During the period of the Mabo case, resolute defenders of the colonial project whipped up widespread anxiety that before long the natives would be camping in the backyard. Outrage!

Much has changed since those years, as noted in Behrendt's (Behrendt 2006) account of the Noongar case in Perth. People have come to accept that Native Title is a way to recognise the fact that First People have a lived connection to the land that extends tens of millennia prior to Hammurabi. Indigenous land rights stem from a deeper set of claims than could ever be captured by title deeds scribbled on parchment still wet with the facile deceit of *terra nulliis*.

Despite a gradual acceptance of native title as a reasonable (and largely symbolic) aggravation, there remains a near-absolute gap between the two forms of land rights as practiced in BaU.

The Indigenous perspective on land rights offers a striking contrast to the chronic fear of dispossession experienced by colonials. Under traditional law, land custodianship is more akin to a shared acknowledgement that certain people "belong to" certain country (Graham 1999)...quite the reverse of our fungible titles of land ownership. A person cannot be dispossessed of their country because they do not own it: it owns them. There is a quiet confidence that comes from this relationship: it comes from outside the self, outside the human. To be of country is to be the country.

Ironic then: the culture who simply belongs to country has little anxiety about losing "ownership"...while the culture that asserts its "right to own land" is ridden with anxiety. (Doubly ironic given the "rightful means" by which ownership was "transferred" away from the original indigenous custodians.)

### *Dissolving tenure*

At this point we might return to the tenure stew that BaU has been simmering for us, and ask: what if we just regarded land differently? As if it were another living entity worthy of our regard and love...not something to be owned as a class of economic asset. If we tore up the papers (freehold, permanent leasehold, rolling leasehold, occupational licenses, crown reserves, aboriginal freehold, DOGITs, etc tc), the land would still be there, waiting for a proper conversation with proper stewards. The only things we'd need to sort out are: how to handle our existing financial and social connections to the land; and how to manage rights and responsibilities going forward. What would it mean for the government to own the title but for land managers to retain operational rights via an arrangement within the public commons? As complicated as this might sound, I suspect it may be far simpler than we imagine.

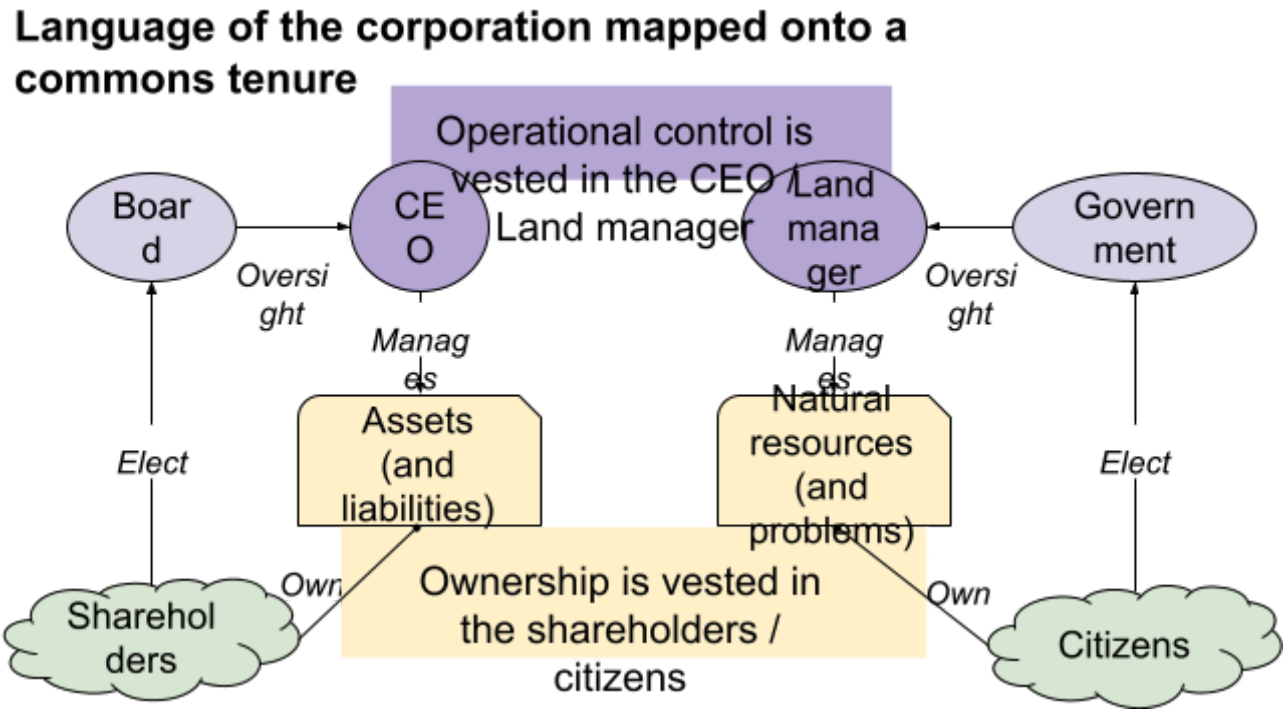
As suggested earlier in the modest proposal, such a transition of tenure ought to cause a very minimum of change to how people go about their businesses, lives, and enjoyments. The structure of social practice is something we all have access to: it is not invented by laws...laws reflect our innate understanding of pro-social and anti-social behaviours. Conversion of tenure and establishment of commons doesn't make it more likely that people will do the wrong thing. In fact, per Ostrom, it is actually more efficient to rely on the power of social convention to deliver functional optimisation of common pool resources.

The commons stands in direct opposition to any movement toward a central authority (ie, centralised government). The world is far too complex and dynamic to be managed by a central authority. Instead, we need a way to install a new ethical foundation that describes our relationship to land, and that might flow naturally from the concept of a commons, and this is where the ideas of subsidiarity and poly-centricity fit in (Ostrom 2009).

## Land managers as CEOs

The relationship between land manager, the land, and the people of Australia is our main concern here, and shifting our minds out of BaU is difficult. Here's a way to diffuse tension arising from the difference between land ownership and land management. Since we're already deploying the language of capital, let's look at the commons through the lens of the classic corporate structure: assets; shareholders; CEO and Board. Now imagine the relationship between the public (all of us citizens of Australia) and the land (which is our common asset) and the CEO (our land manager).

((Figure reference))




So if we're going to debate the concept of "private property" in the context of land stewardship, it might be interesting to overlay these two forms of language.

### *Who owns the company::land?*

It's not the CEO: it is the shareholders. The corporation's assets and liabilities belong to shareholders. In our metaphor, the citizens of Australia are all shareholders in the natural resource base (lands, waters, biota, minerals).

Each shareholder owns a unit proportion of the total natural capital. An individual shareholder doesn't own a specific asset, like this tractor or that office block. They own a fraction of the total value. This fits well with the idea of an integrated ecosystem and the citizens' ultimate ownership of all the value within our sovereign borders.

### *Who knows best how to grow economic::natural capital?*

The CEO. Shareholders are interested in the profitability of the company, but they are far removed from the sprawling, specific, contextual details of daily operation. That's what shareholders pay the CEO to do. The CEO needs to have near total control over how they spend their time, allocate their resources, make tradeoffs, and act according to intuition. The CEO *is the boss*.

The CEO is on site every day, living and breathing the realities of their particular business. The CEO would (or should) know what is best for the company far better than any shareholder.

Now let's translate that to farmers and their relationship to the general public. The citizens "own" the underlying asset, but they entrust the nitty-gritty operation of land management to a group of people called primary producers. Farmers are given the opportunity to act as custodians of public value.

No one tells a CEO how to run their business...no one tells a custodian how to do ceremony on their country...and no one should tell a farmer how to farm their patch of land. So, through the mechanism of the commons, we allow an individual entity to claim certain rights and responsibilities for a specific parcel of country. These land managers must always act to maximise long-term shareholder value, i.e. the public good (which includes production of food for domestic consumption, conservation, cultural amenity, and stewardship of ecosystems).

### *What if a CEO::land manager focuses on short-term profits at the expense of long-term shareholder value?*

Shareholders have developed an entire arsenal of evaluations and assessments that help them unmask the CEOs who are playing games. In the world of primary production, there should be every opportunity for the public to access information about the condition and trend of their assets, as managed by the farmer.

We would not tolerate a CEO who provides misleading growth figures while gutting the company's long-term value...why should we tolerate that sort of process in the landscape? At core, there needs to be acknowledgement that producers are not at liberty to take ill-advised risks with our common property.

A typical assertion is that land managers must be allowed the freedom to use their land as they see fit. The assumption is that any land manger who runs their land too severely will be out of business, therefore, commercial imperatives are the sole instrument needed to deliver proper land management outcomes.

Reality intrudes here. The problem is that primary production is not undertaken as an isolated activity where the crisp rules of competition are uniformly applied. Land can be ruined before the land manager

runs out of capital, mis-guided public programs can keep bad land managers on drip-feed life support for years, and there's always a new player ready to take a punt.

The feedback loops that *should exist* between good land management and a good income are simply not supported in any institutional formalism or cultural norm. I fully agree that good land managers should be well rewarded for their good service. But we need not pretend that the existing BaU model will start delivering that outcome of its own accord.

In my corporate analogy, a CEO can take risks or embark on a restructure that temporarily knocks the company's value down. How much time is needed until the share price rises again? There is no rule or calculation to specify this time...but we all know that at some point either the CEO's strategy bears fruit or they get asked to review their position. In other words, a CEO cannot buy themselves a permanent job: their job is at risk, based on performance, and is subject to social negotiation.

### *Who judges the performance of the CEO::land manager?*

There are a couple of ways in which a CEOs performance is measured, and they are complexly inter-related. We could say that the market puts a value on the company and as that value shifts one way or the other it is largely the CEO who is held to account and has to explain the shift (taking credit or taking responsibility as the case may be).

We can also see that the board looks carefully at the CEO's performance and considers information from a wide range of sources in order to form their opinion.

And of course, the employees and the customers are constantly evaluating the benefit or cost of dealing with the company, which again, routes back to the CEO's leadership and capability.

Our land manager ought to operate under similar scrutiny. Currently, the sole measure of a farmer's performance is their ability to cultivate enough product to keep their bills paid this quarter. That single brutal, simplistic, reductionist measure is the only bar a producer has to clear in order to retain their tenure because the sanctity of private property defends them against any other charge. The mis-applied protections afforded under private property rights are too easily used to shield poor land management or systemic refusals to cooperate toward larger benefits. It is not good enough. Shareholders are looking for CEOs who will build long-term value and are prepared to fire those who aren't delivering. Tenure must be connected to farming practice which must be connected to the growth of natural capital. It's not optional, any more than returning a profit to the shareholders is optional for the CEO.

### *Summary*

This is a very loose analogy, but hopefully it helps to at least pull the discussion of private property and the role of the steward into familiar territory. To be clear, there are a lot of unknowns in the Outback Commons proposal. So here's a summary of key outcomes I think a commons would help us achieve:

- Land managers are able to be even more dedicated stewards of the land than they already are.
- No one is telling farmers what to do, except where they take actions that breach the trust of stewardship with the public.

- What constitutes a “breach of trust” ought to be managed through any number of ancient, social, and human-scale mechanisms of governance that have been adapted for the commons.
- There are far more reasons to cooperate with the neighbours than there are to compete. Where competition is appropriate, it should deliver win-win relationships and deepen the shared wealth of the community.
- There is minimal incentive for operational profits and there is no incentive at all for land speculation.
- There is far more support and incentive to engage with country on its own terms, in reciprocity.
- The overarching “goal” for producers is to deliver a self-sufficiency of healthy food and fibre to the people of Australia while continuously adapting and reinvesting in natural capital.

