Twenty First Century Landcare

Policy and program innovation to improve on-farm productivity, agricultural competitiveness and natural resource management

ALMG®
Australian Land Management Group

Overview

This paper highlights the opportunity and need for innovation in natural resource policies and programs, and the nature of 'sweet spot' opportunities to improve on-farm productivity, agricultural competitiveness and natural resource management.

Current land management support programs fail to support long term, measured, cumulative benefits as an integral part of day-to-day business. They fail to adequately link continuous improvement in environmental outcomes with continuous improvement in on-farm productivity and increased competitiveness in domestic and global markets. These programs incur high financial, skill and motivational costs. Given all this and the ever increasing demands on farm managers and on technical support personnel it is not surprising that there is a broad consensus on the need to establish market-based policies and programs to support continuous improvement in natural resource management.

The opportunity for 'sweet spot' innovation in natural resource policy and program is created by significant trends in the operating environment, including:

- Political: Community concerns about environmental and animal welfare management create the political window for support for better land management
- Market: Consumer concerns about environmental and animal welfare management and increasing standards of living in our major markets create the opportunity to market ethically differentiated products into higher priced higher margin markets
- Technology: Improved technology particularly in supply chain management and communications more easily enables the rapid evolution of consumer driven markets, direct marketing, improved traceability and cost effective verification
- Mindset: Land managers increasingly appreciate the synergies between good environmental and animal management and farm profitability.

There are multiple factors driving the need for 'sweet spot' innovation, including:

- Profit: The need to increase profitability and to strengthen the productive base in response to an accelerating global demand for food and fibre. This driver for improved profitability is accentuated by past decades of there being no substantial change in the real gross value of agricultural production and decline in aggregate real farm profitability notwithstanding massive increases in the volume of production and in the value of world trade
- Competitiveness: Increased recognition that to be competitive Australia needs to deliver high quality differentiated products
- Environment: Continuing environmental degradation and loss of biodiversity
- Financial: Increased public sector fiscal constraints
- Social license: Businesses needing to avoid the liability of dealing in 'dirty 'investments

Given these considerations 'sweet spot' innovation in natural resource policy and programs will be characterised by policy and program responses that:

- Improve on-farm productivity through better farm ecology, the soil-plant-animal interactions
- Improve marketplace competitiveness through better risk management and through verifying 'green' and other credence factors, helping market forces to drive sustainability
- Increase leverage of private sector investment though encouraging and enabling integrated production and conservation planning and execution and through better alignment of public and commercial drivers of continuous improvement
- Reduce financial and skill transaction costs in delivering public and private sector support programs in part through providing on-going support for better outcomes
- Strengthen monitoring and recording of outcomes to guide adaptive management

To achieve the desirable quantum of each of these outcomes we need to capitalise on the linkages between productivity, profitability and the environment, to ensure continuous improvement is incorporated into the everyday business of land management and to enable crucial policy

innovation. We need to move current emphasis from narrowly focussed, short-term, high-transaction-cost project funding to support for voluntary, independent outcome verification. A transformational step would be achieved by the accelerated national role out of the Certified Land Management (CLM) system as designed, proven and refined by the not-for-profit Australian Land Management Group (ALM Group).

In 2013 the World Bank International Finance Corporation concluded that to enhance the role of voluntary standards in progressing to sustainability there is a need to:

- Safeguard the credibility of claims about compliance with standards
- Promote demand and supply and improve systems to link demand and supply
- Develop effective and cost-efficient systems with a model that enables innovation and scaling
- Have complementary instruments that create the prerequisites for producers to achieve certification.

In the Australian context Government could meet these requirements without major disruption by:

- Providing support funding to verification systems that are relevant and robust, for instance to those that are ecologically and spatially sound, that verify continuous improvement and that meet ACCC requirements for registration as a certification trade mark
- Using verification systems that meet necessary criteria as mechanisms to deliver support for landholders delivering continuous improvements in natural resource management
- Supporting development of relevant software tools and smart phone apps to improve the effectiveness and efficiency of verification systems, particularly in regard to monitoring, recording and collation of environmental improvement
- Ensuring best practice in developing and supporting environmental regulation and to support relevant research and development

This paper references multiple recent reports calling for innovation in natural resource management policies and programs. Now is no time for complacency. It is time to break from encircling constraints and move steadfastly with appropriate innovation. Insightful leadership from government is necessary to avoid loss of opportunity and the cost of ineffective poorly designed partial responses.

