



Australian Government

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Building global sustainability through local self-reliance

Lessons from landcare



Monograph 219

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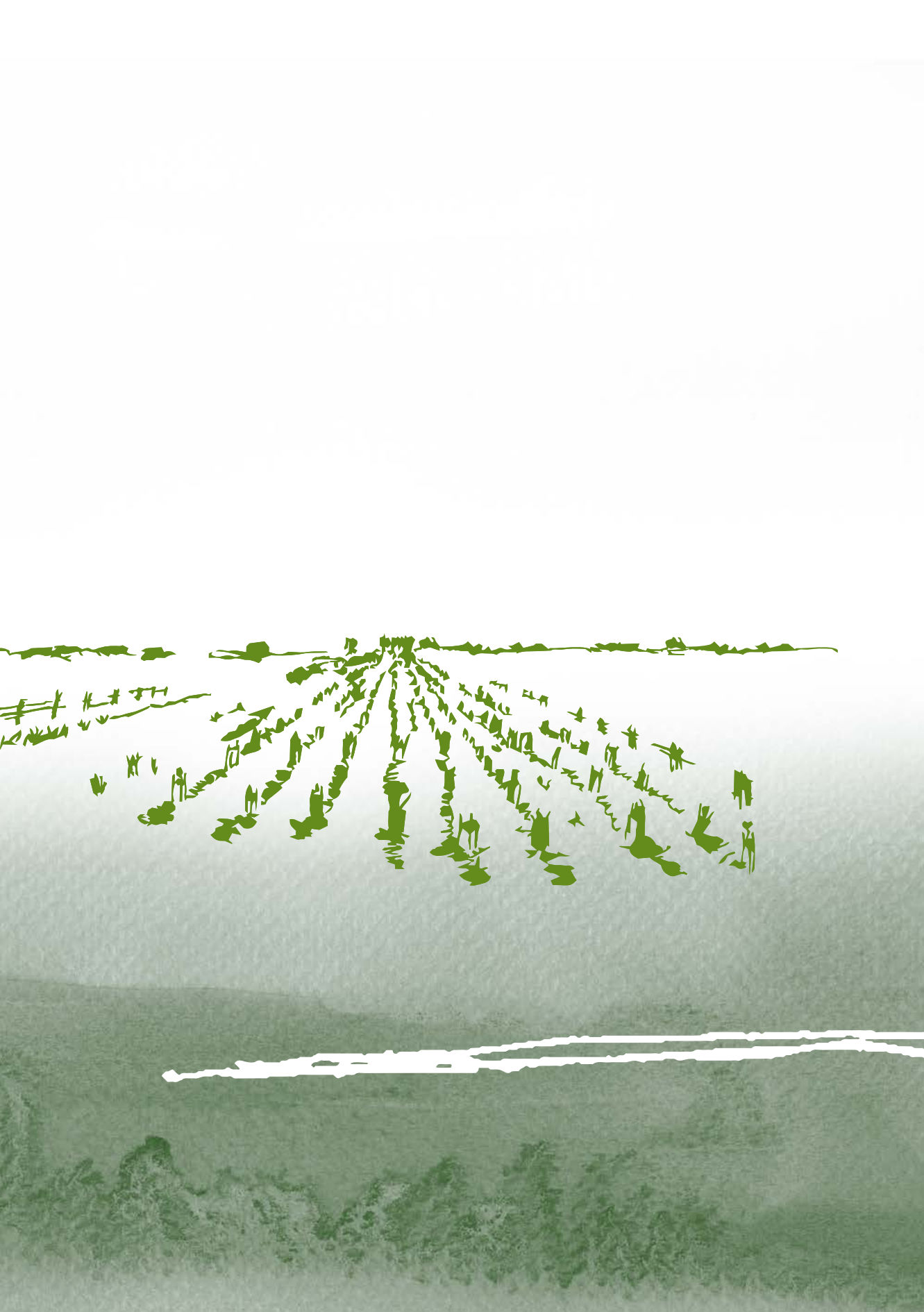
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List of shortened forms

ACIAR	Australian Centre for International Agricultural Research
AMAEP	ACIAR Mindanao Agricultural Extension Project
AT Uganda	Appropriate Technology Uganda
CAO	City Agriculture Office
CBDRR	community-based disaster risk reduction
CBRM	community-based resource management
CENRO	City Environment and Natural Resources Office
CGIAR	formerly the Consultative Group on International Agricultural Research
CLEA	Community Learning for Environmental Action
CSIRO	Commonwealth Scientific and Industrial Research Organisation
FAC Net	Fire Adapted Communities Learning Network
GDP	gross domestic product
ICM	integrated catchment management
ICRAF	International Centre for Research in Agroforestry
IUCN	International Union for Conservation of Nature
KADLACC	Kapchorwa District Landcare Chapter
KCLID	Kagawa Canal Land Improvement District
Landcare Australia	Landcare Australia Limited
LID	land improvement district
LIFE	Livelihood Improvement through Facilitated Extension
NAACP	National Association for the Advancement of Colored People
NAADS	National (Uganda) Agricultural Advisory Services
NRM	natural resource management
NUISE	Nanzan University Institute for Social Ethics
OBLA	Olo-clofe B'laan Landcare Association
OECD	Organisation for Economic Co-operation and Development
PCAARRD	Philippines Council for Agriculture, Aquatic and Natural Resources and Development
PULL	PCAARRD-UP Mindanao-Landcare LIFE
ROCP	Regional Onsite Conservation Program
RMIT	Royal Melbourne Institute of Technology
SDGs	Sustainable Development Goals
TOFA	Tuban Organic Farmers Association
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHCR	United Nations High Commissioner for Refugees
UNU-LRT	United Nations University Land Restoration Training Programme
WWF	World Wide Fund for Nature



PART B

Developing local resilience and sustainability

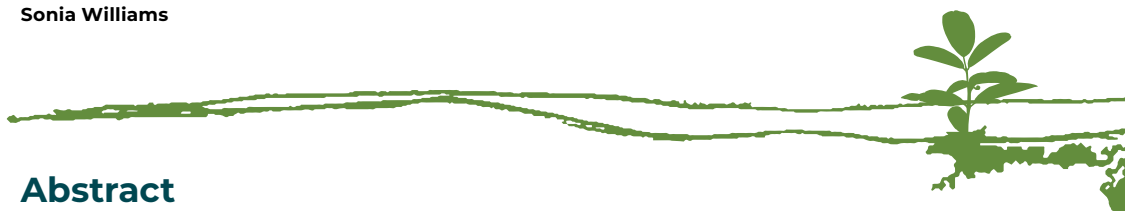




CHAPTER 4

Looking after our own backyard: understanding critical factors enabling self-reliance in local communities

Sonia Williams



Abstract

To address the issue of global sustainability in a way that is itself sustainable, programs must build the local self-reliance that allows for community ownership of both issues and solutions. In Australia, the initial Decade of Landcare Plan was successful in fostering community self-reliance through the support of locally appointed staff and resourcing of locally determined environmental projects.

Landcare as a term is widely recognised, but the philosophy and model underpinning its initial success is not as well understood. Landcare isn't just about natural resource management, sustainable agriculture or sustainable living. It embodies an ethic and process that allows those affected by change to be a valued part of that process. In this chapter, I use my nearly 30 years of involvement in Landcare to reflect on the changed approaches to the delivery of Landcare support programs and the impact of this on factors critical in building self-reliance. New approaches have seen programs focused on counting the immediate physical on-ground outputs from investment, rather than on building self-reliance. New programs have been designed for delivery to the community rather than designed with the community. They deliver community engagement activities, rather than activities that build engaged communities. Over this time, the community's involvement and co-investment has waned.

If we are to foster self-reliance, it is important that future programs recognise that we are in the people business. Rather than focusing on on-ground outputs, programs must be built around the critical factors that foster self-reliance, enabling communities to contribute to global sustainability by looking after their own backyard.

Introduction

What is self-reliance and how can it be fostered? The Oxford English Dictionary definition is 'reliance on one's own powers and resources rather than those of others'. From this, it could be assumed that building self-reliance is a naturally self-fulfilling action, as it draws upon one's own powers and resources. To some extent this is true. Human nature, Darwin's theory of survival of the fittest and Maslow's hierarchy of needs ensure that, in general, people will behave to ensure that they survive in the here and now. This, however, is often at the expense of, or could have harmful consequences for, the longer-term sustainability of our communities and the environment.

To address the impacts and effects of human interactions and natural disruptions that negatively affect global environmental health, governments, non-government organisations and the general community invest (through donations and volunteer involvement) in efforts and programs designed to improve global sustainability. Programs that invest merely in the issue at hand rather than fostering self-reliance only move the ownership of the issue, and therefore the responsibility, onto others. If we are to address the issue of global sustainability in a way that is itself sustainable, it is important that programs foster the self-reliance that allows for community ownership of both the issues and the solutions. This way we all become responsible for looking after our own backyards!

Several chapters in this book will discuss the critical role that self-reliance plays in achieving global sustainability from both an academic and policy perspective. I hope to contribute to this by providing a perspective that is based on my nearly 30 years with Landcare.

Reflections from 30 years of Landcare involvement

My involvement with Australian Landcare has ranged from being part of a farming family and a voluntary group project officer to holding professional positions, including working as a district Landcare coordinator, an executive officer of both a subregional and regional Landcare network, a general manager of a state-based community Landcare peak body, and now a state Landcare facilitator, delivering a community-based Landcare support program. I am also actively involved with the National Landcare Network, a nationwide body with membership drawn from the state and territory peak Landcare bodies across Australia. During this time, I have come to understand, from both a grassroots perspective and the policy interface, the factors that build or hinder the development of community self-reliance.

When I became part of a family farming business in the New England region of New South Wales, I thought that I would be fairly well equipped for this role. Despite having a city upbringing, I was armed with a degree in rural science. I quickly learned, however, that academic knowledge was merely a part of the complex range of knowledge required to manage a productive and profitable farming business. I credit my father-in-law for sharing his practical knowledge with me and teaching me that knowledge doesn't always come from formal academic endeavour.

Along with our neighbouring farmers, we faced many challenges, including drought, decreased persistence of pastures, and stock losses in the cold New England winter (a problem exacerbated by lack of shelter resulting from the dieback of native trees). The great push for increased agricultural productivity in the past was now damaging the health of the ecosystem that had previously enabled agricultural production in the region.

Government programs had encouraged and supported this unsustainable development, from compulsory ringbarking and clearing of trees in the early 1900s, through to a superphosphate rebate to offset the cost of adding fertiliser to the landscape. This productivity boost, which allowed for a threefold to sixfold increase in stock-carrying capacity, built the economic prosperity of the region. It came, however, at an environmental cost that was not evident at the time.

Landcare, the great experiment of cooperation between the Australian Conservation Foundation and the National Farmers Federation, with financial commitment from the Australian Government, was a catalyst for change. It provided professional staff (some skilled in community development and some with natural resource management (NRM) knowledge, but few with both) and incentives that encouraged involvement. Landcare supported community members to work in local groups to learn about factors that impacted on their own sustainability. Importantly, it valued the experience and knowledge of local communities in designing programs and processes to address these factors.

In 1989, my husband, Ted, along with our neighbours, formed the Harnham Landcare group. This group comprised 14 farming families operating across the Kentucky area of the New England tablelands. We shared our concerns and knowledge, learned from others and supported each other in changing our farming practices. During the Decade of Landcare, our group grew from 14 families to 45. We focused on restoring habitat and shelter across the landscape through planting and remnant protection, improving soil health and addressing erosion. We investigated how these approaches could improve our bottom line, both at the time and in the future. Just as importantly, we built social capital that forged bonds between community members and across generations. This reinforced people's sense of place and provided a sense of community for newcomers to the area. The Harnham Landcare group involved schools, overseas students and delegations to share what it had learned. We also sought to learn from others.

Harnham Landcare was one of around 2,500 groups formed across New South Wales during the Decade of Landcare, where local communities became empowered to make a significant contribution to global sustainability through increased understanding and ownership of solutions to their own local issues. Fast forward 30 years to 2019 and what do we see? Some of these groups remain strong and operate as successful change agents, leading local action that contributes to improved global sustainability. Many Landcare groups, however, are largely disenfranchised, unsupported and no longer act as a force for change in their communities. To understand why, we need to first understand what Landcare is and what it is not, and then look at why it works well in some cases and why it fails to thrive in others.

Understanding Landcare as a delivery model

Many people view Landcare as undertaking improved practices that result in an improved environment, be it in the natural landscape or on farmlands or in our way of living. Landcare, however, is not an interchangeable term for technical aspects of NRM, sustainable agriculture or sustainable living. Rather it tends to embody an ethic and process that allows for those affected by change to be a *valued* part of that change process. It represents the enabling of communities, who together, identify and understand the issues that affect themselves and their communities. Through supportive processes, Landcare helps them to develop solutions appropriate to their local situation. In aggregate, such local solutions help to meet global needs. Landcare builds trusted partnerships between all involved in dealing with the issue at hand, shares knowledge and encourages innovation.

By working with groups rather than individuals, Landcare not only impacts the immediate decisions of an individual, it also changes the social norms of the community so that each individual's management decisions contribute to a more sustainable future. Landcare uses peer learning and subtle peer pressure to keep neighbours true to their part of the local plan, but also allows room for adaptive learning, innovation and changed adoption methods to suit new and emerging challenges and changed personal circumstances. In short, it is a recognition that *the people in the landscape* constitute the most important factor in NRM.

Working with people and respecting their knowledge, hopes and fears, rather than just having a technical focus on soil, water or vegetation, is the central tenet of Landcare. Landcare provides ownership and the willing co-investment of individuals and communities to build our future. Landcare recognises that the issues facing us are too big for either community or government to tackle independently and, importantly, that the job won't be finished at the end of a single project, a single year or even a single lifetime. This approach encourages all family members to be involved. It recognises that today's children are tomorrow's managers and that their understanding and ongoing involvement is critical.

The Australian Decade of Landcare ended in 2000. It was replaced by regional delivery models and a changed focus of government investment that was more concerned with counting the immediate, physical, on-ground outputs from government investment, rather than building self-reliance. This crucial aspect of the Landcare model has been largely ignored, undervalued or – probably more accurately – just not understood. Landcare investment is now, in the main, delivered by technical NRM or agriculture extension experts who have a regional rather than a district or local perspective. It is delivered *to* landholders and communities rather than being designed and delivered *with* the community.