A central concern of land managers is that they do not wish to be told what to do by a remote authority. The simplistic refuge is private ownership: if I own the land and the business, no one can tell me what to do...it’s my money on the line so I should have maximum discretion to seek my fortune at my own personal risk.

But, for the many reasons discussed to this point, it is clear that stewardship of the land necessarily involves putting oneself into the service of others. In the commons arrangement proposed here, the land manager must perform the dual role that a CEO is expected to perform. On the one hand a CEO is the captain of their own ship: their control and authority is (nearly) total. But the CEO is also in service to the shareholders, the Board, and the customers.

In our Outback Commons, the land manager has the highest authority on the land they are working, while simultaneously remaining attentive to the direction of the Government and the expectations of the citizens. And in exchange for providing this essential public service, the people of Australia are prepared to pay land managers properly.



*Temporary fencing to re-establish native grasses for threatened species on over-grazed country. Kowanyama Rangers (Photo: Mitchell River watershed Management Group)*

# 7: Routing around the blockers

We have examined the metaphor of natural capital, explored what it means to be a proper steward of country, and assessed the utility of private land ownership on the rangelands. I have floated a notional price for a worthy stewardship payment and proposed a commons for the outback. Now it's time to confront the barriers standing in the way of radical, positive change.

The rangelands can be defined by significant "deficiencies": low population (low political weight); sparse economies (low diversity); and meagre landscapes (inherent scarcity and brittleness). These limitations have been thoroughly examined, especially in the past 30 years as researchers and policy makers face increasing pressure to come up with models and strategies that will be of better service in decades ahead. Amongst these efforts, the work of Mark Stafford-Smith and his colleagues at the Desert Knowledge CRC (and later through a CSIRO Flagship programme) deserves particular mention. Stafford-Smith continues to assemble research and provide original insights that could precipitate the shift to a "Modern Outback" (Traill and Stafford-Smith 2020).

There are contemporary examples of land managers achieving a remarkable level of success with natural capital, largely through a collection of practices called "regenerative agriculture". Charles Massy has assembled an inspiring collection of these stories of transformation in the *Call of the Reed Warbler* (2017). But these few bright points reveal just how poorly things are going for others.

Many land managers are forced to keep a very close eye on the finances. They may want to spell a bit longer or they might be worried to see rubber bush coming up in a hard-grazed paddock, but unless there's some liquidity in the accounts, it will be difficult to spend the money. And there are no words to describe the frustration of watching problems jump across the paddock fence from the neighbour's

place. No one can pay out of their own pocket to manage the national park next door, or tackle the weeds coming out of someone else's carbon project, or even afford to fix up those erosion gullies that are bothering the Council-maintained road.

Even where there are local successes, the major influences on the land and people come from systemic processes that are far outside the direct control of rangelands people. When these processes are adverse to the goals of an abundant and resilient modern outback, they are blockers. They are especially pernicious because they are upstream, so to speak. We can do everything we like locally, but until conditions change at the headwaters, we're going to continue dealing with the rubbish down here.

In this chapter I will offer comments on three "global blockers" that have a direct and daily influence on the rangelands, but which demand transformational change at far larger scales. The fact that these blockers operate outside the scale of the rangelands should not deter us from making a start locally. It simply means that we should be realistic about our expectations of one another. We have immense challenges in front of us: these are far bigger than many of the incidental disagreements we manage to spend so much time on.

The Declaration suggests that we need to:

> *Celebrate our common agreement on the biological, cultural, and economic necessity of a flourishing, populous, and life-affirming outback, while minimising attachment to outdated ideologies that only serve to separate people from one another.(Declaration 2019)*

With this as a basic agreement, a statement of shared purpose, let's look in some detail at what is holding us back.

## Money: debt and the crisis of capitalism

Nothing moves without cash, so we need to start our conversation by looking at how money and capital have shaped the ecological and social realities of the rangelands. We'll be following the money and looking for new ideas about how to make the economy function as a driver of positive change. If we are to find a better way into the future, we need to examine the big picture of modern capitalism and Australian fiscal policy, especially in the rural sector.

### *Why question debt and capitalism?*

Debt and capitalism may seem beyond the limits of our rangelands conversation, but my instinct is that there are two direct benefits to this wider examination.

First, by getting a sense of how capitalism is affecting all of us (globally) we can better assess the specific positive actions we can take locally. For example, unless we gain some sense of the importance of Australia's macroeconomic policies to the rural sector (Rees 2019), we will continue to vote for policies that benefit a very narrow sector of society but disadvantage both rural and urban populations. Understanding these larger dynamics thus gives us new ways to make common cause with non-rangelands interests, thus broadening the base of people who are calling for change to (eg) neoliberal policies.

Second, it is profoundly important for people in a civilisation to “pull back the curtain” from time to time, and re-acquaint themselves with the machinery that keeps us wired together through the reinforcement of culture, politics, the economy, science, and belief. This is the domain of laws, rules, and the power of a good story.

For the most part, the social machinery in Australia has served people well, despite some spectacular exceptions. Can’t we keep on going? Unfortunately there are some very real stresses emerging in the big, foundational assumptions that capitalism depends on. In milder forms these stresses could manifest as partial collapse of the world’s trading regimes, erratic access to finance, and fluctuating currency. In more extreme forms there could be extended periods during which the “central services” of governance and supply chain logistics are virtually inoperable (Gutteridge 2020). Perhaps there are some ideas here that will precipitate a re-prioritisation toward local self-sufficiency instead of the conventional preoccupation with economic growth and capital returns on finance.

### *Capitalism as an idea*

Capitalism is a term we use to understand a broad range of activities, so it can be tricky to wade into these waters. One of the central ideas of finance is that money can be put to work. So if someone “owns” a stack of money, they can choose some sort of activity for that money with the expectation that, at some point in the future, their pile of cash will be returned along with a bit extra. Putting money to work can take two basic forms. Here are the thumbnails:

A young woman may be given an inheritance, decide to buy a veterinary practice, build up the client base, and then sell the business 5 years later for a healthy profit. We think of this as a typical small-business scenario.

The young woman may instead decide to simply “rent” a pile of her cash to someone else and receive regular repayments of principal and interest. If the returns are large enough, she could move to the Gold Coast and fossick for canny real estate deals. This is closer to pure capitalism: the nurturing of stocks of capital with the intent of growing that capital, independent of the activity.

There has been nothing particularly special about this situation for most of the last few thousand years, and most of us would agree that the benefits of free-moving capital are self-evident. However, something has changed, especially in the past 50 years. In the span of a handful of decades, capital has un-moored itself from its utilitarian purposes and become a product in its own right. In *End of Alchemy*, Mervyn King explains how the explosion of financial “products” and the relaxation of regulation has meant that money has multiplied in the financial sector, quite detached from the “real economy” of goods and services.

The total value of financial “products bought and sold in the financial market has gone from 20% in 1970 to over 100% (!!) a mere 35 years later (2016, chap.3). While most of this “digital money” flows between investment banks in an unseen daily torrent of high-speed trading, the volume is so large that, inevitably, stresses in that system can bleed over into the real economy and cost real people enormous hardships, such as in the 2007-08 financial crisis. And these ‘spillover events” are going to get much worse. Capitalism is enmeshed in a supercharged feedback loop, and we’re on the edge of frying ourselves before we realise just how different affairs are compared to just a few decades back. To

understand where things seem to have gone wrong, we'll need to take another step back and examine the nature of "money".

### *Credit and debt are first: money is a distant second*

Money is everywhere. From our system of justice to caring for the elderly, our world has been thoroughly monetised. But it has not always been so. In fact, this money-saturated version of daily life is quite a recent phenomenon, and that is the point of listing it as our first challenge. We need to reclaim our capacity to operate human-scale cultures that are not dependent on mediation through currency.

How did we get here? The anthropologist and social activist David Graeber (1961-2020) writes convincingly in *Debt: the first 5000 Years* (2011) that most of us have received an upside-down version of the story of money. In the traditional telling, we understand money as serving three functions: a means of exchange, a way to store value, and a unit of account. The invention of money happened (so we are told) because prior to money there was only barter. And barter has a lot of drawbacks and inconveniences, so money arose naturally as a way to improve on the barter system.

The problem with this story is that there is no historical evidence that people used to run complex communities on a barter system (Mitchell 1913; Wray 2004). And there is lots of evidence that people found other ways to exchange goods, store value, and keep accounts *without* the use of money (Graeber 2011).

The alternate story is refreshingly alive: prior to money the world's peoples cooperated in what Graeber calls "human economies" (2011). While it might sound strange, a moment's reflection will show just how full our lives are with debts and credits to one another. More properly thought of as obligations and gratitudes. We are a social species and exchanging value with one another is a pretty good definition of social (Aronson 2004).

The human economy was remarkably scalable and robust. Something like a system of exchanges and a tally of accounts powered our ancestors all the way up to Sumeria (about 5,000 years ago) where the use of "money" seems to first get a showing. But even here money was a matter of accounting convenience, not necessity. It was used by bureaucrats for settling affairs of the State. Ordinary people still made exchanges and kept accounts that allowed them to farm, fall in love, raise a flock, drink beer, tell stories, and break bread without any particular need for money. In fact, right up to very recently, money (currency) was far less important than we might think (Eisenstein 2011).

Imagine being able to live a full human life without money? Inconceivable, yes? But it's a fact.

Money has been virtually irrelevant to the formation, expansion, and tremendous creativity of human civilisations. For better and worse the Greeks, Romans, Islamic states, the Zhou Dynasty, the Aztecs, Hopi and Harappan cities all managed to grow and elaborate without a standardised (and enforced) usage of currency. Most of humanity's intellectual and spiritual evolution somehow managed to flourish without money. The Upanishads, Homer's Iliad, Da Vinci's helicopter, the Enlightenment, and even Napoleon managed to get by pretty well in times when the modern concept of money was nearly irrelevant as a  form of exchange amongst the citizens. True, by Napoleon's time money had come to play a much bigger role in the affairs of "state", by which I mean the entwined interests of large landholders, financiers, political figures, the church, the military, and the rising class of industrialists.

But the state relies on money in a very different way to how you and I deal with money. This distinction is critical for our understanding of natural capital's potential to deliver the goods.

Our forebears relied on human-scale, embedded customs that provided the essential services of civilisation. Most wealth was managed through intricate communal arrangements. This makes intuitive sense. For hundreds of thousands of years we have practiced and refined the cultural stories that mitigate against too much self-interest (greed) and which support the wise balance of personal vs collective requirements for a healthy and satisfying life.

I bring this up merely to remind ourselves that, unlike the modern idea of money and capitalism, human-centric patterns of value exchange are not only possible, they are practical, powerful, and have the advantage of being road-tested for thousands of years. These alternatives are characterised by a vast range of methods for accounting (settling credit and debt), for exchange (gift economies) and for storing value (natural, social, and cultural capital).

### *Global inequality: capitalism off the rails*

So what is the modern problem we are dealing with? Why is it different to previous eras? I think it is a coincidence of technological progress and ideological simplification. The current predominance of European technology and ideology has been examined widely and critically (Harari 2011; Diamond 2013; Lent and Capra 2017) but I wish to draw out just two elements that seem especially relevant to our discussion here: the ubitquity of computer-based communications systems and the unrestrained hegemony of finance.

The foundational texts that define our ideas of economics were written long before the advent of a world wired together and in constant contact 24x7 at the speed of light. Even at the post-war formation of the Bretton Woods institutions (1944), very few thinkers were imagining a world where the simplistic process of currency exchange arbitrage would provide an incentive for exercising some of humanity's most impressive industrial projects (transoceanic cables, fiber-optics, and microwave). Add to this the leveraging of artificial intelligence in high-speed trading algorithms and we start to see a world of finance that is so far beyond Bretton Woods as to be incomprehensible.