Purpose of this paper

This paper is about capturing synergies between environmental management, agricultural competitiveness and profitability. It is about capturing synergies between public and private investment in land management. And it is about Landcare operating effectively across these spaces.

The paper draws on over forty years experience in agricultural and environmental research, development, and extension, politics, policy and program management. That experience is grounded by an equal period in practical land management and most recently from having had input into the design and operation of a continuous land management improvement system, the Certified Land Management (CLM) system[1]. The paper also draws on several key resource documents[2].

Landcare and profitability

Landcare has no shortage of mothers and fathers, no shortage of those who herald its successes and no shortage of those who dismiss its shortcomings. However there has been virtually no evidence-based Landcare policy and program innovation over the past decade or so.

Without policy and program innovation Landcare is likely to suffer a slow death through the twenty first century.

Landcare relies heavily on the individual and joint efforts of land managers but it also needs insightful government, industry and civil leadership to shape and communicate effective support policies and programs.

Without policy and program innovation Landcare is likely to suffer a slow death through the twenty first century.

Private investment in land management is many hundred fold greater than public investment. Hence the effectiveness of public investment and other interventions is heavily dependent on influencing private investment to meet both private and public sector goals. Unfortunately however the links between public and private investment in land management are tenuous.

Long term, outcome-based public-private partnerships would help stack the cards in favour of beneficial outcomes.

The majority of public investment is short term, narrowly focused, prescriptively applied and burdened by processes that excessively absorb energy, skills and finance. Most private investment is longer term, more broadly based, delivers both public and private benefits and has low transaction costs.

Individually or in combination public and private investment can lead to beneficial or adverse environmental outcomes but long term, outcome-based public-private partnerships would help stack the cards in favour of beneficial outcomes.

Many commentators herald the need for increased agricultural production to meet strengthening global demand for food and fibre. Much of this strengthening global demand reflects dietary changes consequent upon improved purchasing capacity and hence it will translate through markets with inevitable supply responses. Hence the key challenge for public policy is not so much to increase production but to increase agricultural competitiveness and profitability in ways that strengthen ecological sustainability and social resilience.

The key challenge for public policy is to increase agricultural competitiveness and profitability in ways that strengthen ecological sustainability and social resilience.

The future of our landscapes will be most affected by our willingness at adjust our mindscapes to the realities of the twenty first century. Whilst there are economic and technical dimensions to the deteriorating ecological and social conditions in rural Australia it is fundamentally a challenge of governance. It is the challenge of how we design and use institutions and political power in the public, private and community sectors to manage our affairs[3].

Transformational change

Just as we dramatically transformed Australian landscapes over the past century we now need in the twenty first century transformational change in policy and programs to put land management, land managers and agriculture on a new trajectory. Living in the past or fiddling at the edges of past policies and programs won't take us to where we need to go.

This is not a new call and nor is it unique. Mick Keogh, Executive Director of the Australian Farm Institute, articulated it a decade ago.[4] It is the recurring theme in the reports listed later in this paper.

Whilst there are economic and technical dimensions to the deteriorating ecological and social conditions in rural Australia it is fundamentally a challenge of how we design and use institutions and political power.

Transformational change is necessary because we continue to degrade our natural resources, aggregate farm profitability continues to decline and we lose social resilience.

Transformational change is not only necessary, it is timely and possible.

- Community concerns about environmental and animal welfare management create the political window for support for better land management
- Consumer concerns about environmental and animal welfare management and increasing standards of living in our major markets create the opportunity to market ethically differentiated products into higher priced higher margin markets
- Land managers increasingly appreciate the synergies between good environmental and animal management and farm profitability
- Improved technology particularly in communications enables the rapid evolution of consumer driven markets, and
- Increased public sector fiscal constraints should drive public sector innovation
- Businesses need to retain and strengthen their social license to operate

Transformational change is necessary because we continue to degrade our natural resources, aggregate farm profitability continues to decline and we lose social resilience.