Although current programs have claimed to have great community involvement, the focus has been on delivering community engagement activities for public works or on-ground programs, rather than building engaged communities that are valued as co-contributors and that invest in programs that produce local outcomes and take us towards global sustainability.

The success of Landcare as a widespread movement acting as a change agent within local communities was the result of a deliberate program of government support delivered under the Decade of Landcare Plan.

Landcare is also not, as many believe, a spontaneous community volunteer movement, although some of the original groups did form this way. Rather, the success of Landcare as a widespread movement acting as a change agent within local communities was the result of a deliberate program of government support delivered under the Decade of Landcare Plan. This plan provided the infrastructural support for the development and operation of groups, empowering them to face the issues that were pertinent to them. Further, it supported and built the skills of group 'champions' who acted as local and district-scale 'drivers', ensuring that groups retained local focus and momentum.

The social fabric developed under the Decade of Landcare included district-based support staff (facilitators or coordinators) who were often already embedded members of the

community. Coordinators built networks that became trusted hubs for information exchange and program development and delivery, and they supported the groups' drivers and champions. This innovation has largely been forgotten in recent Australian Government investment models. Without this locally focused support, many Landcare networks and groups have withered. Many, however, have chosen not to officially close, as Landcare remains important to them. Their ability to actively contribute to solving problems, however, has been greatly reduced as their status and resources have shrunk to essentially voluntary unassisted activities. The trust in government programs and government staff as partners that had been built under the Decade of Landcare has been lost.

Building a statewide approach to landcare support

In 2015, Landcare NSW, the volunteer-led state peak body established by the Landcare community, won state government support to reinstate 60 half-time coordinators for 3.5 years. These coordinators were placed within host Landcare or similar networks. Some 20 months after the appointment of most of these coordinators, the capacity and capability of the host community networks to deliver for their communities and to partner with government varied markedly. Where some level of support continued to exist under the regional delivery model, the groups had regained their momentum. The groups who had barely managed to survive with minimal or no support from their regional bodies found it challenging to rebuild an engaged community.

In many cases, the self-reliance that characterised these networks during the Decade of Landcare had been lost. One example that highlights this comes from a group that was struggling to complete one of the very few set activities required under the program brokered by Landcare NSW. This activity required the group to work with their communities to develop an overall annual action plan. No parameters were set for the outputs that were required, as this program was about each community defining their own goals. Not having predefined deliverables proved to be very difficult until the penny dropped that, in the words of the coordinator, 'We have been chasing the funding bus for so long to survive we have forgotten where we are going.' After this realisation, the group refocused, it rebuilt its membership base and now delivers activities that are valued by its communities. The group's self-reliance has been rekindled through a simple recognition that the communities' needs are the key drivers of their destiny.

The new state-based program has worked with its coordinators and host organisations to rebuild the understanding that first and foremost, they are in the *people* business, as well as the NRM or sustainable agriculture business. This leads me to consider the important factors of working in the *people* business:

- **Place** – working with people on their interests and priorities and involving all within the community
- **Encouragement** – not doing it for people but supporting the drivers in the group to build their skills and confidence
- **Ownership** – ensuring that those who need to live with the change are valued for their knowledge and contribute to the development of the solutions
- **Partnerships** – bringing information opportunities, sourcing technical expertise and resourcing to ensure the best possible outcomes
- **Laughter** – making it fun so people will want to be involved
- **Evaluation** – measuring progress against the group's interests and priorities to provide a sense of achievement or reset direction when required.



Landcare works. We know this from some 30 years of experience.

Landcare works. We know this from some 30 years of experience. Landcare as a model is effective in fostering a community approach to building self-reliance and a recognition by both government and members of the community that the community is instrumental in identifying environmental issues and designing solutions for a more sustainable future. The factors that are critical in fostering self-reliance include program design that builds upon a sense of community, deals with current local issues and provides local support (staff and structures) that is embedded in the community. A bottom-up approach to delivery and experiential learning creates interest and motivation. There is greater trust and acceptance of ideas when information is generated by other landholders and community members. Partnerships with providers external to the community, which are based on equality and respect, coupled with processes that develop an understanding of the issues and solutions brings rigour and ownership. In turn, this encourages local investment (time and money) in the proposed solutions.

Conclusion

Although landcare is widely recognised as a philosophy and a delivery model, it is not well understood. In this chapter, I have used my 30 years of experience in Landcare to understand and explore some of the critical factors that are necessary for ensuring communities are supported to build their self-reliance, enabling them to look after their own backyard and contribute to global sustainability. The key messages of this chapter are as follows:

- The social and environmental changes we need to deal with on a global scale are too big for government or the community to deal with alone.
- Limited government, non-government and other investment is better placed when used to support, build and maintain self-reliant communities that can develop appropriate interventions, rather than undertaking public works-type programs that deliver investment to individuals to achieve countable outputs.
- To involve the community there needs to be recognition that we are in the people business, not just NRM or sustainable agriculture.
- Success comes from designing and delivering *with* communities not *to* communities.
- Community engagement is not and should not be seen as a replacement for building engaged communities.
- Once lost, trust (and real subsidiarity) are very difficult to regain.

Acknowledgements

This chapter is written from a practitioner's perspective. It has insights gained from a vast body of papers, conference proceedings and firsthand involvement at both the grassroots scale and at the interface with policy development and implementation. While I have not referenced any specific papers, I acknowledge and thank the numerous researchers and practitioners whose work has shaped my knowledge and understanding of Landcare.



CHAPTER 5

The meaning of support!

Kaye Rodden and Terry Hubbard



Abstract

The history of Landcare's formation and expansion in Victoria, Australia, and globally is well documented in this book. Landcare commenced as a willing and respectful partnership between organisations that had a vision of a community-led approach to sustainable private land management within a supportive government policy framework that provided foundational resourcing to enable the process. While many people associate Landcare with action to build a sustainable and productive natural environment, what sets Landcare apart is its focus on building resilient and sustainable communities with the capacity to act to repair, maintain and enhance the natural assets in their landscape. These communities become a valuable asset themselves and their ability to add value to investments from elsewhere means that their economic value to governments of all persuasions is significant.

This chapter explores what it takes to provide an environment where this community asset can become self-reliant and regenerative. Self-reliance evolves from communities having confidence in being able to make decisions that are respected, acknowledged and included in government and non-government policies. Policy settings, at every level of government, and subsequent resourcing, need to be developed within a framework that enables this process to occur. This chapter will discuss the experiences of landcarers in Victoria to explain what helps to make a strong, resilient Landcare community and how government can help.

Introduction

There is considerable discussion in this book about how a community-based movement such as Landcare can be 'used' to implement broader community policy. The original Landcare concept aimed to do just that: engage and support communities to implement sustainable landscape management on private land. The result was a win for the government, who were struggling to achieve natural resource management (NRM) outcomes, but it was also a win for the local landholders who were delivered a process that helped them to work across neighbouring boundaries to tackle wicked problems. This was an integrated approach that encompassed a number of land management issues.

The model, trialled first in central Victoria, Australia, was a resounding success. Locals were helped to address their own issues in a collaborative way by sharing knowledge and expertise, and in the process, they built their capacity and confidence to take on more challenges. Other groups followed suit and the landcare movement was formed. There are now over 600 groups in Victoria, with close to 60,000 family members involved. Landcare groups cover 82% of private land and 32% of public land, which is around 65% of the state (National Landcare Network 2018). The vast majority of these Landcare groups are organised into geographically based networks, which provide an avenue for an economy of scale while allowing them to maintain their own autonomy and follow their own objectives. Sharing administrative resources and amalgamating projects offers the potential to increase the size of the funding pie as well as the effective portion each individual group receives.

Landcare, with some help, initially formed to improve productive farming techniques and enhance environmental assets in partnership with others. This has been achieved, but what sets Landcare apart from other NRM groups is its primary focus on building resilient and sustainable communities. This was succinctly expressed by Wonder in his report to the Australian Government that looked at the role of smallholder value chains for food security:

Landcare is driven by its membership and thereby empowers participants to address issues of common interest. Their individual human and accumulated social capital brings skills and expertise as well as cohesiveness and trust to the work of the group, and these are qualities essential for enterprise development as well as NRM (Wonder 2014:3).

Landcare as an asset

Landcare is itself asset. It is a social resource that is integral to the sustained management of the natural landscape of which it is a part. Like other assets, it needs to be nurtured and valued so that it can respond to opportunities and be resilient to threats. If a crop is to successfully establish itself, thrive and mature, it needs certain environmental conditions. Similarly, certain conditions are needed for a Landcare community to establish itself, survive and thrive. When the murmurs of this new radical movement first surfaced over 30 years ago in Victoria, the seeds already existed. In this case, 'the seeds' were a strong community framework where individual landholders knew and trusted each other. People can't be forced to cooperate if there is no relationship or trust and goodwill. The ground was also 'fertile' – there was already a common purpose or a clear set of priorities underpinning the movement. In this case, these were soil erosion, salinity, pests, weeds and the loss of trees in the landscape. The government and farmers were looking for changes in the way the rural landscape was managed.

The alignment of government and landholder priorities at that time was pivotal. It meant that resources, in terms of administrative support, knowledge and money, were freely accessible. These provided the nourishment needed over an extended period to help the community grow and achieve their common goals. Effectively, even though communities were given the latitude to be autonomous, as opportunities or problems arose, groups grew and spread with the availability of resources. The seed was always in the soil, ready to germinate when the opportunity arose and – given the right growing conditions – to thrive to a sustaining and productive ‘crop’, returning manyfold on the original investment. No farmer would just go out and throw water and fertiliser on bare soil without having some idea what might grow. Nor should the broader community (via government) throw resources around and hope that a resilient, self-reliant community will suddenly appear and change the world.

Landcare is itself an asset. It is a social resource that is integral to the sustained management of the natural landscape of which it is part.

This chapter seeks to address the key question: What does it take to provide an environment where this community asset, like other assets within our landscape, can thrive to a point where it is self-reliant and regenerative? It also seeks to explore what type of support is required to foster resilience in communities so that they can weather the highs and lows of social, environmental and economic conditions that are thrown at them.

Top-down versus bottom-up approaches to support

The top-down approach to support occurs when someone from outside a community decides what the community needs without prior consultation. This may seem expedient at the time and may allay any fear of governments losing control of the process. It might also, perhaps, satisfy the priorities of those making the decision in the short term. It will, however, create a dependent community that has little ownership of the outcomes and that has gained no skills in the process. In these cases, when support is withdrawn, the community returns to the status quo with an embedded handout mentality. There are numerous examples of this approach, often linked to the idiosyncrasies of short-term political cycles: the shifting of funding priorities, the appointment and then removal of support staff and facilitators, and the changing of funding guidelines that demand that groups create competitive consortiums across wide geographic distances, often with people they have never met.

At the other extreme is a bottom-up approach. Community groups are left to their own devices to aggregate, agree on priorities, develop projects and seek partnership support from outside their community to supplement their own resources and social capital. Once again, there are many examples where this has been the case: a community group established to save the local streetscape, library, or hospital, or a group set up to create a local market brand for farm produce. Often these groups depend on a few individuals who have the energy and enthusiasm to maintain the momentum, and they can wither or thrive

depending how long this lasts. Without a succession plan or external support, a vacuum is created when key people leave. To come back to the plant comparison, we have the seed and we have the soil, but without fertiliser and moisture (the support), the plant will not flourish and will eventually die.

The middle ground

Consistent with the subsidiarity principle as defined and explored in this book, the middle ground between top-down and bottom-up governance is where, at its best, the Australian landcare model sits: a fertile ground which, when provided with some external resources, will repay in full and more. Government providing too many resources will drown the crop or wash out the fertiliser. Provide too few resources and the crop will struggle. The dilemma for governments is how to identify the productive soils that have a good seed bed and a community with a vision. They then need to determine what resources are needed and what level of resourcing to add. Provide too many resources and the community is swamped and loses its independence; too few and the community loses traction.

This is the crux of the discussion. What helps to make a strong, resilient community through landcare and how can government help? Experience suggests that the answer lies predominantly in community engagement. There are many definitions of 'engagement' and Victorian landcarers have experienced most of them. Remarkably, the following confusing and often conflicting list of state-based definitions of community engagement include:

- informing the community of policy directions of the government
- consulting the community as part of a process to develop government policy, or building community awareness and understanding
- involving the community through a range of mechanisms to ensure that issues and concerns are understood and considered as part of the decision-making process
- collaborating with the community by developing partnerships to formulate options and provide recommendations
- empowering communities to make decisions and to implement and manage change.

Some of these consultation methods focus on the top-down approach and others the reverse. Some hover in-between. What has worked in Landcare, put simply and supported by others (for example, Curtin 2015), is the following:

- **Invest in talk:** The community is an asset and building relationships takes time and resources. Collaborative conversation is based on trust and integrity.
- **Talk long and talk often:** Discuss priorities – what is working and what is not working.
- **Value the conversation:** Don't shift the goal posts, as trust and relationships are not expendable.
- **Talk before you act:** Walk through the 'door' together.
- **Talk about and acknowledge achievements:** Give credit where credit is due.

In Victoria, recent strategies have put communities at the centre of the planning and delivery of catchment management and NRM. How this is to be achieved is still being resolved, but a key will be investing in conversations and resourcing communities to have the capacity not only to talk, but to also make valuable contributions to the engagement process. There is potential here for an 'honest broker' to be involved in this process – the role that Australia's regional NRM bodies were initially established to play. The danger is that, in attempting to secure their own corporate structure, these organisations often lose sight of the broader goal and become competitors in the funding bids rather than

independent brokers! Even worse, they exhibit a form of ‘conservation imperialism’, as Curtin puts it, mining local initiatives and goodwill without crediting the primary community investors (Curtin 2015:92).

In supporting Landcare, once governments have agreed on investment projects, a balancing act remains. Providing too much support can lead to the volunteer community members losing ownership of their projects, but providing too little or spasmodic support leads to volunteer burnout and disenfranchisement. The policy or support conundrum is that no two Landcare groups are the same, and a simple formula based on a job description and time allocation determined by an external resourcing agent does not work. By the same token, handing over the responsibility of managing a staff member to a volunteer group, while it has the potential to build capacity, is not always welcomed.