And yet our political and cultural norms still bind us to simpleton stories such as "kitchen table economics" (Thatcher 1987) and "COVID-19 recovery will saddle us with a generation of debt" (pick a pollie: they are all saying the same thing).

The fact is that capital has been concentrated to eye-watering levels, particularly in the United States where the big story of the global economy is centred. A tiny number of individuals, their families, and their apparatus of corporate familiars control a vast proportion of the world's financial wealth. Really.

This unbalanced situation has a direct impact on all of us due to the way in which concentrated capital tends to bend the rules of reality to suit its own needs (Gilens and Page 2014; Harari 2016; Booth 2020) The disjoin between our socially-constructed norms and the actual realities of the financial world means that, in our civil discourse, we are increasingly barking at the wrong shadows. Whatever your view of the urgency of climate change, populism, and ecological collapse, we can probably agree that our various agendas for change could be far more focussed and effective if it weren't for the distorting effects of capital acting in its own self-interest.

The tendency for living organisms to identify a winning formula and then reinforce it is called “homeostasis”. Do something, get reward, figure out how to repeat the process. We all do it. Now imagine the world of finance trying to figure out how to service the demand for capital return: bend a law, influence a policymaker, control the media...repeat. Now multiply by several trillion to estimate the scale of influence. In such conditions we can imagine it would be very difficult to get a clear view of any alternatives.

Economic historian Dirk Philipsen uses a long-term perspective to place the problem with modern capitalism. Whatever capitalism claimed as an advantage, it has now turned into dangerous oppression. The pendulum has swung too far, but we don’t seem to be ready to admit it. The proposition of capitalism has far over-reached its potential to prepare us for a future that, ironically, it is simultaneously making less predictable and more dangerous:

> *Whatever might have been justified in the past to overcome poverty and scarcity no longer holds sway. Today, we face an entirely different challenge. Not too little, but too much. Not scarcity, but abundance.*
>
> *In the modern world, more is actually less. Indeed, the costs of economic growth have begun to outpace their benefits, visible in the plunder of the environment and escalating inequality. We no longer need more, but rather better and more fairly distributed, in order to provide prosperity for all. Collectively, we produce and grow enough for every child, woman and man to have a good and dignified life wherever they live. As a world community, we know more and create more than we know how to process. It’s a huge accomplishment. We should celebrate and enjoy it together, rather than remain on the deplorable path of pitting one against the other in the race for ever more, one dying of too much, the other of too little.*
>
> *And yet, our dominant economic systems continue to follow colonial extraction and brutal exclusion, in the process creating two organically related, existential problems: the perpetuation (and in some cases intensification) of poverty, and the violation of the biophysical limits of our planet. What a tragic irony that, in the early 21st century, higher education’s economics departments worldwide still instruct some of our brightest minds in simplistic economic models about the efficient allocation of scarce resources, rather than in how to sustainably build the good life based on an abundance of knowledge and resources*.(Philipsen 2020)

So is the complaint that a bunch of sociopathic elites are ruining the world? If only the common people were able to rise up, all would be good? It’s not really that simple, of course, and history has shown us that similar patterns of “unbalance” tend to arise regularly. The key is to understand this as a meta pattern and then take the necessary cultural steps to compensate. In one Indigenous example, the nature of emu is to cause havoc through an overblown sense of self-importance. The kangaroo, turtle, and echidna must  cooperate to keep emu’s nature balanced, and this ongoing cautionary story is written into the arrangement of the stars we can look at every night (Yunkaporta 2019).

In this formulation, emu is not set on the guillotine, or purged, or branded and debased. We all can be emu from time to time. None of us know how to avoid an emu moment. So probably best not to develop a political theory that begins by pitting evil overlords against the virtuous poor, no matter how tempting it may be.

### *Natural tendencies, predictable problems*

The extreme disparity of wealth distribution causes all sorts of theories of elites, conspiracy stories, and divisive “othering” to arise (Rosenthal 2016). While most of these accounts share some element of truth, I was intrigued recently to read a paper that finds a similar tendency toward massive inequality in nature. The full paper is a fascinating read, but the abstract alone tells the story:

> *Most societies are economically dominated by a small elite, and similarly, natural communities are typically dominated by a small fraction of the species. Here we reveal a strong similarity between patterns of inequality in nature and society, hinting at fundamental unifying mechanisms. We show that chance alone will drive 1% or less of the community to dominate 50% of all resources in situations where gains and losses are multiplicative, as in returns on assets or growth rates of populations. Key mechanisms that counteract such hyperdominance include natural enemies in nature and wealth-equalizing institutions in society. However, historical research of European developments over the past millennium suggests that such institutions become ineffective in times of societal upscaling. A corollary is that in a globalizing world, wealth will inevitably be appropriated by a very small fraction of the population unless effective wealth-equalizing institutions emerge at the global level.* (Scheffer *et al.* 2017)

The researchers note that complex system dynamics typically give rise to such hyper-concentrations, and indeed we understand the occurrence of other strange attractors, like black holes, to be a normal part of the universe.

I am certainly no apologist for the “elites.” Their historical record is appalling and our current crises have much to do with their influence (Gutteridge 2020). However, I think there is an opportunity here to re-engage with the problem of concentrated wealth as a mere structural issue. The wealthy (in many cases) are no more responsible for their great estates than the dispossessed are responsible for their impoverishment. Randomness and complex system dynamics offer a much less morally-laden explanation. Thus, we can park some of the vengeful fury at the door and get on with the job of fixing the situation with pragmatic engineering. Inevitably some heads will roll, but I’m certain there is a more compassionate and productive path forward than the guillotine.

This is precisely the approach taken by capitalism's greatest chronicler, Thomas Piketty. Combining forensic historical research with rigorous statistical clarity, Piketty unleashed his *Capital in the 21st Century* (2014) as a sober and urgent call for capitalists to take stock of their situation and commit to a program of institutional change. There is little evidence that Piketty’s advice is being heeded.

## Inertia: institutional and individual lock-in

Any program of transformational change faces the problem of how to loosen up the myriad of obligations and commitments that anchor us to BaU. Whether it's 5 year contracts to deliver beef or 4 year political terms or simply hanging in there for another couple of years till the kids get through school, we are all reluctant to step into an unknown future. So we all seek to “lock-in” as much of tomorrow as possible.

This stability comes at a price. We lose our ability to shift and change directions, trapped by (for example) “sunk-cost effects” (Janssen and Scheffer 2004). The global financial crisis of 2007-08

provides a spectacular example of such institutional inertia, recounted with forensic insight by Mervyn King (2016). Even when external factors obviously demand big changes, we find it difficult to respond, leaving us stewing in a pot that's getting hotter.

Considering the overwhelming dominance of the capital economy, it would be fair to say our culture expresses a monocrop of the mind. People tend to think in overly simplistic terms because their world has become simplified.

When asked to consider the vast range of factors that contribute to the complexity of modern farming, one of the participants in the Talking 2030 "visioning" exercise undertaken by the National Farmers Federation (2019a) noted:

*Politicisation of environmental laws presents an ever-present risk for our business. We need a genuine partnership approach between all parties to restore stability.*

The quote is just a vox-pop grab and should not be read too deeply, I suppose. But actually, that is exactly how the quote is deployed: as a pithy headline that signals a whole raft of self-serving assertions. The idea that laws ought to define our relationship with the environment is unchallenged. The apparent goal is to take politics (ie, the capacity of citizens to engage with the continuous negotiation of shared benefit) out of consideration so that uncertainty is removed from the process of running a business.

By highlighting this farmer's partial view, the NFF fails to challenge its members to develop a more robust set of operating principles. NFF members are not encouraged to grasp the inevitability of change, the desirability of an active politics, or the idea that farming is more than a business proposition. NFF members are able to stay cocooned in a comfortable set of complaints in the hope that "someone else" around the table is prepared to change and accommodate. But the whole table is thinking the same way, all waiting for the other person to shift.

Is it possible to muster sufficient resolve to reach a critical threshold that will precipitate change in a fair, intelligent, and rapid manner? That's not easy to answer, and probably depends a fair bit on your personal disposition. In an article by one of the era's more eclectic tech visionaries, Vinay Gupta, the odds of a deliberate, humane, and global shift away from business-as-usual are set at near-zero. Here he starts with the challenge of change in response to climate change:

> *Climate change, for the elites, is a mass of big personal risks that they have taken, all detonating one after another. Everyone is a day late and a dollar short, and the whole mess unravels.*
>
> *A sensible oil policy, sure, the government can do that on paper: but as the oil companies contract, the power players running that scene take their foot off the scandal pipeline, and a whole new set of bad news starts to pump down that pipeline, into the ear of a brave journalist who is willing to publish.*
>
> *Because, you know, those oil guys, they have to make living too, and if they had your back in Iraq, and you're turning on them now… well obviously this is a fundamental matter of quid-pro-quos being violated. And there are always more chips on the table than cash to back the chips. The elites live highly leveraged lives, personally, politically, and economically because over-all, in the good times, risk is good. The more risks you take, the faster you climb the ladder. Power is the ability to suppress downside risks: when something goes wrong, you know you will be protected.*

> *So you pile on the risk, and attain the meteoric rise.*
>
> *The elites cannot climb down without tearing each-other to pieces. They've been fighting climate change awareness, starting futile wars, and looting the treasury with bailouts because a climbdown will start civil war among the elites as their promises to each-other can no longer be kept, and the political exchange of quid-pro-quos collapse.*
>
> *And this is why the elites are stuck in place, unable to face reality. They've concentrated so much personal risk into their positions that if the system as a whole has to be cooled and basic needs reprioritized, their entire house of cards will come down.*(Gupta 2020)

This is an especially discouraging picture for those who place their faith in various elites to act as vanguards of good policy decisions. These immensely powerful people turn out to be immensely constrained. Lock-in tends to bite harder the higher you rise.