These and related factors create opportunity to align commercial and non-commercial drivers for better land management, to integrate natural resource management policies and programs with commercial opportunities provided by consumer preferences for ethically differentiated products, and to capitalise on the increased appreciation by land managers of the synergies between good environmental and animal management and farm profitability. But to date it is opportunity foregone.

Essentially what is required to rectify this situation is to better align commercial and non-commercial drivers for better land management through:

Three steps to better align commercial and non-commercial drivers for better land management

- For landholders to embed improving environmental and animal welfare outcomes in their everyday business management
- For industry organisations and governments to support well designed outcome verification systems that enable our Landcare credentials to help drive continuous improvement in profitability and environmental and social resilience hence making Landcare more relevant to mainstream agriculture
- For there to be significant changes in how support is provided to land managers so as to more fully leverage landholder investments, to better align public and commercial drivers of continuous improvement, to provide on-going support for better outcomes, to reduce transaction costs, to remove ineffective accountability arrangements and to have monitoring and recording of outcomes to guide adaptive management.

Past performance

Australia could have done all this over the past decade. Instead we put our faith in the same old systems, policies and processes, hoping we could turn it all around. Unfortunately, our wins were meagre, and our losses further eroded our land, finance and skill base.

In short, we blew it.

We blew it notwithstanding that taxpayers spent about $200 million on national Environmental Management Systems (EMS) programs, the national Environmental Stewardship program and, particularly in Queensland, on Best Management Practice (BMP) programs. None of these or related investments has led to a sustained and coherent approach to natural resource management policy and program design and delivery. Sadly neither the current 20 Million Tree Program nor the Green Army program addresses this basic objective.

Changes over the past decade in policies and programs have not lead to a sustained and coherent approach to natural resource management.

Many of the deficiencies common across these programs were identified in various reports[5] over a decade ago and are well illustrated by a recent scathing report by the Queensland Audit Office on the capacity of Grazing and Sugarcane Best Management Practice programs to contribute to improving water quality in the Great Barrier Reef.

The Audit Office report[6] concluded that these management practice programs are not achieving the changes needed to realise the Reef Plan goal and observed that:

- The 2013 Reef Plan places a high emphasis on voluntary actions and market based drivers to achieve outcomes without clear mechanisms to support this approach
- With Grazing BMP and Smartcane BMP there is no obligation on producers to alter their practices, have their practices verified or invest in capital improvements
- There is a lack of clear, appropriate incentives and disincentives in the design of these BMP programs
- The extent of change is not being comprehensively monitored at the farm level

Audit report critical of existing programs

The release of the 2014 Great Barrier Reef Report Card[7] has prompted considerable public commentary[8] focused on the minimal full adoption of BMP by landholders. However, deeper and broader analysis is warranted to highlight the full suite of design deficiencies including:

- The single industry nature of the programs notwithstanding the multi industry nature of most Australian farms[9] and of post farm agribusinesses

Minimal participation not the only problem

- The lack of features necessary for capturing market benefits, in particular lack of adoption of internationally recognised environmental management standards, lack of credible external auditing, lack of registration as a certification trade mark and lack of independency from organisations whose prime role is industry advocacy[10]
- Lack of emphasis on farm based monitoring and auditing of environmental outcomes.

The winds of change

Despite these kinds of deficiencies being identified, there has been limited innovation in natural resource policy and program design, including in the Landcare space. Changes that were implemented have been at best incrementally useful or, at worst, not helpful. There are few signs of this changing within government and industry organisations. However, the momentum for structural improvement is building within civil and academic institutions.

Over the past year there has been an avalanche of highly credible reports recommending a broad suite of reforms including supporting the direction taken by the ALM Group

Over the past year there has been an avalanche of highly credible reports recommending a broad suite of reforms including supporting the direction taken by the ALM Group. These proposals provide substance to the earlier commitment in the Australian Government 'Australia in the Asian Century' 2014 White Paper to clearly identify our 'clean, green and environmentally friendly' credentials.