The key to providing effective support rests on conversation about its delivery continuing throughout the process. The right support needs to be provided when it is needed, perhaps by supporting a skills audit or bringing groups together to share what is working and not working to generate adaptive feedback. These are the roles that are often supported by organisations like Landcare Victoria. This suggests that success in the provision of support hinges on a long-term commitment to landcare, not fly-in fly-out support. In this instance, Landcare Victoria is playing the role of independent broker for improving the health of community-based landcare. The role is independent of government, and it supports policy forums from the ground up. This approach helps inform strategy development and build policies and strategies needed to support the landcare community to be self-reliant.

Conclusion

Self-reliance in a community evolves from the community being confident about making decisions that are acknowledged, respected and included in government and non-government policies that will have an immediate impact on them. Government policy settings need to be based on a framework that enables this process to occur.

There is an increasing recognition that the community has a pivotal role in delivering global food security and climate change mitigation. Only recently, for example, evidence was published on how better stewardship of land across the globe will have a major role in achieving the Paris Agreement goal of holding global warming below 2 °C (Griscom 2017). Much of this will be achieved on private land by individual landholders. Developing government policies that foster a self-reliant and resilient community framework that supports these landholders, we believe, is the most cost-effective and efficient way forward.

References

- Curtin CG (2015) *The science of open spaces: theory and practice for conserving large, complex systems*, Island Press, Washington D.C.
- Griscom B (2017) ‘*Natural climate solutions*’, *PNAS*, 114(44), accessed 10 January 2021. <http://www.pnas.org/content/early/2017/10/11/1710465114.long>
- National Landcare Network (2018) *National Landcare’s written submission to Prime Minister’s Drought Summit* [PDF], National Landcare Network and Landcare Australia, accessed 21 May 2022. <https://landcare.nsw.org.au/wp-content/uploads/2019/07/Brief-for-Drought-Summit-Oct-26.pdf>
- Wonder B (2014) *Smallholder value chains for food security: a scoping study with particular attention to farmers groups and innovation platforms based on landcare principles*, report to the Australian International Food Security Research Centre (AIFSRC), ACIAR, Canberra.

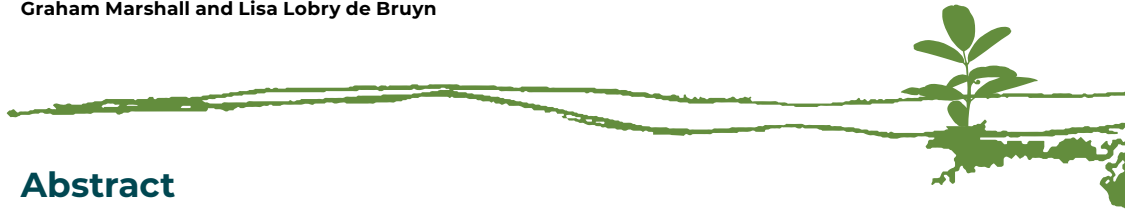


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CHAPTER 6

Community-based governance and global sustainability

Graham Marshall and Lisa Lobry de Bruyn



Abstract

The scale of collective action required for global sustainability is feasible only to the extent that efforts at this level can build on the trust, reciprocity and cooperation already established at lower levels. Such a bottom-up process of building capacities for global sustainability is one of community-based environmental governance, at least where this governance is rightly understood as a nested multilevel system of groups, organisations and governments interacting in accordance with the principle of subsidiarity. The Australian experiment with community engagement in landcare and regionalised natural resources governance is reviewed to inform ongoing attempts to grow the societal capacities required to overcome the collective-action challenges of delivering sustainability at the global level.

Introduction

The concept of sustainable development arose from the General Assembly of the United Nations calling on the World Commission on Environment and Development to formulate 'a global agenda for change'. The resulting landmark report launched this concept while observing that until recently:

the planet was a large world in which human activities and their effects were neatly compartmentalized within nations ... These compartments have begun to dissolve. This applies in particular to the various global 'crises' that have seized public concern, particularly over the past decade (World Commission on Environment and Development 1987: clause 11).

Sustainability continues to be framed as a global problem predominantly in need of global solutions. Critics like Cole (2015) have described this conclusion as a 'facile nostrum', arguing that the global level is but one of multiple societal levels at which global sustainability challenges like climate change and biodiversity decline need to be tackled if progress is to be achieved (see also Berkes 2017). The aim of this chapter is to develop this argument primarily on the basis of advances in the theory of collective action and to illustrate it using the case of Australia's ambitious 'experiment' with community engagement since the 1980s in pursuit of sustainable rural land use. These theoretical advances are discussed in the second section of this chapter. These advances are employed in the third section as a basis for understanding the Australian experiment and the nation's failure ultimately to 'scale up' the extensive voluntary cooperation from rural landholders that arose from this community engagement. This understanding is employed in the fourth section of the chapter to identify pathways through which community engagement supported by complementary governance arrangements (community-based governance) might realise more of its potential to contribute to global sustainability. The fifth section concludes the chapter.

Understanding collective action for global sustainability

The conventional theory of collective action

Administrative rationalism was founded on the confidence that all problems of public administration are amenable to scientific analysis and solvable from afar by a central authority capable of implementing its chosen solutions through an integrated command structure. The presumed opportunism and parochialism of individuals meant that citizenship within democracies was understood as involving little more than periodically casting votes for political representatives (Marshall 2005). This understanding was corroborated by the conventional theory of collective action. This theory is concerned with the provision of collective goods, which include public goods and common-pool resources. The benefits of providing a collective good cannot be captured exclusively by those contributing to provision, meaning others can 'free ride' on their efforts (Olson 1965). When contributors see others free riding on their contributions, they are likely to become discouraged and join the ranks of free riders. As more parties join these ranks, contributions eventually cease.

Provision of a collective good has been characterised as involving a dilemma, since a conflict exists between what is optimal for a group (all members contributing) and what is

in the short-run interests of its individual members (free riding). Such a 'collective action dilemma' is exemplified by Hardin's (1968) account of 'the tragedy of the commons'. The conventional theory of collective action predicts that members of any large group will be unable to self-organise a solution to their dilemma, given that such a solution is itself a (second-order) collective good open to free riding. The collective good can be served only if a solution is organised external to the group. It follows from this conventional reasoning that progress in providing a collective good like global biodiversity that benefits the populations of all nations is infeasible in the absence of centralised intervention at the global level.

A conflict exists between what is optimal for a group (all members contributing) and what is in the short-run interests of its individual members (free riding).

A behavioural theory of collective action

The conclusion that individuals faced with large-group problems of collective action are universally incapable of self-organising remedies for free riding has been challenged by the recognition that such problems are often decomposable into smaller problems (Ostrom 1990) and by evidence on actual behaviour in collective action dilemmas (Poteete et al. 2010). The collective action problem of conserving global biodiversity can, for instance, be decomposed into a series of problems ranging spatially from those of individuals or firms seeking private goods (for example, healthy surroundings, ecotourism profits) to local groups seeking collective goods for their members (for example, recreational fishing from local streams), regional organisations seeking increased ecotourism revenues, provincial governments seeking to satisfy public demands for environmental sustainability, national governments seeking increased export revenues from establishing a national reputation for environmentally sustainable agricultural production, groups of national governments acting bilaterally or multilaterally to further the mutual interests of their respective populations (for example, by protecting habitats within their jurisdictions that are critical to the migration of bird species that are highly valued by those populations) and finally to the global population with its shared interest in biodiversity as a critical requirement for planetary sustainability.

The evidence from research into actual behaviour in collective action dilemmas reveals it is not uncommon for at least some members of a group faced by a collective action dilemma to be predisposed to reciprocity strategies – reciprocating others' contributions rather than free riding. This predisposition can enable these individuals to provide themselves with small-group collective goods (for example, local biodiversity). This research evidence also indicates that once some cooperation becomes established within a population it can spread beyond the initial set of reciprocators through a virtuous-cycle dynamic in which others' awareness of this cooperation increases their trust that their own contributions would be reciprocated. This widens the pool of reciprocators, increasing the level of cooperation, further increasing trust that contributions will be reciprocated, and so on. In this way it can become possible for the provision of collective goods benefiting progressively larger groups within a population to be self-organised by way of interpersonal (or 'horizontal') reciprocity.

Nevertheless, the feasibility of relying entirely on interpersonal reciprocity as a basis for collective action declines as the size of the group involved expands and the number of interpersonal relationships escalates. A point will generally be reached in the growth of collective action within a population where the appointment of a 'third party' is needed to bolster the levels of reciprocity that individuals can themselves afford to undertake, so that the incidence of free riding does not exceed a threshold beyond which trust, reciprocity and cooperation begin to unravel in a vicious cycle (North 1990). This third-party activity can be described as involving 'vertical' reciprocity, as distinct from 'horizontal' reciprocity between group members. Third-party activity of this kind involves negotiating and enforcing the rules by which vertical reciprocity will be exercised. This is a central element of governance, which refers to the 'process by which the repertoire of rules, norms and strategies that guide behaviour within a given realm of policy interactions are formed, applied, interpreted, and reformed' (McGinnis 2011:171).

Governance brings with it the challenge of establishing and maintaining cooperative relationships between third-party structures and the members of the group whose collective action is to be supported. Cooperation in these relationships from group members can take various forms, including voluntary compliance with rules, reporting non-compliance by others and exercising interpersonal reciprocity through social approval or disapproval (Marshall 2011). Cooperation of this kind cannot be taken for granted, and indeed it is not uncommon for it to be weakened by group members adopting strategies of free riding (where group members come to depend entirely on the vertical reciprocity provided by these governance structures) or unconditional non-cooperation (where group members have had unsatisfactory interactions with these or similar structures) in their dealings with these structures (Marshall 2009). The less voluntary this cooperation, the greater will be the costs of monitoring and enforcing the rules, and thus the less cost-effective and feasible will governance be in enabling provision of higher-level collective goods (for example, regional biodiversity) benefiting larger groups (Marshall 2002).

Evidence suggests that individuals are more likely to cooperate voluntarily with governance structures the more they perceive them as supportive of their autonomy rather than controlling.

Evidence from researchers working in the related traditions of self-determination theory (Ryan and Deci 2000) and motivation crowding theory (Frey and Jegen 2001) suggests that individuals are more likely to cooperate voluntarily, or autonomously, with governance structures the more they perceive them as supportive of their autonomy rather than controlling (Ostrom 2000, 2005). The proposition that autonomous motivation, a core element of citizenship (Marshall and Malik 2019), can be strengthened by governance arrangements perceived as autonomy-supporting has been supported empirically by Marshall et al. (2017) in respect of climate governance. It is consistent with the argument that individuals will cooperate voluntarily with governance structures when they trust those structures to support their autonomous endeavours to provide themselves with collective goods, and thus ascribe legitimacy to those structures (Marshall 2004).

Subsidiarity and community-based governance

It follows from this body of research that the feasibility of governance enabling the provision of collective goods to larger groups will be enhanced when group members perceive it to be supportive of their autonomy. The principle of subsidiarity is conducive to establishing such perceptions. It prescribes that governance be structured such that authority in respect of any matter be assigned to the level closest to the individual where it can be exercised competently. Higher levels of governance are understood accordingly as subsidiary to lower-level ones, and ultimately to the individual (Marshall and Stafford Smith 2010). The autonomy of individuals and their proximate governing structures (for example, local groups and associations) is thereby maximised subject to a competency constraint. Governance arrangements designed and administered consistent with the subsidiarity principle accord with the characterisation of community-based governance as 'shorthand for governance that starts from the ground up but deals with cross-scale interactions' (Berkes 2005:34) and of community-based conservation as 'extend[ing] beyond communities to include institutional linkages and multiple levels of organization that impact and shape institutions at the local level' (Berkes 2007:15193).

Community-based governance allows individuals and their communities as much autonomy as they can capably exercise (Marshall et al. 2017). It is a polycentric arrangement in which higher-level governance structures serving larger groups support or 'nest', rather than supplant or sideline, lower-level structures serving smaller groups. Such nesting allows 'smaller organizations [to] become part of a more inclusive system without giving up their essential autonomy' (Marshall 2005:7). Marshall (2008a:41) referred to 'nested community-based system[s] of governance' in view of the common misapprehension noted by Berkes (2007) that community-based governance involves no more than community-level governance. When properly understood as a multilevel exercise, community-based governance offers potential to realise the democratic ideal of people truly governing themselves in solving their problems of collective action at all levels of societal organisation (Ostrom 1991).

The subsidiarity principle applies when deciding whether and how to support the growth of collective action (for example, from the local to regional level) by introducing a higher (for example, regional) level of governance. It requires that entities at any level participate as far as their capacities allow in deciding whether higher-level governance structures are required and how they should be designed and operated (Marshall and Stafford Smith 2010). Absence of such participation can be expected to lead to perceptions of higher-level structures as controlling, and thus undermine autonomous cooperation with those structures.

Minimising restrictions on the autonomy of existing governance structures (for example, local groups) when introducing higher-level structures is important for vertical trust in so far as the existing structures can serve to mediate between the different perspectives of the higher structures and their own members, thereby reducing the risks that these differences will cause misunderstandings, suspicions and confusion with potential to undermine this trust. This insight corresponds with the recommendation of Berger et al. (1977:3) that policymakers should become more cognisant of the important contribution that the 'mediating structures' of civil society make to individuals feeling 'more "at home" in society, and the political order ... more "meaningful"' (Reeve et al. 2002; Marshall 2002, 2005, 2008a).

Governance structures capable of mediating between the private and public spheres of life, by retaining a capacity to present distinct 'private' and 'public' faces, can protect individuals and their groupings from the alienation of modern life and strengthen the legitimacy of governments and other higher-level governance structures. They can do so by helping higher-level structures to connect with local perceptions, values and norms and thereby be perceived by individuals as more supportive of their autonomy. Governance structures retained when introducing higher-level ones can be understood accordingly as mediating structures that make it more possible to develop vertical trust up and down the governance system by breaking into smaller steps what otherwise may be alienating social distances (Marshall 2005).

This account of developments in a behavioural theory of collective action leads to a very different conclusion to that reached by the conventional theory in respect of the appropriate role of external authorities in enabling provision of large-group (including global) collective goods. Whereas the conventional theory concludes that successful provision of such goods depends entirely on intervention by an external governing structure, the updated behavioural theory concludes that feasible provision of such goods requires external structures to limit themselves to subsidiary roles in supporting the endogenous provision efforts of individuals and their self-organised groupings.