That implies that those of us closer to ground level probably have a lot more actual freedom to imagine more positive futures, to contemplate deeper change, and to give voice to our views in public. Facebook and Twitter are puzzling phenomena, but in my mind's eye there is a picture of the more human-scale expression of the "voice of the people" as encountered across the kitchen table, at the feed store, and in other direct forms of social exchange. With our huge freedoms and tiny reservoirs of individual power we go about the business of being human, continuously reshaping culture and being shaped by it. Discomfort arises in the critique and defence of patterned behaviour. Moral psychologist Jordan Peterson describes this interplay and the consequences of accepting the need to change:

> *We tell ourselves stories about who we are, where we would like to be, and how we are going to get there. These stories regulate our emotions, by determining the significance of all the things we encounter and all the events we experience. We regard things that get us on our way as positive, things that impede our progress as negative, and things that do neither as irrelevant. Most things are irrelevant--and that is a good thing, as we have limited attentional resources.*
>
> *Inconveniences interfere with our plans. We do not like inconveniences, and will avoid dealing with them. Nonetheless, they occur commonly--so commonly in fact, that they might be regarded as an integral, predictable, and constant feature of the human environment. We have adapted to this feature--have the intrinsic resources to cope with the inconveniences. We benefit, become stronger in doing so.*
>
> *Ignored inconveniences accumulate, rather than disappear. When they accumulate in sufficient numbers, they produce a catastrophe--a self-induced catastrophe, to be sure, but one that may be indistinguishable from an "act of God." Inconveniences interfere with the integrity of our plans--so we tend to pretend that they are not there. Catastrophes, by contrast, interfere with the integrity of our whole stories, and massively dysregulate our emotions. By their nature, they are harder to ignore--although that does not stop us from trying to do so.*
>
> *Inconveniences are common; unfortunately so are catastrophes--self-induced and otherwise. We are adapted to catastrophes, like inconveniences, as constant environmental features. We can resolve catastrophe, just as we can cope with inconvenience--although at a higher cost. As a*

> *consequence of this adaptation, this capacity for resolution, catastrophe can rejuvenate. It can also destroy.*
>
> *The more ignored inconveniences in a given catastrophe, the more likely it will destroy*. (Peterson 1999, page 21)

>>> The challenge for the urban mind is that it has not recognised the need to shift our patterns of economic behaviour, so they instead continuously reinforce the patterns that were appropriate in an "empty" world of far fewer people. Herman Daly draws the big picture this way:

> *Economic logic requires that we maximize the productivity of the limiting factor in the short run, and invest in increasing its supply in the long run. When the limiting factor changes, then behavior that used to be economic becomes uneconomic. Economic logic remains the same, but the pattern of scarcity in the world changes, with the result that behavior must change if it is to remain economic. Instead of maximizing returns to and investing in man-made capital (as was appropriate in an empty world), we must now maximize returns to and invest in natural capital (as is appropriate in a full world). This is not "new economics," but new behavior consistent with "old economics" in a world with a new pattern of scarcity*. (cited in Jansson 1994, p.24)

## *Simultaneous policy and swift water teamwork*

A reasonable person might wonder why, in today's modern world, it seems so hard for us to make basic changes aimed at self-preservation. According to Peterson there is a natural tendency to shy away from change, and according to Gupta the very nature of power implies a stability in the rules of the game. In such a situation, what tools might assist? There is at least one metaphor and one theory proposal that could help.

The theory comes from John Bunzl who, in conversation with Satish Kumar, came up with the notion of "simultaneous policy" (2001). First, here's his characterisation of the problem:

> *The principal barrier to implementation of any significant measure to improve today's environmental, economic or social problems, be they in advanced, developing or non-industrialised countries, is destructive competition. Global de-regulated capital flows and corporations know no national boundaries and, by their ability or threat to move elsewhere, force nations to compete with one another for capital, jobs (and therefore votes) and ever scarcer natural resources.*(p1)

This accords with earlier discussions on the dominance of capital strategies over all other concerns, even threats to humanity's continued existence, but the particular point drawn out here is the way in which nation-states are powerless due to their own limits of authority. Bunzl's insight is that if policy changes were introduced all at the same time, there would be no opportunity for trans-national capital interests to create destructive competition between states.

This insight can be deployed to resolve problems at any scale. In fact it's really just a restatement of the value of cooperation in the context of a commons. Once all of the affected parties are brought into the conversation and everyone has developed a sense of the shared risks (of going it alone or in an uncoordinated fashion), then we all agree to take the next steps together.



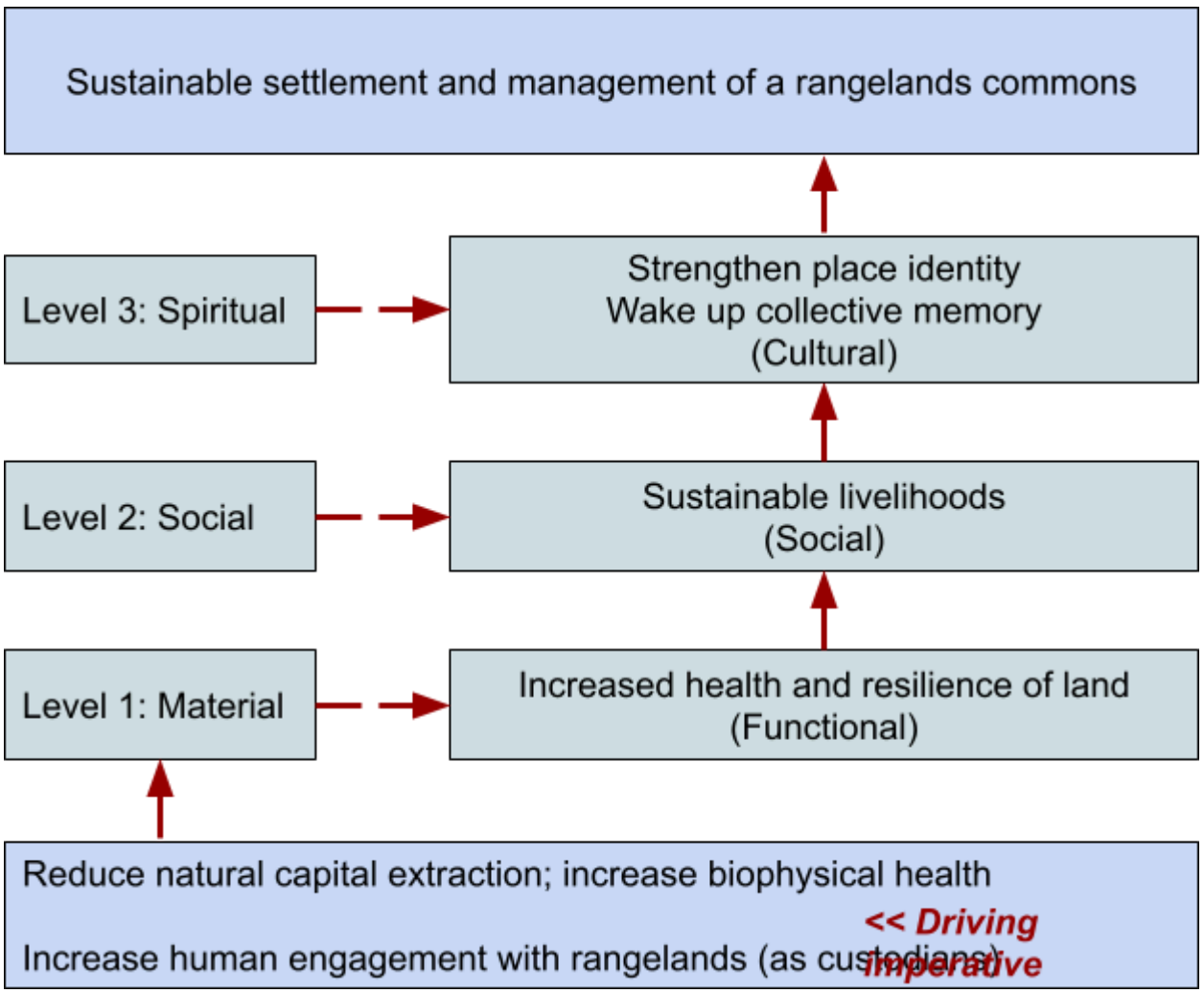
To bring it right down to the local, we're probably all familiar with swift water strategy where it is impossible for any one individual to safely cross a flooded creek. We organise into a scrum, and then start walking, each person in turn taking one step, calling it out when their footing is solid, and then the next in turn. Works a treat.

### *A simple theory of change*

A good theory of change, in my mind, is a sort of spiral with no dependent starting points--no chicken-egg problems--the whole picture pulls the whole picture along. But this can be challenging to effect in the real world so I wanted to present a reasonably structured theory of change that could unblock the lock-in problem.

The following is based on a 3-level classification of values (per Huxley, (Gao and Wu 2017)) and is reasonably linear.

Figure 1 *Classification of values in a natural capital theory of change*



Unless we occasionally re-examine these foundations, we can find ourselves “chained” to an idea. Like the poor elephants who are restrained during infancy with unbreakable leg chains, and then for the rest of their lives can be “secured” with a small piece of rope, easily breakable by an adult elephant, but effective because they *believe themselves to be shackled*.

These conversations aim to test the reality of our current norms with respect to debt and capitalism, showing just how much of an illusion these concepts are. Because these ideas are so far outside the mainstream it is probably best to think of them (firstly) as an agenda for personal transformation.

### *Re-deploying social license*

A further strategy would be to explore the potential of social license to serve a broader set or causes. For example, I highly recommend that we extend the social license critique to finance speculation. Finance speculation is the activity of hedging and betting on pure financial instruments like currency exchange rates,  derivatives, and synthetic instruments. Unlike trade in real goods and services, financial transactions can be conducted entirely within the realm of a couple of computer algorithms...no humans involved. Although these purely imaginary inventions ought not to disturb our peace, they manage to cause a heck of an uproar back here in reality (Dyer 2020).

It has been estimated that the value of financial transactions annually is 73 times greater than the world’s GDP. These speculative transactions involve a tiny fraction of the world’s population, but their gambling parties involve playing with unimaginable quantities of currency. While they are jockeying for microsecond advantages with their souped-up trading algorithms, our public servants and businesses are trying to conduct public works and ordinary trade in the real economy.

The private occupations of financiers can often have dreadful consequences for society, causing instability that is deeply harmful to many people. Why shouldn’t we demand that wealth advisors, financial advisors, and other speculators be forced to earn a social license to operate? We no longer tolerate the prerogative of mining companies to dump their toxic sludge in our estuaries...why do we tolerate financial speculators who dump their burst bubbles into the routine economies we depend on for daily needs?

When social license is properly used it is a valuable tool for coordinating behaviour toward increasing public good. This deeper understanding of social license stems from the ancient idea of “right livelihoods,” encoded by Buddha, who:

> *… encouraged (everyone) to engage in compassionate activity, and to make their living in a way that does not cause harm and that is ethically positive.*
>
> *Given that almost everyone’s life includes an economic dimension, work and career need to be integrated into life .... Most of us spend the majority of our waking lives at work, so it’s important to assess how our work affects our mind and heart. How can work become meaningful? How can it be a support not a hindrance to spiritual practice — a place to deepen our awareness and kindness? (TBC 2020)*

Under this definition, it becomes clear that we have a personal responsibility to examine the means of our own economic viability. This reflection extends outwards to the social dimension where we form discrimination as groups. Is capital speculation on aged care facilities “right livelihood”? How about a

tax specialist working for a mining company? Social license can be a form of cultural self-discipline. There's a lot of upside potential here.

### *Who's in charge? The state of the state*

How will the many various forms and motivations for natural capital and ecosystem services be brought together into some sort of coherence? Apart from the uncertainty of how the principles are to be applied, there is the practical problem of coordinating reporting and verification across the country and across various production systems. This is an especially pertinent question where natural capital effort might be funded from philanthropic sources or corporates pursuing social responsibility goals...or even industry schemes that aim to provide some self-certification. Private conversations with industry leaders have revealed deep concerns that the laissez faire approach in Australia could lead to quite perverse consequences.

For example, if the big commercial banks develop their own systems for evaluating natural capital management practices, offering preferential financing to producers who meet their criteria, what happens if a producer decides to switch banks? Would there be some inter-bank recognition of different natcap schemes? Or would the producer lose the advantage of their work to comply with Bank A's scheme should they move to Bank B. This could be a real cost, and could mean finance lock-in. It seems unlikely that banks would both develop their own "competitive" natcap financing package *and* make it easy for producers to be recognised across any bank's scheme.

It's not that these challenges cannot be overcome, but it is certainly true that, as various workarounds and exception-handling is put in place, the overall efficiency of the natural capital proposition declines. Compliance and verification paperworks adds up, the economic benefit gets thin.

At this point it is worth considering a rather wonderful contribution to this space, mentioned earlier: Dieter Helm's *Green and Prosperous Land: A blueprint for rescuing the British countryside* (2019). Helm is an economist, and comes from proper British farming stock, a great combination and certainly the sort of dual-intelligence that is needed at the moment. When he accepted the post of Independent Chair of the Natural Capital Commission (2012) the public conversation around natural capital in the UK got a big boost. *Green and Prosperous Land* presents his enthusiastic vision for the future.