- *World Wildlife Fund (WWF)-Changing Land Use to Save Australian Wildlife (December 2014)*[11] -The Australian Government should promote the establishment of credibly certified , ecologically sustainable and low biodiversity impact agriculture by assisting with the development of a certification system, assisting certified agricultural operations, and supporting the marketing of products from certified farms.
- *Expert Working Group, Securing Australia's Future (May 2015)-Australia's Agricultural Future: Returns, Resources and Risks*[12] –Observed that public support is required to develop and trial market-based mechanisms to better align the incentives to farmers in their use of natural resources and the community's values for these resources and recommended joint industry and public support is needed to develop voluntary land-use, environmental and animal welfare certification schemes supported by regulation, where necessary, to preserve and enlarge access to markets that value these characteristics.

The momentum for better natural resource management policies is building within civil and academic institutions.

- *Lockie, S. Australia's agricultural future: the social and political context. Report to SAF07 – Australia's Agricultural Future Project, Australian Council of Learned Academies, Melbourne (2015)*[13] - In no small way, the future prosperity of Australian agriculture will depend on its ability not simply to manage threats but to proactively engage with and exceed buyer and consumer expectations. While some will be able to exploit markets for products with specific environmental, cultural or quality claims, others will find that exceeding expectations is simply a baseline requirement of secure market access. Market opportunities for agricultural produce that cannot demonstrate desired quality attributes –including social and environmental responsibility – will be increasingly limited and at risk of relegation to low value residual markets.
- *Wentworth Group of Concerned Scientists (June 2015)-Blueprint for a Healthy Environment and a Productive Economy*[14]-Identified four opportunities to mobilise people and markets at a scale needed to create healthy and productive landscapes, including the development of voluntary, industry-based farm certification, supported by strong and effective regulation based on international standards, so that suppliers, retailers and consumers can have confidence, and farmers can receive financial benefits for managing their farms sustainably.
- *Australian Council of Learned Academies (July 2015)-Australia's Agricultural Future*[15]-Observed that Australia's reputation for 'safe, clean and green' food is a major comparative advantage that needs to be sustained and underpinned by internationally recognised standards and certification
- *Centre for Policy Development (August 2015)-From Vicious to Virtuous Cycles: A Sustainable Future for Australian Agriculture*[16]-There is a strong case for targeted government support for verification programs and research that can track and demonstrate the financial and ecological potential of first-practice supply chains and financial services.

Setting the policy and program sails

Excessive high level emphasis on prescriptive details leads to a lack of attention on policy and program design.

Innovation in natural resource management policy and program is constrained by interplay between a disconnect between civil society and academics on one hand and industry and government policy and program advisers on the other, by a lack of attention to improving policy settings and by organisational rigidity. The overall impact is an excessive high level emphasis on detailed refinement of and prescription within existing policies and programs with a consequent lack of attention to the setting of policy and program frameworks to support policy and program innovation.

Lack of understanding is not a primary constraint to innovation in natural resource management policy and program

Whilst land management itself remains complex requiring high levels of creativity and adeptness we now have the foundations for determining what is needed and achievable to innovate in land management policies and programs. The ways forward to improve land management policies and programs have been well researched from a range of perspectives. Greater understanding is always a bonus but lack of understanding now is not a primary constraint to innovation in natural resource management policies and programs.

Too often those positioned to improve overarching governance arrangements self-relegate themselves to operational matters

A related problem is the tendency of those positioned to improve overarching governance arrangements to self-relegate themselves to operational matters and advocacy of particular technical options which would be better left to organisations and individuals closer to the land management work face. This reflects the tendency for people in positions of influence to do the job one down than to grapple with the new challenges of the job one up. It seems to be an unfortunate truism that it is easier to do the job one down than to grapple with the new challenges of the job one up.

The charters of industry organisations and publicly funded project and partnership programs often make it difficult to innovate beyond the rigid boundaries of the existing institutional framework.

Let me use just a few contemporary examples to illustrate one or more of these intertwining constraints.