The Australian 'experiment' with community engagement for sustainability

Landcare

An ambitious 'experiment' with community engagement in the pursuit of sustainability in rural Australia can be traced to the 1983 launch of the National Soil Conservation Program. This program identified local community participation as essential for national-level success in managing natural resource degradation issues. This emphasis arose from the influence of rural development theory, which highlighted the potential of local self-help supported by change agents (Curtis 1998). The experiment gained momentum when the Australian Government established the \$360 million Decade of Landcare program (1990 to 2000). The funding for this program was intended to catalyse local activity by rural landholders by supporting the formation and facilitation of Landcare groups.

A key driver for the formation of Landcare groups 'was an understanding that land and water degradation issues that crossed farm boundaries needed to be tackled at a scale of planning and action greater than the individual farm' (Campbell 2016:85). In rural areas, the groups were established predominantly at the neighbourhood level, with membership of a few dozen families in traditional agricultural districts, and more in more densely settled peri-urban settings. The groups were often established around pre-existing social groupings centred, for instance, on a school or sporting team, which meant that 'the core group of people, including group leaders, are well known to each other and already identify with that community' (Campbell 2016:85–86). About one-third of Australian farming families became involved in more than 6,000 Landcare-type groups (Campbell 1994).

Although the focus of these groups was usually on private lands managed by group members, they also worked on roadsides, reserves and other public lands (Curtis et al. 2014). The essence of Landcare was described in its early days as 'landholders working in their own local social group to solve their own local land conservation problems in their own way' (Poussard 1992:233), and more recently as 'about promoting sustainable

environmental and natural resource management through voluntary collective action at a neighbourhood or district level' (Campbell 2016:83). The focus of Landcare-type groups was typically on one or two issues (often weeds and invasive animals) in respect of which their members could achieve significant private benefits from local collective action. In some areas this focus was expanded to the district level through formation of networks of Landcare groups. In 2009, 56% of all Landcare-type groups in Victoria were part of a network (Curtis and Sample 2010).

Integrated catchment management

Meanwhile, state and territory governments were establishing integrated catchment management (ICM) concepts and groups. ICM concepts are similar to those of integrated water resource management programs in their recognition of the inter-relatedness of different natural resource management (NRM) issues and of the catchment as the appropriate level at which to integrate responses to these issues. Governance at the catchment level was also seen as offering the coordination of local landcare efforts in providing local collective goods (for example, local wildlife corridors) needed to maximise provision of that kind of good at the higher level (for example, by facilitating connectivity of the local wildlife corridors) (Marshall 2008a). With ICM groups expected in their early years to achieve voluntary cooperation from those they depended on for implementation of their strategies for on-ground action, they naturally looked towards Landcare-type groups as a key means for building this cooperation (AACM and the Centre for Water Policy Research 1995).

The regional delivery model

Prior to the end of the Decade of Landcare program, the Australian Government moved in 1997 to accelerate on-ground implementation of ICM strategies by establishing the five-year \$1.25 billion Natural Heritage Trust. Landcare and other local community groups competed for this funding to undertake projects aligned with the ICM strategy for their catchment. This marked the onset of a purchaser-provider approach whereby access of community groups to Australian Government funding for on-ground projects came to depend on satisfying project selection criteria that became increasingly dictated from the top down.

The price paid by Landcare-type groups to access this funding included significant sacrifices of their autonomy. For instance, the balance of funding from Australian Government programs shifted from sustainable agriculture projects, which most Landcare groups had formerly chosen to undertake, to biodiversity conservation projects. This purchaser-provider approach 'can be seen as a way of maintaining "control" by manipulating farmers' individual and group behaviours' (Curtis et al. 2014:179). The value of Landcare-type groups as mediating structures fostering growth of self-organised collective action was compromised. This was consistent with an international trend across multiple sectors, with Berger and Neuhaus (1996:151) remarking on 'the deformation of mediating structures by [a] creeping process of "governmentalization"'.

Reeve et al. (2002:31) had identified a pivotal role for ICM groups in mediating trust between Landcare-type groups and government agencies to maximise the level of collective action achievable under the purchaser-provider approach, and found that 'major effort in supporting the building of mediating capacity in these [ICM] organisations will be needed'. However, the capacity of ICM groups to mediate trust between local and governmental levels came to be weakened for at least two reasons. First, although

community members of these groups had significant roles under the Natural Heritage Trust in evaluating funding bids from local groups, these roles disappeared as the evaluation process in subsequent iterations of the purchaser-provider approach became centralised progressively to the Australian Government (Curtis et al. 2014). The process lost its 'private' or 'community' face and was perceived increasingly as government controlled.

Second, for the next phase of the purchaser-provider approach (comprising the National Action Plan for Salinity and Water Quality, introduced in 2000, and the Natural Heritage Trust extension, established in 2001, which jointly became known as the 'regional delivery model') the Australian Government effectively sidelined pre-existing ICM groups by newly delineating 56 NRM regions across the nation, with a new organisation responsible for integrating and coordinating lower-level resource management activities to be established for each region. This number of regions was considerably smaller than the number of catchments for which ICM groups had been established under the original Natural Heritage Trust. The area serviced by the 45 ICM groups (then called catchment management committees) operating in New South Wales during the original Natural Heritage Trust (Farrier et al. 1999), for instance, came to be serviced by only 11 regional organisations (now called Local Land Services) (NRM Regions Australia n.d.). This change followed on partly from arguments that the pre-existing catchment areas were too small to effectively integrate the management of inter-related environmental and natural resource problems. It followed also from the Australian Government's determination to become more involved in ensuring (upward) accountability to itself of the bodies it funded, and to simplify this task by reducing the number of such bodies to be held to account (Marshall 2008b).

Implications for self-organised collective action

Although the Council of Australian Governments (2000) argued that the new, much larger regions represented the most effective level for engaging the community in NRM, subsequent reviews found community engagement to have become a major challenge. Many community groups viewed the new regional bodies as remote from the local communities with which their members identified (Regional Implementation Working Group of the NRM Ministerial Council 2005). Moreover, opportunities were missed for the new regional organisations to bridge the social distance between themselves and local groups by nesting the pre-existing ICM organisations and their local networks so that they could serve as mediating structures. Harnessing these opportunities was discouraged by upward accountability requirements imposed on the regional organisations. These requirements were preoccupied with short-term biophysical and financial outcomes and unconcerned with the longer-term benefits for intraregional trust and cooperation that such nesting would yield (Marshall 2008b). In any case, relatively few of the new regional organisations understood themselves as subsidiary to the ICM organisations and Landcare-type groups and networks that had preceded them (Campbell 2016).

Accumulated empirical evidence indicates that the voluntary conservation efforts of landholders arising from their participation in Landcare-type groups are critical to the success of the regional delivery model. Hence 'NRM practitioners need to at least ensure they don't undermine these efforts and, if possible, they should seek to nurture them' (Curtis and Mendham 2011:171-172). Landcare-type groups, however, are now struggling in many if not most districts of Australia.

Some of this decline has been attributed to:

those responsible for developing regionalism fail[ing] to articulate how the regional framework should relate to voluntarism and, as a result, undermin[ing] it ... The tendency for the regional NRM policy reform to displace and undermine rather than augment community landcare was a grave error (Campbell 2016:89).

Other reasons for this decline relate to rural population changes, including an increasing proportion of non-farmers and absentee property owners (Curtis and Mendham 2011).

Community-based pursuit of global sustainability: theory to practice

Although the Australian experience with landcare over the 1990s was described by a team of European and American authors as a ‘remarkable social experiment’ (Pretty et al. 2001:278), lack of understanding of how governance could have strengthened, rather than ‘crowded out’, the voluntary local efforts of Landcare-type groups in order to maximise the provision of conservation-related collective goods at all levels resulted in a failure to realise ‘what could have been one of the world’s best examples of nested, multilevel systems of community-based governance of natural resources’ (Campbell 2016:92). The experiment has nevertheless been described as a ‘world-leading story’ (Campbell et al. 2017:414) yielding important insights for future attempts to establish authentically community-based governance systems for large-scale conservation challenges (Campbell 2016).

The aim of this chapter is to distil from the preceding conceptual and case-study analysis how community-based governance might be implemented to enable more successful pursuit of sustainability towards the global level. A start is made below by considering the steps that might be taken in this direction in a ‘green field’ setting where all governance options for supporting community engagement in pursuit of sustainability remain on the table, such as was largely the case in Australia prior to adoption of the particular governance approach associated with the regional delivery model. These ideas may be useful for other nations not yet locked into a path of institutional development for community engagement in sustainability programs. The ideas presented in this section draw from Marshall et al. (2010:276–279).

How might we move towards a nested, community-based system of natural resources governance in a ‘green field’ setting? We would begin by recognising the range of small groups within each local community that already provide themselves with collective goods such as sport competitions and wildfire control. These groups will typically have evolved with diverse ways of operating, each suited to its own purpose. We would proceed then through the three steps described below, recognising the value of using public funds to catalyse processes that might otherwise take generations to occur. An appropriate public agency with a clear understanding of, and commitment to, community-based governance would oversee these steps.

Step 1: Forming natural resource management groups at the local level

This step involves encouraging members of pre-existing groups within a local community to establish one or more groups concerned predominantly with natural resource and/or environmental issues that they share and feel motivated to address (for example, control of weeds or invasive animals). Public funds are allocated to catalyse this process, for instance by resourcing awareness-raising events and appointing facilitators. The public agency

overseeing the process provides guidelines to ensure that the new groups are downwardly accountable to their members for whatever purposes they come together.

Step 2: Enabling strategic effort at higher levels

Once the local conservation groups are well established and have achieved success in addressing the issues for which they were originally founded, they would be encouraged to think about conservation issues extending beyond their immediate interests and capabilities. Depending on each group's capabilities, these issues might include other conservation problems, filling knowledge gaps, sharing information and experiences, intergroup coordination of efforts and so on. Some public funds would be made available to these groups and perhaps other bodies (for example, local governments) to discuss complementarities in their interests and capabilities, and how they might prioritise and coordinate their actions. The reasons that local groups might want to 'join forces' with one another and other organisations to self-organise structures at one or more higher levels would be promoted to them, with the choice whether to proceed in this direction left to each local group. In agreeing to establish such a structure, the local groups would consent to cede power over specified matters to that structure, normally in exchange for representation on it.

The financial focus of any such higher-level structure would primarily be on providing governance over funds and other resources contributed by its constituent groups to effectively provide conservation-related collective goods at a larger scale than the groups could achieve by acting independently. It may be possible for these structures to also satisfy eligibility criteria for receiving public funding, but the consideration by local groups of higher-level governance options would only be informed, not constrained, by the preferences of public funders for options with certain attributes (for example, capacity to meet accountability standards). In any event, the public agency responsible for facilitating the emergence of nested community-based NRM governance would seek to ensure that funder preferences are informed by an understanding of this form of governance.

Where local groups prefer a governance structure that does not immediately satisfy funder preferences (for example, a district-level structure when investors prefer to invest in a larger, regional structure), ways of nesting the locally preferred structure within the structure preferred by the funder would be explored. An organisation such as that described by Steffen et al. (2009:164), independent of public funders and the groups involved, would be established to assess whether bottom-up proposals for structures to receive external investment satisfy funder preferences and meet basic guidelines (including of subsidiarity).

Step 3: Establishing accountability consistent with subsidiarity

The structures designated through this process as eligible for public funding would be established with required standards of downwards accountability to the groups they represent and reasonable openness to their involvement. They would also need to satisfy minimum necessary standards of upwards accountability to funders. The goal would be to leave these structures as autonomous as possible in responding to the unique evolving circumstances each group faces, thus creating conditions conducive to motivating voluntary cooperation of local groups and their members with the decisions made by these structures. An important role of higher levels of governance (for example, regional structures, government agencies and supranational organisations) would be to ensure that learning is transmitted horizontally among lower-level entities.

Conclusion

The scale of collective action required for global sustainability is feasible only to the extent that efforts at this level can 'piggyback' on capacities established at lower levels for solving free-rider problems in pursuit of this sustainability. Collective action at each successively higher level is made feasible by the platform of trust, reciprocity and cooperation already established in providing lower-level collective goods. Collective action towards sustainability may eventually, through 'the incremental self-transformations that frequently are involved in the process of supplying institutions' (Ostrom 1990:190), come to succeed at the global level.

Such a process of building capacities for global sustainability 'from the ground up' is one of community-based environmental governance (Berkes 2017:9), at least where this governance is understood properly as a nested multilevel system of groups, organisations and governments interacting in accordance with the principle of subsidiarity. Community-based governance has been heralded as 'the most exciting opportunity to turn the tide against the triple Anthropocene threat [of biodiversity loss, climate change and unsustainable land use]' (Kremen and Merenlender 2018:4).

The Australian 'experiment' with Landcare and regionalised natural resources governance documented briefly in this paper offers important insights for ongoing attempts to grow collective action for sustainability beyond the local level. These attempts represent nothing short of transformational policy reform, from the worldviews and patterns of vested interests long associated with the centralised, top-down governance approach to the new ways of thinking and acting required for a truly community-based approach to flourish (Campbell 2016; Marshall and Stafford Smith 2010). Persisting with these attempts is essential; the solution to the global problem of sustainability is ultimately community-based.