Helm's book is laid out in three sections:  The Prize, what we can hope for if we do things differently and get it right; how to build a Greener Economy; and, Planning and Funding the approach.

He is no apologist for agriculture. He does not pull punches in his assessment of the impacts of primary production. It is telling that his book sets out to rescue the British *countryside*, not British *agriculture*. I think this is a carefully intentioned decision that sets natural capital in precedence of the human-constructed economy, in the sense of Herman Daly's quip: "the economy is a wholly-owned subsidiary of the environment." However, as an economist, Helm is very conscious of the value of economic capital. In fact, most of the book details how uneconomic business-as-usual actually is, once its real impacts are accounted for. This "saving the natural world by saving money" is familiar from Lovins' arguments mentioned previously.

Helm also lends support to the idea that firms ought to be charged for access to natural resources, echoing similar recommendations from Eisenstein (2011). The idea is that by giving virtually free

access to (potentially) renewable natural resources but charging firms a tax on profit, the public assets (the commons) will always suffer and there will be limited mechanisms to address the run-down of extractive operations. Taxing access to clean water, good soils, timber, fisheries, and pastures puts the incentive for conservative consumption back into "the market", rewarding sparing utilisation. Likewise, he supports a polluter pays principle to help close that impost on the commons. Finally, there needs to be a central vision that coordinates many smaller scale plans into a biophysically and socially integrated whole. The UK's *25 Year Environment Plan* goes some way to achieving that.

These policies will need administration and a considerable amount of monitoring, interpreting, and baselining. New models need to be constructed in order to test prioritisation of investment, and a new body of enforcement procedures need to be created.

There is much about Helm's vision to appreciate. I particularly enjoy the emphasis he places on connections to the heart, to the spiritual dimensions of the lives we co-create in our civilisations. I also appreciate his matter-of-fact positioning of humans as active and rightful beings: we have been working the land for a very long time. The proper way forward is not about abandoning the land, as if the highest good would be served by an absence of humans. No. Like Yunkaporta, Helm positions us as a "custodial species" (2019) with an important job to do.

The cautionary note here is that the British countryside is vastly different to the Queensland rangelands. This is true at a biophysical level, cultural level, and institutional level. Helm's proposals require an enormous amount of state intervention and coordination. For the most part he is still arguing from within normative institutional roles. He does discuss opening up certain aspects of ecosystems services delivery to market tender, but even here it would require huge amounts of effort to tag and track all the possible variables in an ecosystem in order to defend a given valuation (ca. Land Restoration Fund). It is the usual constraint of reductionist and deterministic "mechanical mind" .

There are a good many Australian rural commentators who support Helm's vision. I'm not sure they fully realise how "statist" or centrally controlled such a system needs to be. A glance at the "menu" on offer (https://www.gov.uk/countryside-stewardship-grants) to farmers at Natural England is exciting at first glance ("I can get paid to do all this??"), but the reality of government administration soon sets in. As just one sample of these realities from a producer's perspective, consider the frank comment offered by Harry Broadbent-Combe of Batcheller Monkhouse: "*...Natural England have simply created a scheme which is far too complicated for them to effectively administer; particularly given the extensive cuts to their budget, lack of officers on the ground, and the additional complications created by the Rural Payment Agency's problematic program of mapping updates.*" (2016)

There may be more loosely connected ways to achieve similar goals. But we'll need to shed a fair bit of our habitual limitations to get there!

## Media: the absence of discourse in a fake news world

In order to progress our reflections on the first two blockers we need to be able to have conversations across the dinner table and across the public sphere. But there are fewer and fewer opportunities to conduct such genuine discussions even though it seems like we swim through a torrent of cheap and easy mass communications options. How is it that we are finding it increasingly difficult to find a space for civic conversation that serves us well?

## *A single story, a monocrop of the mind*

Preceding sections have made the case that the machinery of capitalism is showing signs of throwing a rod through the crankcase right in the middle of a pretty challenging stretch of the road. Imagine a noisy party of drunk mates in the back seat . Thanks to some idiot's advice we're on the wrong track, a few litres of water on board, the sun will be a scorcher tomorrow, and the engine's making funny noises. Might be a good time to get a grip and start comparing notes. But the drunks have one song on infinite loop, cranked full blast, and you've got no access to the stereo.

When times are good, a single story is all you need. But when things start to get shaky, well, that's when it would be a good idea to start listening more closely. Where's the problem? What can we do? This needs to be a shared conversation right across our region, state and country.

So where are the stories in the paper? Where is the diversity of views? Where is the respectful commentary? Ahhh, you must be thinking of a media that evolved to serve people's interest...like when stories and news passed from village to village in a decentralised network of information exchange. Up until very recently, stories were always embodied: they were told by someone to someone else. And all for free. A pretty good system that tilted in favour of materially useful information exchange.

What happened to it? Yep, we privatised that sucker. And by we I mean the combination of powerful interests who have secured control of the "voice of the people", ensuring that the one story that gets played over and over again is the story that suits their immediate needs to retain power. Commercial media (and here I include the ABC) has become entirely a construct of the state, acting through dominant corporates. I think it's particularly interesting that social progressives are demanding that Murdoch (NewsCorp) should be forced to register themselves as a political party, and at the same time social conservatives are livid over the ABC being dominated by woke inner-city values.

It is reasonable to understand the "media machine" as merely the propaganda-for-hire service of the dominant economic and political regime. As such, this machinery will (often unconsciously) do everything possible to marginalise or ignore alternative evaluations of our current state of affairs. Such a manufactured blindness leaves us all (even Rupert Murdoch) exposed to realities that we can only guess at, anxiously, while still being uncertain of the "truth" of our current age, for example:

> *Reconstructing the narrative economic history shows how the carbon-centric development is based on replacing flow power (photosynthesis) and animate power, embodied in living creatures, with stock energy, based on fossil, and on capitalist accumulation.*
>
> *These developments have caused and are leading to a craving, polluting and inequality-generating 'capitalocenic' formation. This human-made 'capitalcenician' regime with its nihilistically productive operations, scientific knowledge and technologies, is generating noxious consequences e.g., of adding large quantities of carbon dioxide to the atmosphere and ecological devastation.*
>
> *Following neoliberal regimes and doctrines, current dominant systems of production, reproduction, and consumption as well as organisation and managerialism make it impossible for the 'earth-body's' bio-spherical and the socio-ecological metabolism to digest and bear human interferences, interventions and outputs in this very Anthropocene.(Kuepers 2020)*

That leaves us in a bit of a pickle. We are creatures of story. We make sense of the world by threading stories through it, knitting together our own experiences with metaphors, narratives, and yarns. I think it's safe to say that sharing stories is an activity that we have been refining for our entire conceivable history. That shared, distributed form of collective intelligence is now very difficult to assemble and exercise.

### *Fake news is all we've ever had*

There's no space here to dive into postmodern conceptions of subjective truth, but most people get the idea. The same scene looks very different to different eyes. This can even be understood as an essential quality of being human: recognising that none of us carry the truth, we all carry the truth, and it is only in conversation that we put bits and pieces together to make something useful for our current needs (Yunkaporta 2019).

It is essential that we both respect our own group "truths" and that we look outside of them with respect and curiosity. This is how to get beyond the roadblocks of fearfulness that arise in a world of "others". Wallis (1995), in The Soul of Politics: Beyond "Religious Right" and "Secular Left", points out the false security achieved by building walls to exclude other views:

> *[...] we build walls we desperately hope will keep people away from us. But these same walls are ultimately unable to prevent us from experiencing the consequences of abandoning our neighbour. The walls divide us, but they don't protect us. Those illusory but oppressive walls must be broken down and nothing does that better than the experience of listening directly to the people on the other side of the wall.*

In the deterministic world of safe load limits, accurate doses, and procedural precision, we start to get the feeling that there is a good way to think (fact based) and a bad way to think (opinion based). But reality of course is far more slippery than that. The idea of fake news just makes everything that more confusing. How can we decide which of the two modes of "factuality" are best applied in any given situation? Surely we need to recognise the thermodynamic reality of limits to growth...and surely we need to see that economic facts are socially constructed.

Let's remind ourselves that North isn't real. It is a construct of the human imagination. The Earth exists in completeness without the idea of north. The magnetic energies circulating between the poles are certainly not bounded by our concept of fields (Solis and Martin 2014) any more than explaining the human heart as a pump actually defines its purpose (Talbott 2002).

It is we humans who overlay the world with *north*. We agree to its meaning and thereby intensify our capacity for societal cooperation. North is an example of what Yuval Noah Harari calls "inter-subjective reality". As summarised by Peter Holding:

> *The inter-subjective is made up of the things in which many individuals, within the larger community, believe. Thus if an individual changes his or her beliefs it makes little to no difference to the beliefs of the community as a whole. Inter-subjective beliefs only change, mutate or disappear at societal level.*
>
> *The inter-subjective has no actual existence within the natural world in the same way that radioactivity does. It is made up of the socially constructed ideas that exist in our collective*

> *imagination. Nevertheless the impact of the inter-subjective on the world is enormous: law, money, gods, nations, the notion of human rights and justice are all examples of inter-subjective phenomenon.(Harari 2011; Holding 2015)*

Harari observes that our species exhibits an astonishing ability to invent cooperative realities (2011). In fact, modern humans are completely dependent on their talent for making stuff up. We can find many examples of unrealities that transitioned from lunatic fringe into mainstream norm (e.g., the divine right of kings; neoliberalism; and trickle-down economics). Although there would be significant concerns around the ethics of creating new realities (Tilove 2015; Klein 2017), the point is that the inter-subjective is what we cooperatively agree to...it is not reality as such.

Reflecting on the construction of reality may appear to be an expensive preoccupation for people and institutions with a job to get done today. Yet, without deliberate refreshment, our institutional and personal agendas can become mere habit. As our environments speed up and become ever more interdependent, we would benefit from a discipline of frequent, critical examination of our worldview narratives to assess their current utility. Although such exercise appears expensive, it is a necessary investment if we are to stay relevant in this complexifying world (McChrystal *et al.* 2015).

Such an investment also promises dividends. As Harari asserts, it is our talent for imagining something that does not exist which allows us to cooperate in changing that which does exist. An alarming proposition, and perhaps the key to our survival over coming generations.

### *Assuaging the infinite with the finite*

The earth is often called “humanity’s inheritance”, at least by people who have inherited a euro-centric cultural framework. We might occasionally pause to ask what would the world be doing if we weren’t here. It’s an interesting question. In all likelihood the earth would do what it is already doing. And what is that, exactly? We don’t know, but it seems clear that the earth’s systems tend toward a kind of abundance-maximising condition, or planetary-scale homeostasis (Lovelock and Margulis 1974). In other words, the sum of the earth’s biotic systems equates to a “desire” to continue living. The vast entwinements of land, ocean, atmosphere, and biotic systems express a tendency to maximise the conversion of solar energy into stable networks of living complexity.