- The first example concerns the Queensland Government decision to apply existing regulatory requirements[17] in relation to farm nutrient and chemical discharge affecting the Great Barrier Reef. Industry response has been to allege undue influence from civil society, whereas the government's decision is more likely a response to the adverse findings of the Queensland Audit Office against current voluntary industry best management programs. It seems that neither the government nor the industry has the will to grapple with the fundamental program design deficiencies identified in the Audit Office report. Without addressing the design deficiencies in current programs, or the governance frameworks that inhibit such progress the overall outcome is likely to be a dog's breakfast of policies lacking cohesion, longevity and landholder goodwill.
- The second example is that illustrated by an article by the Australian Soils Advocate in 'The Australian'[18] wherein the author passes up an opportunity to advocate for a resetting of policies affecting land management. Instead, inter alia, he advocates for particular land management strategies, some of which would have questionable broad scale relevance.
- A third example concerns the prescription in the national 20 Million Tree Program prohibiting support for fencing notwithstanding the effectiveness of excluding grazing in the establishment of endemically germinated and planted trees. A similar prescriptive approach was taken in the now discontinued Biodiversity Fund Program wherein three strategies were prescribed for improving biodiversity. This attention to detail at the national level crowds out higher level consideration of the likely effectiveness of picking winners for project support or of the effectiveness and efficiency of the narrowly focused short term project-based allocation mechanism.

We have the analysis, experience and knowledge necessary for innovation in natural resource management policies and support programs. Land managers, taxpayers and the community have much to gain from such innovation, as do our rural landscapes.

Improving performance

It is one thing to have well articulated and supported frameworks for innovation as presented in the abovementioned reports but another to use them to effect. Arguably the deficiencies these recommendations seek to address have persisted because of inadequate analysis of the need for government intervention, excessive reliance on 'push' at the expense of 'pull' instruments, and poor governance. It is critical that future government policies and programs take account of these considerations.

Determining if there is a role for government

Determining whether there is a role for government should be based on the nature of the outcomes sought and not on the nature of the instruments that could give effect to delivering those outcomes

Determining whether there is a role for government should be based on the nature of the outcomes sought and not on the nature of the instruments that could give effect to delivering those outcomes. This is primarily a question of identifying whether there is market failure[19].

Time and time again this simple guideline is not applied. For instance representatives of environmental advisory and policy agencies wrongly conclude that, if there is a need, markets themselves will establish environmental verification systems. Applying the same logic more broadly would have us leave it to markets to establish environmental regulation.

In 2013 the World Bank International Finance Corporation[20] concluded that to enhance the role of voluntary standards in progressing to sustainability there is a need to:

- Safeguard the credibility of claims about compliance with standards
- Promote demand and supply and improve systems to link demand and supply
- Develop effective and cost-efficient systems with a model that enables innovation and scaling
- Have complementary instruments that create the prerequisites for producers to achieve certification.

None of these requirements is or was met by current or past programs[20]. However this could be rectified to a very significant extent and without major disruption by:

- Providing support funding to verification systems that are relevant and robust, for instance to those that are ecologically and spatially robust, that verify continuous improvement and that meet ACCC requirements for registration as a certification trade mark
- Using verification systems that meet necessary criteria as mechanisms to deliver support to landholders delivering continuous improvements in natural resource management
- Supporting development of relevant software tools and smart phone apps to improve the effectiveness and efficiency of verification systems, particularly for monitoring, recording and collation of environmental improvement
- Ensuring best practice in developing and supporting environmental regulation and to support relevant research and development

The market is a potent driver of behaviour. However, continuous improvement in environmental management is most effectively driven by a balance of intrinsic and extrinsic motivation; that is by non-priced, priced and regulatory forces.

Intrinsic motivation is a major determinant of the creativity and insight so necessary to deal effectively with complex challenges such as achieving good land management. It arises from the satisfaction of achievement beyond any consequential external rewards. Excessive reliance on extrinsic motivation (financial rewards; regulation) can constrain intrinsic motivation.

The other critical factor of course is that there needs to be a reasonable expectation that government intervention will improve outcomes.