References

- AACM and the Centre for Water Policy Research (1995) *Enhancing the effectiveness of catchment management planning: final report*, Department of Primary Industries and Energy, Adelaide.
- Berger PL and Neuhaus RJ (1977) *To empower people: the role of mediating structures in public policy*, American Enterprise Institute, Washington, DC.
- Berger PL and Neuhaus RJ (1996) 'Peter L. Berger and Richard John Neuhaus respond', in Novak M (ed) *To empower people: from state to civil society*, AEI Press, Washington, DC, pp. 145–154.
- Berkes F (2005) 'Why keep a community-based focus in times of global interactions?', *Topics in Arctic Social Sciences*, 5:33–43.
- Berkes F (2007) 'Community-based conservation in a globalised world', *Proceedings of the National Academy of Sciences of the USA*, 104(39):15188–15193.
- Berkes F (2017) 'Environmental governance for the Anthropocene? Social-ecological systems, resilience and collaborative learning', *Sustainability*, 9:1232.
- Campbell A (1994) *Landcare: communities shaping the land and the future*, Allen and Unwin, Sydney.
- Campbell A (2016) 'Two steps forward, one step back: the ongoing failure to capture synergies in natural resource management (Australia)', in Young MD and Esau C (eds) *Transformational change in environmental and natural resource management: guidelines for policy excellence*, Routledge, Abingdon, U.K., pp. 80–94.
- Campbell A, Alexandra J and Curtis D (2017) 'Reflections on four decades of land restoration in Australia', *The Rangeland Journal*, 39(5&6):405–416.
- Cole DH (2015) 'The problem of shared irresponsibility in international climate law', in Nollkaemper A, Jacobs D and Schechinger JNM (eds) *Distribution of responsibilities in international law*, Cambridge University Press, pp. 290–320.
- Council of Australian Governments (2000) *Our vital resource: a national action plan for salinity and water quality*, Commonwealth of Australia.
- Curtis A (1998) 'Agency-community partnership in landcare: lessons for state-sponsored citizen resource management', *Environmental Management*, 22(4):563–574.
- Curtis A and Mendham E (2011) 'Bridging the gap between policy and management of natural resources', in Pannell D and Vanclay F (eds) *Changing land management: adoption of new practices by rural landholders*, CSIRO Publishing, Collingwood, Australia, pp. 153–176.
- Curtis A, Ross H, Marshall GR, Baldwin B, Cavaye J, Freeman C, Carr A and Syme GJ (2014) 'The great experiment with devolved NRM governance: lessons from community engagement in Australia and New Zealand since the 1980s', *Australasian Journal of Environmental Management*, 21(2):175–199.
- Curtis A and Sample R (2010) *CBNRM in Victoria: contributing the dialogue, learning and action*. A report to the Department of Sustainability and Environment, Institute for Land, Water and Society, Charles Sturt University, Albury, NSW.
- Farrier D, Lyster R and Pearson L (1999) *The environmental law handbook: planning and land use in New South Wales*, 3rd edn, Redfern Legal Centre Publishing, Sydney.
- Frey BS and Jegen R (2001) 'Motivation crowding theory: a survey of empirical evidence', *Journal of Economic Surveys*, 15:589–611.
- Hardin G (1968) 'The tragedy of the commons', *Science*, 162 (December 13):1243–1248.
- Kremen C and Merenlender AM (2018) 'Landscapes that work for biodiversity and people', *Science*, 362(6412):1–9.
- Marshall GR (2002) 'Institutionalising cost sharing for catchment management: lessons from land and water management planning in Australia', *Water, Science and Technology*, 45(11):101–111.
- Marshall GR (2004) 'Farmers cooperating in the commons? A study of collective action in salinity management', *Ecological Economics*, 51(3-4):271–286.
- Marshall GR (2005) *Economics for collaborative environmental management: renegotiating the commons*, Earthscan, London.

- Marshall GR (2008a) *Community-based, regional delivery of natural resource management: building system-wide capacities to motivate voluntary farmer adoption of conservation practices*, Rural Industries Research and Development Corporation, Canberra.
- Marshall GR (2008b) 'Nesting, subsidiarity and community-based environmental governance beyond the local level', *International Journal of the Commons*, 2(1):75–97.
- Marshall GR (2009) 'Polycentricity, reciprocity, and farmer adoption of conservation practices under community-based governance', *Ecological Economics*, 68(5):1507–1520.
- Marshall GR (2011) 'What "community" means for farmer adoption of conservation practices', in Pannell DJ and Vanclay FM (eds) *Changing land management: adoption of new practices by rural landholders*, CSIRO Publishing, Melbourne, pp. 107–127.
- Marshall GR, Hine DW and East MJ (2017) 'Can community-based governance strengthen citizenship in support of climate change adaptation? Testing insights from Self-Determination Theory', *Environmental Science and Policy*, 72:1–9.
- Marshall GR and Malik A (2019) 'Polycentricity and citizenship in environmental governance', in Thiel A, Garrick DE and Blomquist W (eds) *Governing complexity: analysing and applying polycentricity*, Cambridge University Press, pp. 197–218.
- Marshall GR and Stafford Smith DM (2010) 'Natural resources governance for the drylands of the Murray-Darling Basin', *The Rangeland Journal*, 32(3):267–282.
- McGinnis MD (2011) 'An introduction to IAD and the language of the Ostrom Workshop: a simple guide to a complex framework', *Policy Studies Journal*, 39(1):169–183.
- North DC (1990) *Institutions, institutional change and economic performance*, Cambridge University Press.
- NRM Regions Australia (n.d.) *NRM regional organisations*, accessed 12 September 2017. <http://nrmregionsaustralia.com.au/nrm-regions-map/>
- Olson M (1965) *The logic of collective action*, Harvard University Press, Cambridge.
- Ostrom E (1990) *Governing the commons: the evolution of institutions for collective action*, Cambridge University Press.
- Ostrom E (2000) 'Crowding out citizenship', *Scandinavian Political Studies*, 23(1):3–15.
- Ostrom E (2005) 'Policies that crowd out reciprocity and collective action', in Gintis H, Bowles S, Boyd R, and Fehr E *Moral sentiments and material interests: the foundations of cooperation in economic life*, MIT Press, Cambridge, MA, pp. 253–275.
- Ostrom V (1991) *The meaning of American federalism: constituting a self-governing society*, Institute for Contemporary Studies Press, San Francisco.
- Poteete AR, Janssen MA and Ostrom E (2010) *Working together: collective action the commons and multiple methods in practice*, Princeton University Press.
- Poussard H (1992) 'Community landcare to test government policies and programs', *7th International Soil Conservation Organisation Conference proceedings*, Sydney, 27–30 September.
- Pretty J, Brett C, Gee D, Hine R, Mason C, Morison J, Rayment M, Van Der Bijl G and Dobbs T (2001) 'Policy challenges and priorities for internalising the externalities of modern agriculture', *Journal of Environmental Planning and Management*, 44(2):263–283.
- Reeve I, Marshall GR and Musgrave W (2002) *Resource governance and integrated catchment management*, Institute for Rural Futures, Armidale.
- Regional Implementation Working Group of the NRM Ministerial Council (2005) *Regional delivery of natural resource management: moving forward*, NRM Ministerial Council, Canberra.
- Ryan RM and Deci EL (2000) 'Intrinsic and extrinsic motivations: classic definitions and new directions', *Contemporary Educational Psychology*, 25:54–67.
- Steffen W, Burbidge AA, Hughes L, Kitching R, Lindenmayer D, Musgrave W, Stafford Smith M and Werner PA (2009) *Australia's biodiversity and climate change*, CSIRO Publishing, Melbourne.
- World Commission on Environment and Development (1987) *Our common future*, Oxford University Press.



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CHAPTER 7

A sustainable resourcing strategy for landcare

Paul Martin and Kip Werren

Abstract

Landcare is a community-based natural resource management (NRM) program of global significance. The strength of Landcare lies in its local focus and character and the fact that community groups and networks decide their own visions and set goals for environmental action in their districts and regions. Landcare is an effective mechanism for facilitating community participation in NRM, community partnerships and cost sharing between government and private landholders. The main restraint on achieving conservation goals, however, is the lack of resources available for landcare actions. Without further resources, Landcare cannot commit to the extent needed to achieve sustainable management of the Australian environment. This feasibility problem faced by most Landcare groups reflects a far larger challenge of environmental funding. Future pressure on budgets means that it is unlikely that Australian governments will commit to substantively increased conservation funding. There is a real possibility that environmental funding by governments will continue to decrease. To meet this challenge, there is a need for innovation in conservation resourcing as the demand for investment in conservation activities dwarves the capacity of both government and private landholders. Landcare groups will need to find even more creative ways to address this resourcing gap.

Introduction

Anecdotally, members of community-based volunteer movements such as Landcare that contribute to the care and protection of the environment note that public funding is in short supply and declining. They remark that government coordinators or technical experts are increasingly scarce. Moreover, they observe that the bureaucratic red tape they are required to comply with to competitively apply for limited government funding, without any guarantee that they will receive it, is punitive.

Depending on the creativity and willingness of team members to invest time, emotion and effort, they may find ways to address the lack of government funding. Strategies might include enlisting the help of school children on land rehabilitation projects, running a barbeque or cake stall, requesting in-kind support from local business (for example, a business that provides earthmoving equipment and operators), registering for digital crowdfunding, partnering with a not-for-profit lottery, registering as a tax-deductible gift recipient, organising corporate sponsorship and using biodiversity banking or carbon markets. Creativity and personal energy help fill the gap between what is required and what is provided by government to ensure Landcare's continuing contribution to the public good. Other possibilities yet to be fully explored include:

- building broader stewardship requirements into mandatory or negotiated development control conditions (for example, biodiversity offsets and bio-banking)
- building habitat connectivity responsibilities into consumer-driven programs (for example, organic certification)
- building connectivity requirements into supply/buy chain systems (for example, retailer supplier standards)
- using more market-based instruments (for example, water rights, carbon offsets and other market-based credits).

The limit of any strategy is not the strategist's imagination, but rather their ability to secure the right resources, at the right time and right place.

The lack of resourcing is a fundamental challenge for environmental groups. In this chapter, it is argued that a more coordinated and strategic approach is required to tackle this universal problem. It will take concentrated and expert effort to change the funding landscape for community environmental groups around the world. The starting point is the need to carefully consider key questions, including:

- How much money and labour is likely to be needed to achieve desirable environmental sustainability outcomes on rural lands?
- What is the potential amount of resources available from different public and private sources under alternative strategies?
- Which strategies are most likely to be effective in bridging the funding gap efficiently and equitably?
- What reforms to existing policies and programs, or other institutional arrangements, would constitute feasible strategies to reduce the national funding gap?

Military strategists such as Julius Caesar, Sun Tzu and Carl von Clausewitz underscored the fundamental importance of resourcing and logistics in military campaign strategy. They indicated that the limit of any strategy is not the strategist's imagination, but rather their ability to secure the right resources, at the right time and right place. This is as true of the good work undertaken by Landcare as of any other human endeavour.

Landcare context

Although the setting is different in every country, the Australian situation provides an outline of the challenges facing community environmental organisations around the world. Australia is a vast continent with a small population and a unique ecology. It has numerous environmental laws and regulations, various natural resource conservation programs and many dedicated volunteer groups. Despite this, Australia faces ongoing deterioration of the terrestrial environment (Jackson et al. 2017) due to climate change, land-use change, habitat fragmentation and degradation, and invasive species. Increased population and economic activity have fuelled the demand for food, fibre, minerals, land, transport and energy. Correspondingly, there has been an increase in waste generation.

The effectiveness of natural resource management (NRM) in Australia is hampered by governance system factors, including a lack of policy coordination between jurisdictions, a lack of data for decision-making, and inadequate capacity to identify and measure cumulative environmental impacts. However, the major impediment for environmental management, protection and restoration is inadequate resourcing. In this broader context, the insufficient resourcing that each volunteer environment group grapples with is a localised reflection of national and international economic scarcity.

Private contributions

A 2016 study (JP Morgan Chase & Co 2016) based on survey evidence, with most survey respondents located in North America and Europe, found that progress has been made in engaging the private sector in conservation investment. The study stated:

- Private capital flows to conservation investments totalled US\$8.2 billion from 2004 to 2015.
- Sustainable food and fibre production attracted most of the investment capital.
- Organisations investing in habitat conservation typically favoured real asset investments, with almost half (48%) of habitat conservation capital committed towards direct land ownership and another 12% directed towards conservation easements.
- Few organisations reported making a major contribution to water quality and quantity investments in comparison to sustainable food and fibre production or habitat conservation.
- Private investors are motivated by both conservation and financial returns.
- Most respondents noted that the primary barrier to further investment was a lack of available deals with appropriate risk/return profiles.
- Investors expressed the need for more government support to absorb risks and create market mechanisms.
- Private investors were still looking for deals, with a reported US\$3.1 billion awaiting deployment at the end of 2015.

What the study did not consider was the significant contributions to NRM made by private landholders, businesses, communities, Indigenous people and non-government organisations. The World Resources Institute has recognised the importance of local expertise (knowledge, relationships and labour) with the creation of the TerraMatch platform, which aims to connect funders with local groups undertaking forest and landscape restoration (TerraMatch n.d.). The Australian Bureau of Statistics (2018b) reported that in 2016–17 there were 88,073 agricultural businesses in Australia. Of the 394 million hectares available for agriculture, 7.4 million hectares (1.88%) has been voluntarily removed from agricultural production for conservation purposes. In 2011–12, the Australian Bureau of Statistics (2013) estimated that 8.1 million Australian adults had participated in nature conservation activities at home or on farms. Approximately 750,000 Australian adults participated in voluntary work to conserve nature. Nearly 500,000 Australian adults participated in voluntary work for an environment conservation organisation.

Resource gap

In 2021 the United Nations launched the UN Decade on Ecosystem Restoration, which aims to encourage governments, businesses and individuals to take up the common goal of preventing, halting and reversing the destruction of natural spaces on every continent and in every ocean. Unfortunately, no clear estimate is provided on the funding required to achieve this noble but nonetheless ambitious goal. Martin and Werren (2009a) estimate that the funding required to protect, prevent or mitigate pressures on the environment from human activities in Australia is likely to require approximately 2% of gross domestic product (GDP) per annum. Based on the 2016–17 GDP (Australian Bureau of Statistics 2018a), the required funding is around \$34 billion per annum. Unfortunately given the limits of data, it was not possible to provide a breakdown of the funding required for landscape and biodiversity conservation. This type of analysis is needed. Nonetheless, it is clear that most of the funding is required in rural areas, as this is where intact habitats are likely to remain. This raises the issue about the extent to which rural communities should be responsible for protecting and conserving biodiversity. Should the responsibility for protecting biodiversity values fall on local rural communities rather than the Australian public at large? To what degree should the load be shared?

Regulation is a way to force people to avoid doing harm, but it can also be used to require them to take action to protect the public good. For example, regulation can require that landholders forego the economic use of some of the land that they own to protect the environment, or that they take action to control things that harm the environment or the public interest in some other form. It is not unreasonable to expect this of citizens, but there is a point where the allocation of this responsibility can become unfair. It is particularly likely to be considered unfair if the expectation is beyond the capacity of the citizen to deliver. Using command and control instruments to oblige private landholders to undertake investments in the public interest, where they have not caused the harm and where there is no economic benefit to themselves, is problematic in terms of procedural fairness. Additionally, expecting them to do this successfully when they do not have sufficient resources to make that investment is impractical.