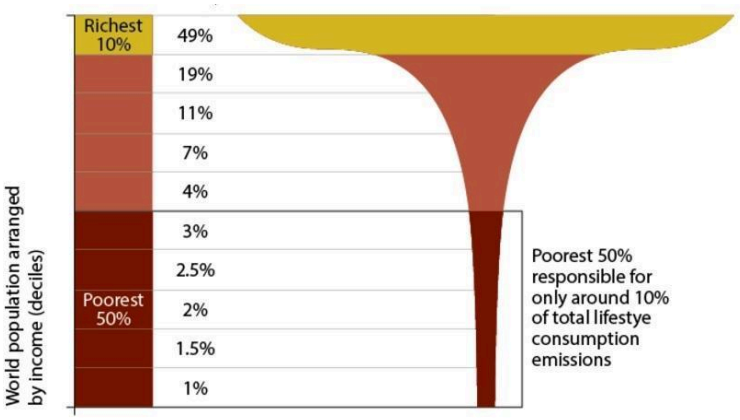
This process is almost certainly capable of proceeding *without* the presence of humans: many would argue that people are like a disease or a stress on the rest of the living system and that we will be isolated and removed eventually. Under this view, COVID-19 is the vaccine that the earth is giving itself to protect against an infection of humanity (Akomolafe 2020). These unsettling thoughts shakes us out of our preconceived ideas of what it might mean to be human, and to question what we are supposed to become. What would it mean to be better at being human? Why does life need people?

Yunkaporta (2019) asserts that, for indigenous people, the role of humans is to act as a custodial species. We are caretakers and gardeners. Similarly, in North American tradition, the first task for humans (the “younger brother” to all living things) is to find the true names of each plant and animal (Kimmerer 2013). Even the Bible supports this view, with God’s first commandment to Adam: “Go forth and name things.” (Genesis 2:19). Why do things need to be named? Why does life need people? I’m not sure, but it’s fascinating to reflect on the question. Actually, I’m not sure the answer matters. A good question can take a person on quite an interesting journey. One thing seems certain: given our

enormous capacity for inventing systems of symbols and explicatory narratives, and then falling into those imaginings, it should be very useful to take the time to align our narratives with something that appears relevant (and desirable) to the rest of the living world. Asking a perplexing question like why life might need our peculiar presence could at least serve to focus conversation toward a meaningful goal.

Returning to the metaphor of capital returns, we find ourselves in the midst of an astonishing complexity of interlocking systems that we call “the environment”, and this is already returning a massive dividend of life-giving services. The planet is literally optimised to convert solar energy into a mind-blowing abundance of natural capital.

So with this massive portfolio already operating, the key distinction we need to make is the difference between our activities that offer a comfortable living within the bounds of the dividends, or getting confused and squandering the principal on poor lifestyle choices. Of course the question varies over time. Even when there were very few people on the planet, we still managed to precipitate major impacts (eg, ecosystem transformation due to extinction of megafauna). Today, our collective impacts are truly phenomenal. And this is especially true of the “fortunate people” who are descended from the world’s greatest colonial/industrial/military empire. We kind of got a bit of a head start and have managed to do quite nicely for ourselves...note the chart of lifestyle emissions. Seething throngs of poor people are not the problem: a self-obsessed  privatopia of super-consumers is far more dangerous for our shared future..




Some observers suggest that we are already shifting toward “dematerialisation” (McAfee 2020). The argument, also known as decoupling, is that humanity’s draw-down on natural capital has been a temporary phase. Any minute now we are about to start producing vast flows of natural abundance...once we get all the tech needed to implement this new world of living prosperity. If this is the explicit proposition of capitalism and modernity I would like to see it more clearly blueprinted. Decoupling has been thoroughly disassembled by a wide range of researchers, amongst whom the work of Tim Jackson (2016) sets the modern benchmark, building on the careful thinking of many others, including the inexplicably obscure Frederick Soddy (1927). In the absence of a compelling narrative, our unconstrained resource and energy profiles look a lot more like an ill-disciplined adolescent squandering their inheritance as fast as possible.

If we get it wrong, there is every chance that our species will be evicted from the planetary story, and this is the root of much anxiety in the green movement. However, even if the notion of Gaian rejection fails to excite your interest (Ripple *et al.* 2017), there are thermodynamic arguments to support the view that there are limits to our profligate dissipation of heat (Prigogine and Stengers 1985; Murphy 2011).

What’s the answer? Since people will always have an impact on the world around them, what are we to do? This is a humbling question because in our hearts we know that we don’t know. Being able to say “I

don't know", publicly, and with deep humility, seems to be an essential stage in our individual and collective process of maturation. I don't know. You don't know. We don't know.

Perhaps we really need to talk about it. Perhaps in a Dialogue?

### *Decoupling: can't we have it all?*

Why force a choice between either supporting economic growth or running down natural capital ? Can't we do both?

This is the positive, optimistic voice everyone likes to listen to. Indeed, the monumental work of Amory and Hunter Lovins at the Rocky Mountain Institute in the 80's and 90's was aimed at exactly that goal, and (under different organisations) they continue their good work right up to the present day. Much tangible reward has come out of their observation that shifting the big engines of commerce a few degrees toward efficiency and sustainability will deliver enormous benefits.

A whole literature has grown up around the cheery prospects of "dematerialising the economy", leaving capitalism to churn away in some frictionless world of digital accounts while the material economy seeks a sustainable equilibrium (e.g. Harford 2020). Natural capital and economic capital can be bought under the same suite of practices. There is an entire body of wisdom affirming the economic and environmental benefits of cattle to the landscape.

And basically, I agree that life is experienced in the semitones that are created between two absolute poles. So it's entirely reasonable to look for a "balanced" strategy that allows for some economic outcomes at the expense of setting a torch under a little bit of natural capital.

When I assert that "natural capital must come first" it implies that some trade-off situation has arisen that cannot be resolved to a win-win situation. In this case, and despite all efforts, the producer is faced with a choice to take management action A or B. At this point, if we require the natural capital option, the producers must push the economic option to a secondary goal. That gap must be funded in order to allow natural capital (practice change) to fairly compete with the economically-rational (BaU) option.

The language we use makes a big difference. Even in the heart of natural capital territory, under the formidable weight of the World Bank, we see that natural capital is really about caring for the natural resources that relate to economic development. According to this view, which is quite typical, the value of natural capital accounting is to help us better manage difficult choices *within* the financial economy:

> *Natural capital accounts (NCA) can provide detailed statistics for better management of natural resources that contribute to economic development. For example, land accounts can help countries assess the value of competing land uses. NCA can help countries rich in biodiversity to design a management strategy that maximizes the contribution to economic growth while balancing tradeoffs among ecotourism, agriculture, subsistence livelihoods, and other ecosystem services like flood protection and groundwater recharge. (World Bank 2020)*

There are so many factors left out of this formulation that it's hard to know where to start. The explosion in "material wealth" and "consumer choice", riding on the rising tide of financial capital, is

widely interpreted as the hallmark triumph of mainstream culture. It is also widely critiqued, particularly by those who are able to look at the picture from a different cultural frame (Yunkaporta 2019).

The National Farmers Federation (NFF) issued a Natural Capital Position Paper in 2019. Given the influence and mandate that organisation carries, this ought to be a significant piece of work that takes a deep approach to the topic on behalf of the "custodians" of 51% of the landmass.

As a visionary statement, it leaves plenty of room for improvement. Ag is not challenged in any significant way. Although the authors admit to some structural issues with the ag supply chain, they promise that natural capital (stewardship payments) can help sort things out.

> *Therefore, there is a logical imperative to capture the value of natural capital in a market-based framework that governs decision making on farm. In the absence of a market-based system that assigns value to natural capital and the various services provided by the environment, there is little ability for farmers to pursue the protection of natural assets within the current agricultural market framework without incurring significant cost or loss of income*.(NFF 2019a)

This is what producers mean when they say: "You want biodiversity and ecosystem services? Great. Pay me for them. We cannot go green if we're in the red."(Pearse 2019). So producers should be able to tally up the natural capital they have produced, get it into a market, and start trading. Happy days.

According to the NFF (and most others) natural capital must be positioned within the normative economy so that it can be legible to the mechanisms of mainstream reality. The environment can become another cost code amongst many, and thus have a legitimacy equivalent to all other costed goods and services. This is just how things work, according to BaU: primary producers generate streams of isolated, standardised outputs, for example tonnes of grain sorghum or number of yearlings, and they sell these in a globalised market to receive general-purpose economic capital.

How is it conceivable for a specific stretch of country to give substance to a lamb that is "identical" to the lamb from across the state? To make this possible, there's a whole grading, measuring, and assaying effort to ensure that any residual traces of specificity are removed (unless those traces are important for marketing!). The production machine clips all this contingent, particular, and distinct produce out of their "lifeways" and alienates it into the capital system, giving rise to any number of disturbing questions (Tsing 2015; Massy 2017).

This system is bad enough when we think of sheep...to suppose that a similar process of alienation can be taken with ecosystems, which is the only practical way to transform these whole systems to abstracted units of economic capital, requires us to make a decision. Either we continue to put the financial economy ahead of the natural world, or to put it in service of the natural world. If we choose to take the biosphere as the ultimate accounting system, we will be making a cultural commitment that transcends mere financial accounting trickery.

Our priorities express a moral and ideological basis on which an untold myriad of contingent decisions then proceed. The biological (and thus human) world needs to be "decoupled" from the delusion of endless economic growth. As noted in the European Environmental Bulletin, "...it is the magnitude and timing of that (economic/natural) decoupling which is at stake more than its mere statistical existence." (EEB 2019).

The problem is that at the heart of our current ideas of economic growth lies the insatiable engine of debt/capital return. Compound interest drives continuous growth in the absolute amount of capital, and that capital is always hungry. This means that any relief to the natural world through decoupling financial growth from material consumption is simply re-absorbed into the system. Here's a quick example of that effect in the context of the ultimate dematerialisation (carbon):

> *Some relative decoupling (a decline in the carbon intensity of economic activity) has clearly taken place. The carbon associated with a dollar of global economic output, for example, has declined by 35% over the last half a century. And this is entirely consistent with a system in which entrepreneurs prize efficiency and seek to minimise costs.*
>
> *But global economic output has increased five-fold over the same period, swamping those efficiency gains by a substantial margin. Annual carbon emissions are more than three times what they were fifty years ago. The rate of de-carbonisation needed to deliver an emissions pathway capable of meeting the 1.5° C target is an order of magnitude higher than anything that has ever been achieved historically. (Jackson 2018)*

In other words, the improvement to our carbon emissions profile achieved through behavioural change (efficiency) was devoured by the larger machinery driving economic growth (returns on capital). This is further described through the Jevons paradox (Wikipedia 2020b) which notes that increased efficiency in the use of resources leads to their accelerated use.

If this is the case, couldn't we solve the problem by reducing the demands of capital, ie, by reducing or eliminating the rate of interest charged on rural debt? Or by subsidising it? To a large degree the answer is yes. With sufficient political will (ie, popular insistence) it would be possible to pass legislation that protects primary producers from interest on debt (ie, to make economic capital available on a zero-growth basis). Of course this is possible: we can actually do anything with the rules of money, and such a program would be immensely beneficial right now. Once established, it would take constant vigilance to guard against incremental return to the dominance of capital returns. The most efficient path to achieve this vigilance is to shift our cultural norms to put natural capital first, and shift economic capital to an important, yet subsidiary role in the service of a human (life-centered) agenda.

As Lovins himself observed about the two options for achieving energy security (1976), these two paths are mutually exclusive. We have the opportunity to re-invent our economics in the shape of the natural world...I do not think we will survive an attempt to re-invent the natural world in the shape of our current economics. How we talk about this is a matter of great urgency. It would be enormously beneficial if the media were not a itself a capital-seeking creature intent on maximising its own accumulation..



*View west across a proposed commons, Mount Molloy.*

# 8: Conclusions

## It’s a whole lot of things. Where to start?

It’s difficult to imagine how 15% of Queensland’s population will be working and thriving in a publicly-funded Outback Commons within the next 10 years. Perhaps the depth and degree of change required is simply too overwhelming. Many people will shake their heads...change at this level requires a seismic shift not only in Queensland, but within arrangements with the Commonwealth and our international relationships.