Determining the nature of government intervention

Given the variability and complexity of circumstances governing land management it is necessary to have flexible uses of complementary instruments with a prime focus on removing the causes of market failure rather than on treating the symptoms of market failure. For instance in many situations it would be more effective and cost efficient to support approaches to enable commercial drivers for improvement to evolve rather than to fund remedial works. Such an approach strengthens the drivers for continuous improvement and hence the motivation for identifying and determining strategies to improve environmental outcomes.

The prime focus should be on removing the causes of market failure rather than on treating the symptoms

A substantial proportion of the resources spent by public sector agencies on capacity building and related 'push' interventions could be more effectively allocated to establishing 'pull' recognition systems for continuous improvement. These 'pull' recognition systems would meet the needs of landholders and food and fibre markets as well as providing an effective and efficient pathway for the allocation of taxpayer support for improved environmental outcomes. In this simple way public investment would align public and commercial drivers of continuous improvement, would leverage private investment, would help create competitive delivery of private sector services and be delivered with low transaction costs.

A greater emphasis on rewarding outcomes would stimulate motivation and innovation in how landholders augment their capacity to continuously improve environmental management in ways well aligned to their commercial drivers. Additionally it would deliver substantial reductions in transaction costs inherent in the public sector project funding model, which now is the predominant form of providing financial support to land managers[21].

Governance arrangements

Governance arrangements[22] for improving land-based outcomes have not kept pace with changing community beliefs and values. Too often new environmental initiatives have been grafted into organisations whose charters, structures and processes are not well suited for those initiatives.

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For instance organisations with charters to service all landholders are constrained by the considerable variation in the attitudes of landholders to community influence in land management leading to resources being expended on approaches that do not have the robustness, credibility or scalability required to deliver improved outcomes and benefits for participating landholders. Often such programs are not designed to deliver market benefits and consequently are at the mercy of funding continuing to be solely provided from industry levy and/or public funds.

Organisations structured around a single industry or region might not be best suited to implement whole-of-property landscape linked initiatives on a national scale particularly given that about three quarters of agricultural produce by value is produced by two thirds of landholders operating two or more industries.

The way public funds have been allocated is difficult to comprehend[23]. For instance why have public funds been provided for verification of environmental credentials on less than a whole-of-property landscape-linked basis, for approaches not conforming to Ministerially endorsed guidelines for application of environmental management systems, without due contestability and to organisations with charters that restrict their capacity to apply the programs nationally and across industries.

In spite of these deficiencies some participating industry organisations and natural resource management agencies are, at best, reluctant to provide landholders with alternative programs. Innovative landholders and taxpayers are the losers.

Practical application

A practical approach to improving Landcare would be to instil continuous improvement into every aspect of day-to-day business while achieving internationally recognised certification for such achievements. Certified Land Management is that approach.

The ALM Group has designed, tested and refined the Certified Land Management (CLM) system that operates on a whole-of-property basis to assist and verify improved environmental and animal welfare management.

Certified Land Management (CLM) complies with internationally recognised environmental management standards, meets the ACCC requirements for registration as a certification trade mark and can be applied by landholders with no greater complexity or cost than programs without those credentials and without the credibility flowing from universal annual external auditing against process and outcome standards.

In 2003 the not-for-profit Australian Land Management Group (ALM Group) was formed to improve environmental outcomes in ways that enable landholders to benefit from their achievements. The ALM Group has designed, tested and refined the CLM system that operates on a whole-of-property basis to assist and verify improved environmental and animal welfare management.

Conclusion

There is a pressing need and great opportunities to improve the institutional arrangements affecting how Australians farm. In particular there needs to be a forensic examination of the interplay and independencies between industry and government organisations and of how work in academia and civil society might be brought to bear on the reform of institutional arrangements.

There is much hype surrounding many existing programs. These are typically narrow in focus, do not support ongoing landholder application, and will not adequately deliver for fast-emerging market opportunities. Only poor governance arrangements enable their survival.

Over the past decade or so governments, their advisory bodies and farm organisations have let politics and fear stymie innovation to improve ecological sustainability and related improvements in agricultural competitiveness; no less so in Landcare than elsewhere.

This is no time for complacency. It is time to break from encircling constraints and move quickly with appropriate innovation. The benefits of improved trade access for Australian agriculture will quickly dissipate if we don't lock in competitive advantages. The opportunity is there; if we don't grasp it others will.