Martin and Williams (2016) noted that Australia is a wealthy country on a per capita basis, but has a population density of less than 0.1 person per hectare. Wealth intensity measured by total GDP per hectare places Australia in a group with less than US\$3,000 GDP per hectare: Russia (US\$1,222), Iceland (US\$1,344), Argentina (US\$1,713), Canada (US\$1,976), Australia (US\$1,995) and Brazil (US\$2,628). Australia's wealth is concentrated in coastal and urban

areas, where over 80% of the population live and most industrial and commercial activities occur. Rural communities are essential to sustainable development because agricultural activities typically require natural environments, but these communities often do not have the required funds and human capital to address the problem, particularly in times of economic downturn due to market or climate cycles. To achieve desired outcomes will require more funds and human capacity than is likely to be reliably available in rural communities.

This suggests that more money to protect the environmental public good should come from the public purse, so that the investment is sufficient, fair and feasible. The total contribution of local and state government departments to NRM, including management of their parks and reserves, is around \$4.9 billion per annum. However, the reliability of this estimate is contaminated by inconsistent and confusing reporting. Taken as a whole, government investment probably meets between one-fifth and one-quarter of the total that is required. It can be reasonably argued that Australian governments should contribute more.

There are, however, severe limits on government funding. National and state budgets are under pressure from post-COVID recovery, declining terms of trade and slow economic growth, our ageing population, increased demand for health care and the need to service deficits. Without an increase in government revenue or cuts in expenditures, the financial pressures due to our ageing population will create a fiscal gap between government revenue and expenditure. Closing this gap will probably require increases in taxes or a proportionate reduction in expenditure. Given these considerations, it seems unlikely that Australian governments will significantly increase their environmental funding. Indeed, it seems that disinvestment is more likely. The balance of the investment, if it comes at all, must come from other sources.

More non-government funding will be essential, but can more be sourced from landholders and local volunteers? Many private landholders undertake NRM activities without financial support. Considerations that influence this participation include:

- the nature of the activity
- landholder autonomy in achieving conservation goals
- the nature and extent of the financial and non-financial support that is available
- market forces
- transaction costs and the administrative complexity of funding schemes
- duration, quantity and quality of information
- awareness of the program
- opportunity costs
- landholder characteristics such as dependency on farm income
- attitudes towards conservation
- the financial stresses on the landholder
- the landholder's ability to solve problems
- business goals
- whether or not there are successors to the landholding
- whether the title of the landholding is freehold or under a lease
- the degree of neighbouring landholder participation
- the degree of trust in the government and programs
- the level of alignment between the land management philosophies of landholders and program administrators.

There are limits to what is feasible, even assuming optimal goodwill. Although the figures fluctuate, the total contribution of farm-gate agriculture to GDP is around 2–3%. Farming is a low-margin activity, so its ability to fund land protection and restoration falls well short of filling the funding gap. It is also economically volatile and risky in business terms. Without more resources from other sources, private landholders cannot commit to the extent needed to achieve sustainable management of the Australian environment. This is a feasibility problem faced by most Landcare groups, which reflects a far larger challenge of environmental funding.

Different problems require different strategies and resources

The resourcing problem is made worse by the changing nature of rural NRM problems. The archetypal problem is caused by an irresponsible or incompetent landholder, or one which continues because of some fault or inadvertence of the landholder. General norms of accountability and stewardship suggest that in these situations the landholder is accountable. The community, through government and voluntary action may assist, but that does not alter this fundamental responsibility.

However, many modern challenges for sustainable and productive use of rural resources do not fit this simple understanding of accountability, particularly if the landholder cannot feasibly do the work that is required. Sometimes a solution requires collective action that is beyond the capacity of individual land stewards. Examples include the collective overexploitation of a river or aquifer, or some forms of soil erosion. Addressing these problems may require coordination, technology or infrastructures that are not feasible for a local Landcare group to provide.

Two other problem types can be impossible for private land stewards to manage themselves. The first is if the problem or its solution crosses land boundaries. The boundary might be cadastral, concerning the legal rights of public and private landholders who have different interests and constraints. The diversification in land uses (for example, grazing and cropping, hobby farming and private conservation) creates problems for coordinated management. Consequently, one landholder may not be motivated to fix a problem that is important to their neighbours who have a different type of enterprise. The characteristics of their business may make it impractical for them to carry out work at a time that suits their neighbours. Moreover, the intersection of various restrictive legal regulations may make it infeasible to participate in the required conservation activity. In Australia, coordinated weed and fire prevention, for example, is hampered by the different requirements of the three levels of government.

The boundaries of rights and interests might also be between states, provinces or countries, which have different interests and constraints. Finding workable solutions can require economic or social incentives for cooperation or dealing with legal and other constraints and complexity. A regional or statewide landcare program, for example, may require investment and work to make it possible and attractive for everyone to participate. It is often not feasible for a local group to tackle the complex coordination and incentives issue with the resources that they have, and public support is needed.

The second problem type is self-generating (autopoietic), particularly if it evolves or adapts over time. A new weed, a disease, an insect infestation or a harmful animal population can have these characteristics. Coordinated ongoing action and investment is required.

The participation of the majority of relevant land stewards is essential when a problem crosses jurisdictional boundaries. For many landcare initiatives, the weakest link determines the strength of the chain.

For simple problems, if a few land stewards choose not to participate, this may not be a strategic problem, particularly if the harm only affects those individuals. For problems that require collective remedies, however, if it is not feasible for everyone who needs to participate to do so, then this affects everyone. It does not matter which link in the chain breaks – whether it is the individual landholders, the citizen group, the funding source or the government agency – the result is the same. In these cases, everyone loses. Given fluctuations in income, differences in landholders' capacities and different attitudes, these types of problems may be beyond the capacity of volunteer groups to resolve.

Cunning, imagination and creativity

This chapter has focused to a large extent on funding or resourcing issues. Money is not the be-all and end-all of resourcing environmental activities. If environmental activities can be achieved without being paid for, money is inconsequential. The key question should not be 'How can we get the money to buy what we need?' A more useful focus is 'How can we get what we need (preferably without money)?' This way of thinking opens up creative opportunities. Successful Landcare groups often use this approach, without realising the entrepreneurial genius of it.

A starting point for entrepreneurial thinking about landcare initiatives is to realise that the 'platform' that is needed involves a mix of tangible and intangible resources. It is not hard to make an inventory of the tangible requirements. Landcare teams do this all the time, even if they do not make a written list. They think of the materials, equipment and tools they will need to do the job. They may estimate the manpower that is required and compare it to the labour available to identify what work may not be covered by their volunteer capacity. Some requirements, such as power, transport to the work site or catering, may be fungible with labour or capital, and the team may find creative ways of meeting the need. It is not unusual for one volunteer group to help another with such needs. The local service club may lend a vehicle or a shelter, or provide catering for a working bee.

The resources that typically do not receive enough attention are often the ones that are most strategically important to Landcare's success. These are the intangible resources, such as knowledge, relationships and systems. Some cannot be purchased, so they must be created by the team. An example is 'relationship capital', which is the glue that holds the team together and makes it effective, and the catalyst that enables the team to negotiate for cooperation, such as access to resources that they might otherwise have to pay for.

Intangible resources include relationships, knowledge, information, capabilities, processes and culture – all aspects of 'human capital'. We can imagine these intangible resources as a Venn diagram (Figure 7.1). The four sets are made up of generic individual skills, specialised individual skills, generic team skills and specialised team skills. Intangible resources are refined through experience.

Individual human capital represents the intangible resources held by a person that will help them to carry out a role effectively – their knowledge, skills, relationships and attitudes. The human capital requirements of a team leader will be different to those of a technical officer, as they have different skill and knowledge requirements. Some individual requirements will be generic, such as having the ability to communicate, understanding how the team works and the systems the team uses, or having a shared attitude or sensitivity.

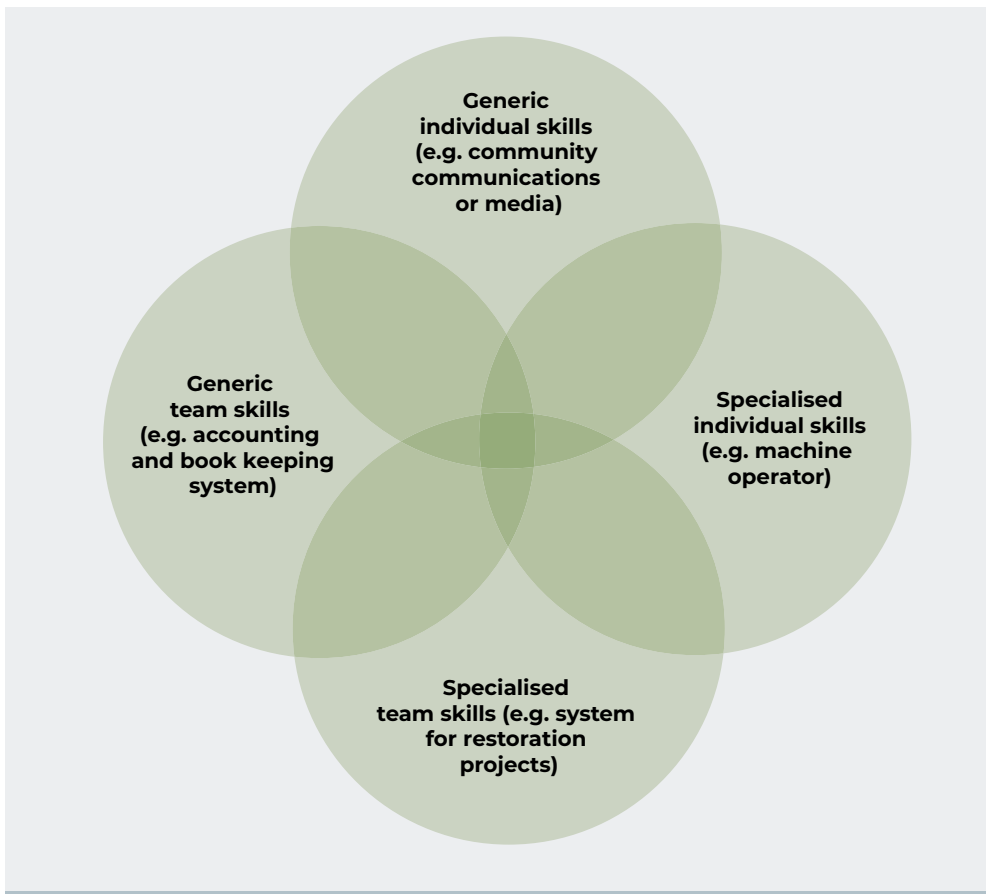


Figure 7.1 Intangible resources

Some will be specialised, such as the skills of the team bookkeeper or secretary, or the worker who knows how to operate specialised machines. Personal relationships and an individual's reputation may also be critical to the effectiveness of the team.

For individuals to be fully effective, they are usually required to use systems and processes, and perhaps access specialist advice. These are collective rather than individual intangible resources. Many collective requirements are similar across many organisations, such as a bookkeeping system, project management or a member and stakeholder communications system. These are generic intangibles. Other collective resources are more specialised, for example, data about the local area, maps, contact directories or dedicated databases. A fully effective Landcare group needs the right mix of individual and collective generic and specialised intangible resources, and the right mix of tangible resources, such as capital and labour and funds, to do the job well. The group's ability to use these resources proficiently comes partly through experience – individuals and groups generally get better at what they do by building knowledge and skills by working together on tasks. The off-the-shelf accounting package may potentially do everything the group needs, but it will only become efficient when the bookkeeper has learned its subtleties. A new Landcare coordinator may have been introduced to the local landholders, but until they have spent time together in the field or around the dining table, they will not understand and fully trust each other, so they may not perform well as a team.

Different strategies can be used to obtain different resources. Cunning and imagination can make a significant difference to how successful a group is. The value of entrepreneurial cunning and energy can be seen by looking at how different Landcare groups go about their work. Some have social networks and partnerships that allow them to flourish even when funding is tight. Some use opportunities such as biodiversity banking or carbon markets, or draw on labour sources like a local prison or a service club. Others have good community relationships that guarantee cooperation, and others tap into research or philanthropic funds to leverage their efforts. Around the world, community environment groups have found many creative solutions.

Different strategies can be used to obtain different resources. Cunning and imagination can make a significant difference to how successful a group is.

Some resources cannot be sourced from outside, for example, team-building relationships and refining practice through working together. However, even the development of these resources can be accelerated with a strategy that recognises what is needed and sets about creating it with vision and energy.

One key to entrepreneurial resourcing is understanding precisely what is required to get the best results. A shovel and a tunnelling machine are both 'digging equipment' but it takes more time to achieve results with a shovel. Another key is the application of creativity and energy to find ways to create the resource platform. Seeking money from the government is one strategy, but it is not the only one and it can be costly. It can build a culture of dependency and, because funds can be intermittent, it can result in inefficient work and team demotivation when good funding bids are unsuccessful. Many Landcare groups have great entrepreneurial ability and some of their strategies are innovative and effective. That ability, however, is not universal. Systematically learning from the most effective resourcing entrepreneurs within the Landcare community would probably create many new opportunities for the whole landcare movement, but there is no institutional structure that allows this to happen.

An aspect of resourcing that does not receive a lot of attention by Landcare is the need to achieve reform of the institutional frameworks that determine what resources flow to citizen groups. Institutions consist of the rules that determine how information and resources flow in society and the organisations and processes that apply these rules. Government funding rules, regulations, philanthropic arrangements and the operation of groups like Landcare are all examples of institutional arrangements. The institutions that affect resource flows to Landcare groups include the public and private sector agencies and regional groups that provide funds and limited support for projects or organisational support for Landcare.

Institutional arrangements that support landcare activities are often not well aligned to support the good work that Landcare does. Many problems arise, not due to the quantity or the timing of funds, but because of bureaucratic oversight. Government grants often use bureaucratic arrangements that are very unfriendly to community groups, administratively complex, unreliable, sometimes oppressive and demoralising. Anecdotal evidence suggests

that these arrangements treat volunteers as supplicants rather than as valued partners who are making a great contribution to the public good. These issues affect the viability of Landcare groups in many ways and improvement should be possible.

Regional Onsite Conservation Program

New structures can create new opportunities. An alternative funding model to government-funded NRM that we have proposed is the Regional Onsite Conservation Program (ROCP) (Martin and Werren 2009b). We present this here as an example of alternative approaches to funding that have not been pursued by government or Landcare.