This nay-saying would be quite a sane assessment, but still. Perhaps sane is the wrong word: perhaps the scope of such proposals is uncomfortable to the “reasonable person” simply because our modern sensibilities are ill-prepared for the challenge. Perhaps genuine sanity is to be achieved by cultivating our capacity for conceiving and implementing systemic change at scale. Perhaps the very magnitude of the problems in the rangelands is an evolutionary driver that we are invited to respond to with innovative adaptation, which may well include being able to undertake radical changes to our socially-negotiated world.

In seeking a place to start, I think of ideology and geography.

Ideology is the thing that we have the most control over...it is the one thing we invent from a blank slate, and thus we are free to re-invent it as needed. Finance has come to dominate our lives. The modern formulation of capitalism is a minimally coherent ideology that appears exceptionally ill-suited for

advancing the shared interests of people and planet. Although we are all participating in its persistence, the shambolic framework is held in place by a shrinking number of mandarins. I would start by challenging this rag-tag cabal of rentier capitalists to either make a convincing case for their continued influence over the course of planetary affairs or move along. Simple enough.

Geography is the connection to the other-than-human world. Places, like people, are unique in themselves and particular to a context. I am enchanted by the specific qualities Queensland offers as a ground-zero site for the transformative program discussed in this paper.

For one thing, we Queenslanders are affluent and we have plenty of room to move. The extent of habitable land is vast, allowing us to offer refugia and promote a kind of cultural hybrid vigour. Consider the challenge of climate uncertainty. We have far more latitude to experiment and pursue social change, shifting our industries, cities, and logistics toward higher levels of resilience. Our experience can provide valuable learnings for others.

From another perspective, Australia (and Queensland particularly) has a remarkable opportunity to coax forward an emergent world culture. As Mary Graham (2021) pointed out, there are three dominant “minds” in the world today: the European, the Asian, and the Indigenous.

The recent shape of “Queen’s land “ was cast in a colonial mould by the English empire still ascending the remarkable convergence of science, religion, and industry that would define the modern era. We sit at the edge of Asia, entrained with their orthogonal cosmology, deep cultural momentum, and staggering populations. And we are humbled to live amongst thriving fragments of the world’s oldest living cultures. Our land is quiet, modest in natural capacities, yet endlessly inventive. Unlike the fertile northern continents, even our microbiome is optimised for cooperative relationships, not competitive. It is hard to imagine a more potent and symbolically important place for a new cultural narrative to emerge than Australia...and within Australia, what more appropriate place than the iconic outback of Queensland.

There’s nothing wrong with the people, the land, or the weather. We just need to re-arrange our priorities. We need to shift a few sacred cows into a better paddock.

So yes, really: we could see Queensland’s outback country as an epicentre for global change. This is the place the big change starts. Now.

## Priorities and feasible paths

Let’s review the priorities that domain experts have highlighted. Foran *et al* (2019) assert that the rangelands present  the interconnected challenges across the rangelands. The priorities for change include:

> *...ensuring a social licence to operate across a range of uses, acknowledging and supporting a younger, more Indigenous population, implementing positive aspects of technological innovation, halting capital and governance leakages, and building human capacity.*
>
> *A recommended set of systemic responses should therefore (i) address governance issues consistently and comprehensively, (ii) ensure that new technologies can foster the delivery of sustainable livelihoods, and (iii) focus capacity building on a community of industries where*

> *knowledge is built for the long-term, and do all three of these with an eye to the changing demographics of the rangelands. (2019)*

Like all highly interconnected domains, any attempt to reduce the rangelands to a terse set of independent isolates will produce a fascinating catalogue while concealing the essence of the domain itself. Foran makes a very important contribution here nonetheless, with a practical and easily-digested diagram of important change factors that need sustained attention.

Perhaps the saving grace in such analyses is that they reliably deliver observations that are useful to the overall project of enhancing our connectedness to the foundational patterns of life. When undertaken with a generative spirit, all enquiry leads to a deeper capacity for enduring relevance amongst seemingly distinct systems of being. This is the core of cooperation.

Precipitating and sustaining transformative change is an art form at the best of times, and it can be especially difficult to achieve in a sparse regional context. In the right circumstances, public agencies can play a critical role in assisting regional communities navigate a change process. Geoff Edwards notes that a feasible path to change requires agencies to have access to five critical elements, all of which are necessary:

> *The lack of an empowered champion or can-do commander or dispersed legal powers can be summarised as fragmented accountability. The lack of skilled personnel or information can be summarised as fragmented knowledge. The lack of funding can be summarised as starvation of public goods.*
>
> *It is not sufficient to have two or three of these elements in abundance if at a specific locus of activity one of them is lacking. The absence of one or more of these capacities renders so much other capacity impotent.* (2019, p.15)

With the elements of a feasible path in place, public agencies will be able to contribute effectively to change processes. But this does not suggest the agenda should be owned by those agencies. There is a considerable literature on the perils of “top-down” development agendas. On the other hand, relying purely on “bottom-up” strategies can seem futile. In reality, lasting change seems to depend on a constructive contribution from both approaches.

Douglas again provides insights on effective change processes:

> *Change requires participants to shift their mental models of knowledge, beliefs, and expectancies, so the planning process must attend to, but not endorse current local social and cultural structures. The change process will shift the region into new terrains, new knowledge, ways of thinking, belief systems, new ways of acting and new expectations. These shifts will create tensions and discomfort, but it is a necessary part of the change process and moving the region beyond business as usual.* (Douglas 2020b, p.13)

Once we take account of the need to undertake change as a deliberate and well-designed social process, we can start to progress on a feasible path that combines the best of top-down and bottom-up strategies.

## Practical transformations

I have discussed various formulations of the idea of natural capital, its relation to the commons, stewardship payments, and our role as custodians of country.

There's been a fair bit of "philosophical musing" along the way...perhaps even sermonising. I come from proper missionary stock and can lean comfortably into a morality tale at the slightest provocation. Thank you for reading patiently.

I still owe some explanations to those restless souls who are keen to get stuck into the hard work of making change happen on ground, in the meeting rooms, and amongst the policy makers. My deliberate reticence to offer specific recommendations is for two key reasons.

First, the details of how a rangelands commons might operate need to be firmly grounded in an organic change process. It is up to all of us to come together in groups and clusters, in pubs and CWA halls, to figure out how to manifest this alternative vision. It's not a straightforward linear process: it's a bit chaotic and (if we succeed) it should always be difficult to find out "who is in charge". Douglas provides some comfort here:

> *Governance in bottom up regional change is not necessarily unruly, but it may appear messy. The process does not operate in the traditional way of top down authority. Designing actions and making decisions in the bottom up process requires structures and procedures that participants consider to be legitimate. In the bottom up process, authority to propose actions and make decisions does not derive from an individual's power or positional status, but is given by others to individuals or groups, based on respect for their expertise and prior experience, and an anticipation of a successful outcome. Those involved in the governance of bottom up change are able to drive the change process on the basis of respect from fellow participants.(2020b, p.20)*

The second justification for avoiding detailed discussion of immediate issues like drought policy, declining terms of trade, de-skilling, and de-population is that, quite possibly, we cannot successfully address these matters using the BaU toolset: it's hard to solve systemic problems from within the system that created them.

In other words, if private land management, the primacy of capital returns, and a commitment to export earnings are non-negotiable, I can't see how to make meaningful progress. You may well disagree: such is the nature of dialogue.

For me, the direct solution is to get outside of the little box we have assigned ourselves to. Although the changes I have proposed might appear impossibly ambitious, at least they are volitional. Consider how irrelevant the *right to farm* outrage will seem when the cities start to collapse in a world warmer by just $2^0$C? The changes required at that point will not be volitional...they will be non-negotiable and they will not be joyful.

It shouldn't be so shocking to contemplate the end of neoliberal capitalism. It ought to be a matter of great excitement to re-imagine how we might achieve our goals of thriving rangeland communities and abundant production systems. Such a process will increase the stocks of social capital in the

rangelands and cities alike. A massive expansion of population in the outback will facilitate the “bonding, bridging, and linking” necessary for collaborative communities (Phelps and Kelly 2020)

Of all the solution patterns that are ready to hand, the time-tested model of the commons appears to offer a solid starting point. Add to this the concept of fiscal debt being used to supply public investment finance and we begin to have the pieces of a workable proposal. Within this context, I can return to the list of pressing rangelands issues and make some comment about the situation as we typically discuss it.

To assist us, a recent summary of issues arising in the Rangelands Dialogue has been assembled and presented to the group as a set of questions that the Dialogue could engage with (Dialogue Pariticipants 2020). In the table following I shall provide some terse responses to suggest how the issues raised might look in a publicly-funded commons context.

Table 14 *Pressing issues of the rangelands addressed in a Commons context*

| **Priority Rangelands issue** | **Response in a Commons context** |
|---|---|
| How serious is alleged loss of land condition and regional ecosystems at the regional scale? | Under commons management, the health of the land is the first question to ask and answer in an open and public way. Land condition data is everyone’s interest. |
| Is there now an adequate test of land condition at the property scale? | Under commons management there are more people, smaller operations, and more intense (and relevant) observation of land condition at all scales. |
| Can the insights of First Nations Peoples be built into a model of stewardship that is applied within a market economy? | The insights of first nations people is that markets are built into stewardship, never the other way around. That is the great insight, and the single most important adjustment to mainstream culture that can be made. |
| How financially profitable is broadacre pastoralism? | Under BaU, it is not. |
| Can broadacre pastoralism ever be profitable enough to pay for asset regeneration? | Under commons management with a domestic focus, yes. |
| Who is going to pay for weed and vermin control? | Public investment pays for public good outcomes across all of the commons, regardless of production vs conservation status. It is one living system, ultimately owned by the people, and maintained via their trust in the collective common wealth. |
| How can public investment in sustainable management of landscapes be justified when those landscapes are managed by private commercial businesses? | Convert tenure to a public commons; establish credible mechanisms for public investment. |
| Can markets for commodities be stabilised? | By reducing exports and focussing on self-sufficiency (local/regional/national) fluctuations in the market for commodities are less relevant to rangelands people. |
| How can a reborn agricultural policy for the Rangelands navigate between the need for extensive | In the first instance, by turning away from export income, substituting public debt to regenerate and repopulate the rangelands, and then reconsidering exactly what we hope to achieve by participating in the |