Notes

1 www.almg.org.au

2 Natural Capitalism-The Next Industrial Revolution. Paul Hawken, Amory B Lovins and L Hunter Lovins 1999 ISBN 1 85383 461 0; The Future of Governance-Policy Choices. Ed. Glyn Davis and Michael Keating 2000 ISBN 1 86508 310 0; What Money Can't Buy-the Moral Limits of Markets. Michael Sandel.2012 ISBN 978 1 846 14471 4; Why Nations Fail-The Origins of Power, Prosperity and Poverty. Daron Acemoglu and James A Robinson 2012 ISBN 978 1 84668 429 6; Landcare in Victoria Ed. Rob Youl 2006 ISBN 0 9775240 0 ; Global Megatrends-Seven Patterns of Change Shaping Our Future. Stefan Hajkowicz 2015 ISBN 9781486301409; Natural Capital-Valuing the Planet. Dieter Helm 2015.

3 In 'Why Nations Fail' Acemoglu and Robinson present a compelling analysis showing that nations and individuals prosper with inclusive rather than with extractive economic and political institutions with inclusivity being characterised in part by open participation and the creative destruction that goes with innovation. Arguably in agriculture an overreliance on long established extractive institutions has constrained innovation to meet changing beliefs, values and aspirations in the broader community. See also Australian Values - Rural Policies: Symposium proceedings.Gleeson, Turner and Drinan (2005) Rural Industries Research and Development Corporation. https://rirdc.infoserbvices.com.au/items/05-009.The Symposium brought together people with a common interest in rural policy. It was born out of a concern that what is happening in rural Australia is not well aligned with what rural and urban Australians want for rural Australia.

4 http://www.farminstitute.org.au/publications-1/farm-policy-journals/2005-august-marketing-on-farm-environmental-services- 'On-farm natural resource management is an area of Australian farm policy sorely in need of serious innovation. It seems the whole policy area is locked into a mentality of regulatory decrees and five-year plans and indifference to measuring real outcomes. Leadership is required of governments in taking a much bolder and more sustained approach to the use of market-based-instruments (MBIs) as a core component of natural resource management (NRM) policies, underpinned by sensible, outcome-focused regulations. The focus should be on mechanisms that maximize real improvements in NRM by involving farmers as willing volunteers rather than as surly conscripts'.

5 See for example P. Roland (2005) Environmental management in rural Australia https://rirdc.infoservices.com.au/items/05-157 ; Gleeson and Carruthers (2006) What Could EMSs Offer Land Management in Rural Australia? *Farm Policy Journal:* Vol. 3 No. 4: November Quarter 2006.

6 Managing water quality in the Great Barrier Reef Catchments www.qao.qld.gov.au/report-20:-2014-15

7 http://www.reefplan.qld.gov.au/measuring-success/report-cards/

8 See for example www.abc.net.au/news/rural/programs/qld-country-hour

9 About three quarters of Australian food and fibre products by value are produced on two thirds of farms that operate two or more industries with, for instance, only eleven percent of beef by value being produced on beef only properties.

10 Consumers and public agency purchasers of ecosystem services, including ethically produced food and fibre products, seek verification of credentials arms length from industry advocacy organisations and commercial corporations. This requirement is heightened by instances such as is currently illustrated by allegations against Volkswagen.

11 http://www.wwf.org.au/news_resources/resource_library/?11441/Changing-land-use-to-save-Australian-wildlife

12 www.acola.org.au/PDF/SAF07/returns%20resources%20and %20 risks.pdf

13 www.acola.org.au/PDF/SAF07/social%20and%20political%20context.pdf

14 www.wentworthgroup.org/2014/11/blueprint-for-a-healthy-environment-and-a-productive-economy/2014

15 www.acola.org.au/PDF/SAF07%20full%%20report.pdf

16 www.cpd.au/category/publications/policy-paper

17 http://statements.qld.gov.au/Statement/2015/10/5/new-program-to-get-the-basics-right-on-reef-water-quality

18 The Weekend Australian October 3-4, 2015 page 23. http://soilsforlife.org.au/blog/SoilsforLife-Blog/post/every-drop-is-precious-efficient-water-plan-may-help-prevent-chaos/

19 Market failure occurs when markets don't deliver optimum social outcomes. For land management this is primarily due to land managers not bearing the full costs of environmental damage or to not being able to fully capture the benefits due to some outcomes fully or partly being public goods and to offsite effects. Additional causes of market failure include legislated and other charters that fragment effort across different industries operating on the same property and the absence of mechanisms to effectively embed environmental credentials in the marketing of the food and fibre products.