The ROCP model reflects the rationale that taxation incentives, when embedded in the right institutional structures, can significantly increase private funding for NRM activities. The ROCP would aim to attract funding by capturing the value of marketable eco-services, directing philanthropic funds towards conservation works, and facilitating research into ecosystems, sustainable agricultural practices and biotechnology. The ROCP could provide financial and non-financial incentives to private landholders, encourage unincorporated joint venture arrangements with non-government conservation organisations, build social capital, encourage cooperative practices, facilitate innovation and develop conservation works on an extensive spatial scale.

The ROCP involves investment through an investment trust that operates three subordinate funds aimed at:

- conservation philanthropy
- conservation research and development
- the production and sale of marketable eco-services.

An investor would have the choice of allocating funds to the appropriate subordinate funds. There would be a mix of taxation treatments, depending on the use of the funds.

Taxation incentives for conservation could encourage long-term commitment and compensate for lower returns and higher risk (relative to other investments). The government could leverage its outlay (its decrease in taxation) to facilitate conservation on private land for the benefit of society, with the degree of leverage depending upon how attractive investors find the taxation incentives and other benefits. History demonstrates that taxation incentives can have a disproportionate effect compared to simple public subsidies, stimulating private investment and innovation in support of public goals.

There are many other possibilities (United Nations Development Program Biodiversity Finance Initiative n.d.). A real-world example of a capital-raising mechanism that uses taxation incentives to encourage investment in environmentally friendly initiatives is the Netherlands' Green Funds Scheme. The Netherlands Government launched the Green Funds Scheme in 1995 (Bellegem et al. 1997) to facilitate projects in nature conservation, encourage a change in economic activities so that they take biodiversity into account, promote the distribution of sustainable energy technology and support household participation in green projects. It is a tax investment scheme that allows investors to contribute to green projects by placing their money with an approved financial (green) institution at below market interest rates. This is partly compensated by the tax incentive. The green institutions lend money at below market rates to companies that undertake certified green projects.

In the proposed ROCP model, projects would be developed using a flexible mechanism led by landholders who 'bid' for investment in project proposals. Having a mechanism that can foster 'connected up' private conservation tailored to the capabilities and the needs of landholders would enable projects to be proposed at scales ranging from a couple of landholders to a large regional program involving many landholders.

Landcare has demonstrated the value of a strong local focus and of community groups and networks deciding their own visions and goals for environmental action for their districts and regions. The ROCP model has been designed to provide opportunities for high levels of landholder motivation, initiative and innovation with flexibility for local action. Under the ROCP model, landholders – individually or as part of a collective – would choose the best means to carry out the conservation activity and negotiate the design and investment. Since we first proposed the ROCP model, many market instruments, private initiatives and other funding options have emerged. This suggests that institutional innovation (particularly if supported by taxation arrangements) has the potential to create a new business model for landscape sustainability to bridge the gap between what is feasible from conventional sources (farmers and government), and what is needed to significantly improve outcomes.

Conclusion

A key strength of Landcare is its localism. It is a real demonstration of the subsidiarity principle. Securing sufficient resources is a fundamental challenge faced by every Landcare group. The groups that are more successful tend to be energetic, well-connected and very creative. Their efforts, however, are largely fragmented and focused on finding local solutions to local challenges. This does not tackle the overarching and fundamental lack of resources, or the lack of strategies and institutions in many countries that could help to overcome this problem.

Turning our attention to the broader challenges that have been outlined in this chapter could address these resourcing issues. This would require new skills and a concentrated effort. This chapter notes, however, that there are options to meet these challenges that are currently not well understood and remain under-exploited. These options will need people with a sophisticated understanding of funding, political relationships, economics and environment. Nonetheless, whatever the future holds, it cannot be denied that community organisations make very important contributions to the environment and to social justice around the world. Their reputations and networks are, in themselves, resources that could be leveraged entrepreneurially to create new opportunities to solve old problems.

References

- Australian Bureau of Statistics (2013) *4602.0.00.002: community engagement with nature conservation, Australia, 2011-12*, accessed 24 January 2021. <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4602.0.00.002main+features52011-12>
- Australian Bureau of Statistics (2018a) *1345.0: key economic indicators, 2018*, accessed 24 January 2021. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/1345.0#NationalAccounts>
- Australian Bureau of Statistics (2018b) *4627.0: land management and farming in Australia, 2016-17*, accessed 24 January 2021. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4627.0>
- Bellegem Van T, Beijerman A, Eijs A, Boxtel M, Graveland C and Wieringa H (1997) *Green investment funds: organic farming Dutch case study*, OECD Expert Group on Economic Aspects of Biodiversity.
- Jackson WJ, Argent RM, Bax NJ, Clark GF, Coleman S, Cresswell ID, Emmerson KM, Evans K, Hibberd MF, Johnston EL, Keywood MD, Klekociuk A, Mackay R, Metcalfe D, Murphy H, Rankin A, Smith DC and Wienecke B (2017) *Australia State of the Environment 2016: independent report to the Australian Government Minister for the Environment and Energy*, Australian Government Department of the Environment and Energy, accessed 24 January 2021. <https://soe.environment.gov.au/download/reports>
- JP Morgan Chase & Co. (2016) *State of private investment in conservation 2016: a landscape assessment of an emerging market* [PDF], accessed 19 May 2022. https://www.forest-trends.org/wp-content/uploads/2017/03/doc_5474.pdf
- Martin P and Werren K (2009a) *Discussion paper for Victorian Government Department of Sustainability and Environment: an industry plan for the Victorian environment*, Victorian Government Department of Sustainability and Environment, Melbourne.
- Martin P and Werren K (2009b) The use of taxation incentives to create new eco-service markets, in Lin-Heng L, Milne J, Ashiabor H, Deketelaere K and Kreiser L (eds) *Critical issues in environmental taxation Volume VII*, Oxford University Press.
- Martin P and Williams J (2016) Next generation rural natural resource governance: a careful diagnosis, in Mauerhofer V (ed) *Legal aspects of sustainable development: horizontal and sectorial policy issues*, Springer, Switzerland, pp. 607–628.
- TerraMatch (n.d.) TerraMatch website, accessed 24 March 2021. <https://www.terramatch.org>
- United Nations Development Program Biodiversity Finance Initiative (n.d.) BIOFIN Catalogue of Finance Solutions, accessed 24 March 2021. <http://www.biodiversityfinance.org/finance-solutions>

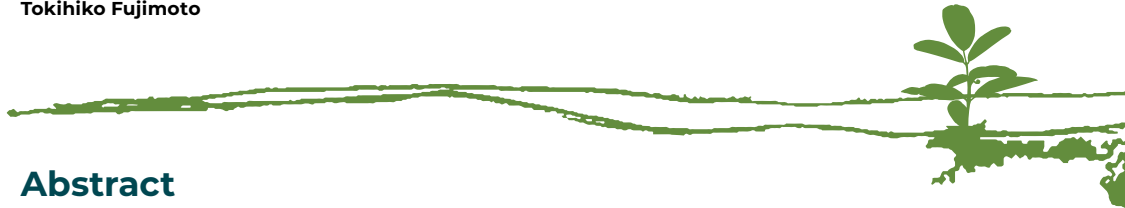




CHAPTER 8

Renewable resources and landcare ethics: community-based ownership for caring for life, land, nature and the environment

Tokihiko Fujimoto



Abstract

This chapter discusses the dynamism between renewable energy and the landcare approach in the local community through a simple conceptual framework (care, resources, local resources, social enterprise). From this, I will build a theoretical model of renewable energy and community to establish the concept of community-based ownership based on the landcare ethics. The theoretical framework of renewable energy and community is shown to be effective in realising the goal of environmental protection and community development at the same time. In line with the subsidiarity principle, it does this by installing renewable energy as a community action under the landcare approach. As the model demonstrates, in the proposed mechanism for renewable energy, the community, individuals, families and social enterprises for renewable energy management and local government play pivotal roles. At the end of this chapter, I consider fundamental questions about the relationship between national, state and local governance to support energy transition towards a renewable and sustainable society. I conclude that the application of the landcare approach to the development of renewable energy and community wellbeing is a sound counterbalance to more typical approaches to the global centralisation of governance.

Introduction

At the first International Conference of Landcare Studies held in Nagoya in November 2017, diverse practices from the global Landcare network were reported by more than 60 participants from 11 countries. Ideas based on individual experiences were first exchanged, and then supportive and creative criticism resounded. The dialogue became deeper and deeper day by day. Soon after the conference dialogue, the paper *Global resilience through local self-reliance – the Landcare model* (Seigel et al. 2018) was published. Consistent with this work, from the viewpoint of landcare ethics, this question can be asked: What kind of opportunities are there to engage the local community in renewable resource and energy development? In this chapter, I will try to create a dynamic link between renewable energy and the landcare approach at the local level, and show the reasoning behind proposed mechanisms for its realisation.

First, I give my specific perspective of landcare ethics based on the subsidiarity concepts raised by Michael Seigel in Chapter 3 of this book. Second, through the ideas of social scientists about nature, the environment and agriculture, I try to define and analyse the characteristics of natural and human resources and social enterprises (community entrepreneurship) regarding the progression of renewable energy at the local community level. Then I show the theoretical framework proposed by using these concepts and variables to realise the integrated goal of environmental protection and sustainable community development via the appropriate and targeted installation of small-scale renewable energy at local level.

Landcare ethics

The Landcare movement's origin in Australia

Landcare is a grassroots movement aimed at natural regeneration and environmental conservation. The movement was born in Australia in 1986. Seigel began his focus on landcare ethics from insights gained from his Australian experience. Seigel (2010:63–64) considered that 'Western Civilization was relocated in the Australian land', and at the same time, 'the traditional and original (Indigenous) culture had been cut off, and a new culture that is suitable for western (British) environment was planted'. In short, Australia's new history was shaped by British immigrants. Seigel further considered that:

Australian land has been developed by an ethnic group that has been living there only for 200 years and has its sense cultivated in Europe. European Australians were adapting the Western way to the natural environment of Australia and developing the natural history about Australian land and the environment by using Western language (Seigel 2010:63–64).

Consequently, although agriculture was being implemented in Australia with efforts to adapt to Australia's special circumstances, agricultural practices were fundamentally 'British'.

The British settlement of Australia, with its industrial agriculture, has indeed brought a blessing of crops, not only in that nation, but also as export goods to support other nations. Nevertheless, this has often been to the detriment of the Australian land. In many places, soil has been devastated through soil degradation, wind erosion, desertification, the invasion of alien species, uncontrolled forest fires and severe salt damage. In recognition

of this problem, many Australian farmers have squarely faced the crisis between the land and the environment. They have taken action aimed at restoring the damaged soil, and in short order they have expanded their ambitions to develop a comprehensive action for restoring land and nature, including forests, rivers, beaches, coastal areas and urban cities via sustainable resource management (Youl et al. 2006).

For more than 30 years, landcare practices in Australia have accumulated the experiences and habits that care for the land and the environment. Australian Landcare groups are now regenerating natural habitats and restoring the soil with careful monitoring. More than some 5,000 local Landcare groups of diverse ages take part in Australian Landcare networks. This network has not only thrived in Australia but has also expanded beyond its borders to 26 other countries in North America, Europe, Africa, Latin America and the Asia-Pacific region. Together, the participants in the global landcare network learn from the regenerative effect of landcare efforts on nature and the land; and from these learnings, the principles of landcare have emerged.

Landcare principles

Seigel (2013:12) summarises the key landcare principles as follows:

- Landcare is based on the operation of local autonomous voluntary groups. They operate on the initiative and under the control of local residents and are therefore rooted in the local community and attuned to the natural environment. Landcare groups are largely made up of primary producers and rural landholders.
- While Landcare groups address global issues such as climate change or biodiversity loss, their focus is still on what can be done locally to address these issues, without groups getting into debates about the politics of these issues.
- Landcare groups aim to address environmental issues holistically. In other words, they do not treat problems such as invasive species, soil degradation and salinity as independent of one another. Instead, they try to address the interconnected linkages between these issues and in relation to one another. The focus may be on a specific issue that is particularly serious in a given environment, but it aims to understand and deal with that issue in communion with other issues in the local environment.
- Landcare groups focus not only on the conservation or restoration of the natural habitat, but also on the wellbeing of the local community, including a focus on such things as the income of farmers and other primary producers. In this sense, the holistic approach mentioned above considers human society and the natural environment together in an integrated way.
- Landcare is often characterised by partnership and networking. This means partnership and networking among the different Landcare groups, and with the various levels of government, academics and specialists, business corporations, non-government organisations, etc.

We can define landcare through these principles. Consequently, landcare actions are based on the efforts of local groups rather than individual farmers. These groups treat environmental problems at the local level, adopt a holistic approach and apply an open-minded awareness. It is a practice and a movement that aims to achieve the regeneration of nature and preservation of the environment for the overall wellbeing of the bioregion, and ultimately for the global community and environment.

Care and landcare

I will look at the meaning of the term 'care' in the natural resource context. Caring means listening carefully (not only to people, but also to things). Careful observation will arouse concern and show specific ways of caring and support. Relationships can then be established between those who give care and those who receive care. Caring brings new encounters and experiences to those who give and receive care. Through these new encounters and experiences, those who care for others will develop a new identity. Those who receive care will also transform their way of thinking. From conversations with people who are 'living in the landcare world', we see that they are often learning something from being surrounded by nature and the environment and a caring community. It seems that by caring for land, they have gained a vision and peace of mind about their own way of life and living. In a community that has survived many crises while experiencing various natural disasters and social changes, there is a path to wellbeing that has been formed in the local land and bioregion – a sustainable pathway based on the rules of both human beings and nature.

In this context, landcare integrates care for the land with human, community and social relationships (Seigel 2018). If we acknowledge the dynamism between those who do the caring and those who are cared for, the Australian landcare network is an attempt to create a viable, new relationship between the self, life, land, nature and the environment, in the process of carefully re-encountering the land, nature, the environment and Indigenous people.



Landcare ... is a practice and a movement that aims to achieve the regeneration of nature and preservation of the environment for the overall wellbeing of the bioregion, and ultimately for the global community and environment.

Renewable energy as local resources

Landcare approaches to renewable energy

While Landcare in Australia emerged as a response to land degradation challenges and is primarily concerned with land management and restoration, there appear to be many parallels in the world of renewable energy. Many countries are facing the need to transform their energy grids from centralised systems based on fossil fuels and nuclear power to much more decentralised systems based on renewable energy.