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|---|---|
| investment in regeneration of the natural asset base and the disciplines of the World Trade Organisation? | WTO framework. |
| How can the Dialogue gain traction for a reborn agricultural policy that does not conform to orthodox neoliberal economic policy? | In the face of overwhelming complexity and interdependency, neoliberalism is fading into irrelevance anyway. All the Dialogue needs to do is co-create an informed and credible alternative, market that through civil society, and allow the neolib crust to fall off in due course. |
| Can a formula be devised to offset drought distress without perverse consequences? | In simple terms, drought distress is twofold: economic and spiritual. The economic stress is easily solved in a commons context because no one is required to service a mortgage on land. Equipment and stock debt are likewise easily washed through a cooperative asset management mechanism. There is no incentive for spectacular profit, but there is no stress for coping (financially) with drought or other natural disaster.<br><br>Spiritually, the emphasis on natural capital first already orients people toward a more profound relationship with their country, their stock, and all the living abundance they steward. When difficult times come, they are able to draw on the strength of this relationship to the land and calmly endure the inevitable pain that life brings to all of us. Not too different to the way most land managers already relate to country...just a bit sweeter! |
| Can land prices ever be connected to productivity? | Very difficult to imagine under a private property arrangement where economic growth is mandated. This tension is eliminated by transferring land to a commons and removing the possibility of land speculation entirely. |
| How can the Dialogue assist the industry to prepare for carbon boycotts? | Under a commons strategy, this problem goes away because the rangelands have fundamentally committed themselves to a low-carbon, degrowth agenda...plus there is the reduction of exposure to export markets. |
| What can the Dialogue do to improve public service capacity? | Under the resettlement proposal, a considerable number of people will be essentially committing themselves to the service of the public. Although these people are not government employees, they would be an enormous new human capital asset. The government would immediately move to re-stock public service capabilities to maintain relevance. Thus we'd get two new cohorts of skilled capacity. |
| Should the Dialogue advocate for lateral property integration aided by open stock routes? | The commons approach takes the benefits of property integration to the next logical step. |
| How can we repopulate the Rangelands communities? | Pay them to live there. There is an enormous amount of work needed to repair and revitalise the rangelands, much of it best done by people working slowly, at the local scale, growing self-reliant human centric communities as they go. |
| How can the Dialogue ease tension between the city and the regions? | By persisting with the Dialogue and its stated aims. |
| Is carbon farming a (or the) solution or a false dawn? | Carbon farming is a neutral proposition. If undertaken with economics first, it will be a false solution. |
| Can the Dialogue mediate a settled position on vegetation | Certainly. What it takes is formulation of an alternative to the impossible (yet familiar) arrangements currently locked in place. Once people |

| | |
|---|---|
| management? | believe they have an alternative in their hands (ideally that they have made themselves), then resolution to the Veg Mgt impasse is inevitable. This is the role of the Dialogue. |
| Should the Dialogue promote soft catchment treatment rather than grand irrigation projects? | In a natural capital commons there is rarely a need for massive engineering. When large scale projects are undertaken, it is with a holistic awareness. |
| Do pastoralists have enough information to prepare for climate change? | Yes. It's happening, and the way to prepare for it is to form a commons. |

## So is natural capital a one-stop solution to drought, COVID19 and a new economic future for farmers?

Inasmuch as the whole world is revealed in a grain of sand, the answer is *yes*. Inside the idea of natural capital we find the whole story. All the solutions are there. But there are so many different ways to understand that story.

Natural capital is a metaphor that bears the burden of our increasingly alienated relationship to the rest of the living world (Tsing 2015). If we only see natural capital as a way to drag the rest of planetary life onto our financial balance sheets, then it is a final roadmarker of despair, signalling our impending departure from the biotic world.

To the extent that natural capital schemes are implemented with the primary aim of redistributing capital accumulations through a financialised market mechanism, they will experience the same fate as all market-based exchanges: there will be an inherent adversity between buyer and seller; there will need to be significant intervention by market operators to assay the quality of public good delivered; and there will be an inevitable consolidation around a few dominant players who will distort the market to suit their own ends. All of this is written into the mechanics of financial capital and money-mediated exchanges. It has little to do with actual progress toward natural abundance, stewardship, and more meaningful lives pursuing an ever-deepening relationship with the living world.

If natural capital initiatives are undertaken in a timid spirit, choosing to politely avoid disturbing the BaU model, then we will have failed to make changes where they matter most (Walker 2020).

Alternatively, natural capital could be seen as an essential linkage back into more proper relationship with the biotic, the enmeshed, contingent, and relational family circle that has cradled and nurtured our species to this point. With its power to sublimate our BaU economic narrative, natural capital establishes a platform on which the essential processes of cultural maturation may unfold (Eisenstein 2018).

Natural capital initiatives could explicitly declare their ambition to contribute toward a transcendence of interest-bearing finance. This higher-order approach to natural capital is more likely to provide a comfortable living and meaningful lives to the stewards of the public commons. The central shift is to put public service first. This effectively erodes the shackles that bind land management to the primacy of capital debt and the anxiety of private land ownership. Proper natural capital initiatives will rely on

local negotiation of worth, idiosyncratic accounting of credits and debits, and the storage of enduring value by nurturing the network of relationships that characterise the living world.

## Telling a better story

The power of narrative is well acknowledged in the social and political sciences, and I am a dedicated champion for positioning narrative as the first step on the journey toward transformational change.

Let's review the story of Queensland's rangelands. As a cultural construct it appears to occupy one of three broad conceptions (ca. Traill and Stafford-Smith 2020):

- A valorised frontier for heroic individuals
- A dysfunctional wasteland
- An irrelevant enigma

There's not a lot to work with there. We'll need some more iconic ideas if we're going to bring the rangelands into broad public view. Traill and Stafford-Smith take this challenge forward by proposing a positive and forward-looking narrative. This short story can be shared, reinforced, and pushed as a more useful lens to communicate our (national) regard for the rangelands. They call this narrative the *Modern Outback*:

> *The Modern Outback is an extraordinary place. It generates much of Australia's wealth, while also being one of the few great natural places remaining on the globe. It is vast, covering four-fifths of the Australian continent, but less than two percent of Australians live there. This landscape is fundamentally different from our cities and regional towns where the vast majority of Australians live; but it is no less essential for Australia's economic development and global reputation.*
>
> *The Modern Outback continues to underpin the nation's material economy, and its bushlands and rivers remain widely intact. But there are challenges, in part because government, corporate headquarters and even city-based well-wishers live so far away. Some communities remain blighted by poverty and poor essential services. Some native wildlife and plants continue to decline, threatened by invasive feral species and uncontrolled wildfires. Livelihoods can be undermined by unwitting distant policy decisions.*
>
> *Nature still dominates in the Modern Outback, the boom and bust cycles of rain still drive the country. Its residents are resilient and work cooperatively to live in testing conditions.*
>
> *Indigenous cultures remain strong, and at the heart of the Outback are the history, stories, skills, knowledge and work of Aboriginal people. Together, these experiences provide lessons and identity for our nation.*
>
> *A thriving Modern Outback is good for us all. Caring for this extraordinary landscape and supporting the people who want to live there will maintain its physical, cultural and economic wealth for all Australians.* (2020)

This is a heartening and optimistic contribution that positions the rangelands as central to Australia's more abundant future. The proposal for a rangeland commons could support the Modern Outback narrative by inspiring an effective re-formulation of the economic rulebook to serve our better interests.

The reason we don't have an abundant and vibrant outback today is not because of too many latte-sipping greenies, it's because the whole financial system has been wired together so that we are in a competitive, ruinous race to the bottom, each of us gnawing bits off each other. I can't pay full price for my inputs because you're not paying me enough for my product. Under the rules of scarce capital and competition, we are assured of producing losers. It's a desperate, circular delusion of scarcity. No one is really winning. Even the elites who manage to scoop cream off the top of this miserable cycle find it increasingly expensive to insulate themselves from the dangers of a collapsing world.

The starting point for living abundance is primary production. Land managers ought to have an almost god-like status because of the essential part they play in coaxing a human sufficiency out of the big community of the living planet. That is not the mainstream story at the moment. It is up to us to change that.

## Change and agency

We started this paper testing one another's appetite for change. From a global perspective, I tend to agree with David Korten's stirring assertion:

> *Everything is going to change. The question is whether we let changes play out in increasingly destructive ways or embrace the deepening crisis as our time of opportunity. Now as never before we must unleash the creative potential of the species and direct it to democratizing our cultures and institutions and bringing ourselves into balance with one another and Earth. (Korten 2009, p.xlv)*

This is exciting language. It raises the hairs on my neck: I want to pull the levers of change with every form of energy available to me. But at the same time I can feel overwhelmed by the immensity of it all. What can I do that will make any difference? Who am I fooling by trying to change land tenure? I think the answer is to trust in the power of story. That's how we got here, and that's how we will move on.

### *Every conversation is a new contribution*

When we confide with one another that the machinery of capitalism will not and cannot be changed, we are falling well short of doing one another real service. Why do we do this? Logically, there is no chance that the current form of capitalism will endure another generation. The only question is how we choose to participate in its transformation. Can we see that each of our conversations is part of creating a new story? What's the risk?

The justifications for our exploitive behaviour are so pervasive, so familiar, that many ordinary people never get close to questioning them. But, perhaps surprisingly, the veneer is thin. Under strain from increased climate variability, a disorienting pandemic, and the descent of politics to tawdry spectacle, we find that last century's justifications are rife with frayed edges, exposing the questionable foundations of BaU with disturbing clarity.

For many people, any criticism of our current "system", what I refer to as BaU, is closely coupled with critique of the economic system that dominates the globe. However, in acknowledging how we got here, my purpose is to look forward, to lean into the possibilities of a more equitable, abundant, and

contented future. The stories we tell ourselves about wise investments (natural capital) and right livelihoods (stewardship payments) could help us navigate those uncertain futures more confidently.

We have little to lose. Listening to the hopeless double binds that primary producers are expected to endure is heartbreaking. It is tragic to watch intelligent young farmers double down to service the endless demand for capital returns, abandoning their sense of curiosity, beauty, and belonging. Looking around at the wasted talent and human ingenuity sitting idle for "lack of budget" is borderline madness. Things have not always been this way. And they cannot remain thus. Buluwai elder Willie Brim commented on the insanity of the mainstream culture's economy through a conversation that has been framed on the Buluwandji Collective website:

> *The whole point of anything done in pre-colonised Australia was to reproduce the human community in which the people lived. The capital of that society (and any pre-civilization society) was the human being. It was the human being that was recreated and reproduced.*
>
> *In modern society we live in an economy which only reproduces humans as a by-product. What is intended to be recreated and reproduced now is wealth. Modern society is geared to recreate the wealth of individuals and corporations. Most other humans play only a part in this process, their part is equal to the materials or land used. Just like oil or land, most humans are now a commodity to be used in the endless re-creation of profit and wealth.(Buluwandji 2018)*

I believe this is a bracing reminder of where we are right now, in a stupor of pain and pleasure, but ultimately in a condition of slavery to the machinery of "capital debt". Time to sober up. These shackles are of our own imagining.

In this paper I've attempted to position natural capital as an important idea that reveals much about the relation of humans to the web of life. I suggest that our participation in the alienation of the non-human world is the heart of our problem (Kimmerer 2013). In particular, this essay relates to the predicament of "homo economicus" and the chances of that creature's continued survival.

## *Scaling daily truths*

Life seems to scale from the immense to the infinitesimal while maintaining a kind of pattern integrity along the way. What is true at one level holds true across other levels. An idea that connects with "truth" at one level performs the same pattern function everywhere.

In this sense, I can consider my internal habits of mind, body, and spirit first, and in relation to my immediate family. What takes precedence in each moment? Where does my attention go? In what way do I serve those around me? These questions, asked at the most intimate scale, invite me toward observing, learning, and (very slowly) finding confidence in certain ways of being.

In relation to my local community, it is not hard to find the same dynamics in play...but at a different apparent scale. And so it goes until we're sitting together talking about how the UN Sustainable Development Goals make us feel.

If I can explain to myself the mechanisms by which I managed to quit smoking, I have an embodied story that relates to the truth of how the people of Queensland can find the courage and self-discipline to get off the coal export habit. If you and I can lower our egos long enough to really hear each others'

stories deeply, then we have a pattern related to how Australia and China might understand each other more constructively. If we all can pay a little bit extra for our local, seasonal produce, then we have imagined how self-sufficiency might work at a regional level.

In our hearts we are as big as the world. While we can concern our hands with healing the natural world, it is the healing of our own hearts that will allow us to be the most faithful contributors. The beginnings of a startlingly different “business as usual” are being sown everywhere, and that includes the rangelands. How each of us will participate in that story will be a journey in itself. I encourage you to take the big step and start telling the big story to yourself, your colleagues, and neighbours. That is the useful thing we can all do, right now.

Telling a new story of the rangelands is something we are able to do together.

Do such stories matter? Yes. They matter very much.

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