20 Building a roadmap to sustainability in agro-commodity production (2013). Commissioned by International Finance Corporation, World Bank

20 EMS, Stewardship Program and BMP as listed earlier.

21 Project funding is a major but seldom critiqued form of government support for improved environmental performance. It came into major use in the late 80s with the beginning of the Decade of Landcare. This was the beginning of a move by the Federal government to use project funding to support on-ground works. These were largely remedial projects and arguably not sufficiently linked to mainstream agricultural investments. It was also the beginning of a withdrawal by States of support for soil conservation and related causes. The 90s and the 00s saw the Natural Heritage Trust Funds One and Two, the National Action Plan for Salinity and Water Quality, Environmental Management System Programs, the National Environmental Stewardship Program and Caring for our Country. We also had the rise of regional bodies as planning and fund distribution agencies. Billions of dollars have been distributed through these programs, primarily through short term project grants. Given the emphasis on sustainability it is ironic that even the web sites for many of these programs have been decommissioned.

There are major problems with a heavy reliance on project funding to support continuous improvement in natural resource management. The majority of project funding has little or no ongoing impact on the bulk of the private investment. Having defined natural resource management (NRM) as the management of our impacts on the environment I estimate the ratio of public expenditure to landholder expenditure at most to be in the order of one to 200. Unless the one dollar is effectively used to improve the impact of the 200 then it is, to put it nicely, a sheet blowing in the wind. The duration of funding is totally out of kilter with ecological and commercial considerations. The transaction costs are very substantial-in financial, skill and motivational terms. Accountability arrangements are costly, ineffective and de-motivating. Project funding relies on processes for picking winners largely externalised from and not customised for commercial business. We can do it much better.

22 Governance is the exercise of political power to manage a nation's affairs. It is exercised through the overall network of institutional arrangements. Institutions include traditions and the norms and practices of groups, the organisations formed by government, industries and communities and their policies and programs, laws, regulations, codes of practice and the operation of markets. Institutions are the determinants of individuals to act in the public good. Whilst there are economic and technical dimensions to the deteriorating ecological and social conditions in rural Australia it is fundamentally a challenge of governance. It is the challenge of how we use political power in the public, private and community sectors to manage our affairs. It is a problem requiring considerable insight and creativity (see Gleeson and Piper (2002) Institutional Reform in Rural Australia in Property: Rights and Responsibilities: Current Australia Thinking. Land & Water, Canberra and Australian Values-Rural Policies at http://www.bing.com/search?q=rirdc+gleeson&qs=n&form=QBRE&pq=rirdc+gleeson&sc=0-0&sp=-1&sk=&cvid=f8b6826c5ef248ce82ec75685d4d0c45

23 In 2002 Federal and State Ministers endorsed a National Framework for Environmental Management Systems. Subsequently the Federal government created the National EMS Program followed by the National Pathways to EMS program. Under pressure from industry organisations neither program adhered to the agreed framework. The cost to landholders and taxpayers was substantial. The NFF/Federal Government Environmental Stewardship program was created in 2008 primarily to protect the Box Gum Grassy Woodlands. My back-of-the-matchbox estimate put the cost to the taxpayer of covenants for up to 15 years in the vicinity of three times the commercial value of the land covenanted. The taxpayer cost exceeded eighty million dollars. This would have funded a well-designed expanding national Continuous Improvement Program for over a decade. I and another who should remain nameless did a rough calculation on the first round of the Caring for our Country program. We estimated the cost of planning, applications, evaluations and contracting to be equivalent to the amount available for allocation-all that before any project began.

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