Can the landcare approach and landcare ethics be applied to unleashing the potential of renewable energy? Seigel suggests that logical linkages can be drawn between the self-reliance that arises from renewable energy development and Landcare:

The introduction of small-scale renewable energy generation can promote local self-reliance. Renewable energies are essentially of the local commons, so when communities take the initiative to install and manage renewable energy resources, they contribute to community cohesion, as well as to energy independence and regional sustainability (Seigel et al. 2018:14).

Renewable energy opportunity is fundamentally a shared resource in the local community – it is a ‘commons’ resource. Community-based action to install small-scale renewable energy will encourage local energy independence, sustainability, resilience and wellbeing. This raises questions such as:

- Who owns renewable energy?
- Is natural energy a shared resource of the local community?
- How can we enable local communities to utilise renewable energy and manage it for their own wellbeing?

This chapter seeks to organise and integrate these ideas.

Resources and local resources

Economist Jun Nishikawa defines resources as:

Natural resources of living and non-living objects (land, minerals, forest, water, wildlife and marine products) that are originally consumed in a processed or unprocessed state to satisfy human needs. It also consists of human resources (labor force, skills, morale of workers) and cultural resources (technology, production system, organization) that actualize revealing potential resources. In a broader sense, it includes non-consumable potential resources such as climate and geographical conditions (Nishikawa 1974:88).

According to Keiichi Sakamoto, a philosopher of agriculture, natural resources can be further divided into biological resources and mineral resources. Biological resources are ‘resources for agriculture’ and are often related to land and water, forest and food production. Mineral resources, on the other hand, refer to industrial raw materials and fuels, resources for industrial use (Sakamoto 1989:9).

Economic growth has become the dominating issue in each country through industrialisation. For industrialisation, the following three resources are required:

- mineral resources (chiefly minerals and energy)
- social resources (the input of capital, policy support and legal support)
- human resources (a reliance on skilled workers).

As a result of pursuing the efficiency and thoroughness of these three resources, a development and economic growth focus at the nation level was promoted and progressed on a global scale (this is called ‘globalisation impact’). Furthermore, the sociological point of view attempted to expand the concept of resources to include information resources: knowledge and ideas and network resources (Shibata 2012:516). ‘Network resources’ refers to social welfare resources and are defined as a means ‘to satisfy the needs of individuals and groups and to maintain, survive, and develop social systems’ (Hamashima et al. 1977:254).

From the perspective of civil engineering and planning studies, the concept of environmental resources has emerged in response to discussions regarding climate change, the peak-oil problem, environmental load assessment and other environmental elements. Particularly during the period from the 1980s to the 1990s, there was lively discussion about the carrying capacity of the planet. ‘Carrying capacity’ refers to the limited or allowable amount of human activity that does not impair the natural purification ability of the land. It assesses the population that can survive on finite land and the environment. To evaluate at the local level within a certain range, five perspectives are shown: ecological, physical, facility environment, economic and social carrying capacity (Stewart 1993).

In the development of a nation that is based on exploitation and economic growth, the first process of development gives weight to secondary industries, chiefly the manufacturing industry. Later, more weight is given to tertiary industries, such as education, medical care, welfare, tourism and culture. In addition, the concept of resources is expanded to include information, welfare, nature and the environment.

Whereas the concept of resources has been developed mainly to enable discussion about development and growth of the nation-state, the concept of regional resources attempts to grasp various elements at the more local level in an integrated manner.

Sociologist Morio Onda defines local resources in the following five categories:

- human resources (residents' qualities of compassion, diligence, honesty and simplicity)
 - cultural resources (heritage and the way of land use and traditional culture)
 - capital resources (regional economic cycles, local finance and the citizens' economy)
 - information resources (local ways of life, wisdom for nature and the environment)
 - network resources (residents' organisations, social networks and associations)
- (Onda 2002:2).

The concept of local resources is established on the basis of a community that has a certain range as a region of sustainable resource production, supply and consumption. People aim at locating, sharpening, and utilising the 'things' in the area as the main body. As a result, the concept of local resources is reconfigured in recent years to connect 'human', 'thing', 'finance' and 'information' to encompass the wisdom and network of people who create new value, and to realise the wellbeing of the community and bioregion. Understanding this background to resources illustrates how the consideration of local resources by communities increasingly supports and underpins the actual restoration of nature and sustainability at the local level, and often in response to modernisation and globalisation.

Community enterprise for renewable resource management/development

Many consider that 'the best Landcare groups and networks eventually become community enterprises, contributing to livelihoods and building independent resourcing' (Seigel et al. 2018:6). Landcare enables people to make a living and have voluntary resources. Landcare-like concepts can be used to consider the concept of social enterprise for renewable resource management – the enterprise being a local actor that integrates the use of local resources, environmental conservation and the wellbeing of the community and bioregion. There is a growing and active academic interest about social enterprise in business and management, policy studies, economics and sociology. Indeed, theoretical research on social enterprises has two trends in the United States and Europe (Kerlin 2006).

In the United States, social enterprises are regarded as hybrids of commercial enterprises and not-for-profit organisations. Charismatic social entrepreneurs stimulate social innovation by creating new markets with new added value by their own ideas, networks and management skills. They solve social problems through social services. This is commonly seen in the trend of commercialisation of not-for-profits, commercialisation and sophistication of social services, and socialisation of commercial enterprises (for example, corporate social responsibility and philanthropy).

On the other hand, in Europe, social enterprises are regarded as hybrids of cooperatives and not-for-profit organisations. Under the reorganisation of the welfare state and of the third (largely not-for-profit) sector, there is a new focus on issues related to social justice, such as the increase in long-term unemployment, the impacts of social exclusion, the lack of social welfare services and the vast amount of public funds put into not-for-profits and cooperatives.

In this process, 'a cooperative that had been originally [aimed] towards common interests has become interested in the public interest in the local community', whereas not-for-profit organisations strengthened their business approach. As cooperatives and not-for-profit organisations became more similar, the term 'social enterprise' came to be used (Fujii et al. 2013).

Focusing on the resources that support organisations and businesses, the problems of both become clear. European social enterprises are directly affected by government policies because of their reliance on governmental resources as their main source of finance. In the United States, social enterprises require organisational management through business revenue by customers whose preferences frequently change and who have the freedom to purchase other services. They are largely dependent on the qualities of their charismatic leaders to continue to provide new services by reading changes in customer tastes. Management organisation also depends on the talent of the leader.

In contrast, social enterprise based on renewable energy resources as the foundation resources are dependent on the natural environment of the region and the social wellbeing of the community. Since renewable energy is a local resource rooted in the local community, the spatial scale of social enterprises is inevitably appropriate at the regional level, and the scope of problem-solving is also limited to local issues. In this way, social enterprises for renewable energy resource management integrate conservation and restoration of the natural environment and community development at the regional level (Fujimoto and Kagohashi 2019), just like a landcare model.

A landcare approach to renewable energy and community development

Planning and local works

How can we combine landcare ethics and renewable energy in the mechanism of community development? Essentially, landcare is premised on the need for local autonomy and self-reliance, for partnership and networking to support that autonomy and self-reliance, and for a holistic and integrative approach to local sustainability. The key principle has been community ownership of problems and solutions at the local level, with the direct engagement of local individuals in planning and works.

According to this description, the mission of landcare activities is to establish community sovereignty in each locality. Planning and works are designed at the local level, with the primary producers and residents as the main actors. Landcare efforts that concern both social issues and the solutions of regeneration of nature and the environment are approached within the region. Partnerships and networking features also provide insights for this mission. Landcare builds a community that seeks the wellbeing of both that community and the bioregion. It maintains and improves the lives of residents and rehabilitates and preserves the natural environment as a total integrated goal. Landcare must cope with limitations of technology and expertise, funds, active time and other factors in the local community.

Consequently, it is also important to build a network with the broader world for problem-solving and value creation. Partnerships and networking are aimed not only at developing globally relevant efforts but at developing awareness that deepens collaboration with various local agencies and people, performs strategic common tasks and fosters community wellbeing.

Renewable energy and community

Almost all countries (especially more mature democracies) will soon face a declining and ageing population. Financial support from the state for the improvement and rehabilitation of public facilities and the repair and updating of living and social infrastructure will significantly decrease year by year. The burden of care for, and communication with, elderly people and children, hospitals and welfare, social security and life security will shift from the national to the local scales. Who will support the lives of residents in the community and the sustainability of local society and the environment? How will this be accomplished? This is our challenge and the challenge for future generations. Until recently, small societies have been the basic unit of life for social and environmental sustainability at a bioregional scale. How can we establish the wellbeing of life, society and the natural environment for the future?

Can we realise the goal of self-reliance, family and local communities while fostering diversity of resources via social enterprise? The key players – primary producers and residents as a Landcare group, social or community enterprises for renewable energy, and local government – share the environment and renewable energy opportunity within the bioregion. This is the basic idea of renewable energy and community-led effort guided by landcare ethics. Primary producers and residents engage in local resource management. They can be a powerful force in launching a social enterprise for renewable energy at the local level. Social enterprises for renewable energy produce and supply not only food, electricity and thermal energy but also welfare services for the residents. These residents can be given food, energy and welfare services inside the local community. There is less need to purchase food and energy from elsewhere. Enterprises and residents pay taxes to local governments, and local governments maintain social infrastructure and manage public facilities, public transportation and other public services.

The role of local government in this approach to renewable resources is to:

- oversee permits, regulations and penalties to enable sustainable use of local resources and natural capital
- provide entrepreneurial support for community enterprises by being aware of networking and partnership opportunities, encouraging regional internal connections and fostering the creation of new industries and services
- maintain and update a basic infrastructure, support life and corporate activities for the residents and guarantee living support for people who wish to relocate to the community
- incorporate the ideals and principles of landcare and become active participants in the community's effort to transition to renewable energy.

Conclusion

To adopt these Landcare-style principles to the real world of renewable energy transition, the organisation of the local society must be strengthened. First, it is necessary to raise the social structure of communities to improve local autonomy and independence. On the roles and potential of the local governments as a comprehensive and responsible entity, economist Tokue Shibata set forth the ideas of Jurist Michitaka Kainou, the first director of Tokyo Metropolitan Pollution Research Institute in 1969:

All current tax shall be changed as a local tax, the necessary expenses such as diplomacy and the judicial/metrological system required by the central government should be assessed by the local governments and distributed to the government from the local tax. When the central government holds tax revenue, that is money from another world and they further sacrifice the poor citizen's life, go to war as in the past, and build useless roads, big bridges and huge dams. If we enrich local governments familiar with civic life and let local rural areas have sufficient economy and finances, the eyes of local residents will be sharp even against the occurrence of pollution, and measures can be strengthened accordingly (Miyamoto and Awaji 2014:21).

Kainou's idea resonates with economist James Robertson's view that emphasises taxation on energy drawn from natural capital and resources. Robertson suggests imposing an environmental tax as a royalty on those who benefit from natural resources that are common resources of all human beings. Robertson (1998) stipulates the principle of environmental tax as follows: anyone who benefits from using 'shared property' that are resources and valuable objects not created by humans, but by nature and society, must pay compensation. In other words, the environmental tax is a taxation on activities that consume resources and damage the environment, and is a taxation on the value derived from nature and the environment by technology.

Kainou and Robertson's ideas raise fundamental questions about where the source of social wealth lies, and the need to reorganise the relationship between the state and the local government. This proposal is supported by the basic principle that nature and natural resources belong to all.

This chapter, from the viewpoint of landcare ethics, tries to present a basic framework to utilise renewable resources and establish community wellbeing. Because of the dynamics of landcare and renewable resources, the local community (including primary farmers, residents, social enterprises and local government) becomes integrated into the idea of a sustainable community.

Landcare represents a philosophy and culture that began in Australia and has grown over 30 years of experiences and passion. Landcare ethics are now expanding globally. What is the good society driven by landcare ethics? What is the wellbeing of the community and bioregion led by landcare practice? In landcare activities, the power of nature to reproduce echoes individual lives, giving power to the people. People are being slowly healed at the same time as they regenerate damaged nature and adopt the practice of protecting the environment. We are finding a place where hope lies.

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References

- Fujii A, Harada H and Otaka K (eds) (2013) *Tatakau Syakai Kigyuu: community empowerment no ninaite*, Keisoushobou.
- Fujimoto T and Kagohashi K (2019) 'Community-led micro-hydropower development and Landcare: a case study of networking activities of local residents and farmers in the Gokase township (Japan)', *Energies*, 12(6):1–9, accessed 10 March 2021. <https://www.mdpi.com/1996-1073/12/6/1033>
- Hamashima A, Takeuchi I and Ishikawa A (eds) (1977) *Shinban Syakaigaku Syoujiten*, Yuhikaku.
- Kerlin J (2006) 'Social enterprise in the United States and Europe: understanding and learning from the differences', *Voluntas*, 17(3):247–264.
- Miyamoto K and Awaji T (2014) *Kougai Kankyou Kenkyu no Pioneer Tachi: Kougai Kennkyuu linkai no 50 nen*, Iwanamisyoten.
- Nishikawa J (1974) *Shigen Nationalism: Senshinkoku riron no houkai*, Diamondsha.
- Onda M (2002) *Global Jidai no Chiiki Zukuri*, Gakubunsha.
- Robertson J (1998) *Transforming economic life: a millennial challenge*, Green Books, England.
- Sakamoto K (1989) *Ningen ni totte Nougyou toha nanika*, Gakuyosyobo.
- Seigel M (2010) 'Australia Boomanoomana Landcare group: Torikumi, Jisseki, Oyobi Mondaiishiki', *Syakai to Rinri*, 24:63–64.
- Seigel M (2013) 'Secretariat to promote the establishment of Landcare in Japan', *SPELJ Newsletter*, Issue 1.
- Seigel M (2018) 'Landcare to Hokansei no genri', *Syakai to Rinri*, 33:17–33.
- Seigel M, Kagohashi K, Dale A, Quealy J, Mason A and Youl R (2018) '*Global resilience through local self-reliance: the landcare model*', a summary of the discussion of International Conference of Landcare Studies 2017, Nanzan University Institute for Social Ethics and Australian Landcare International, Nagoya.
- Shibata Y (2012) *Gendaisyakaigaku Jiten*, Koubundo.
- Stewart C (1993) *Recreational and developmental carrying capacities of coastal environment: a review of relevant literature and research*, Atria Engineering Hydraulics Inc.
- Youl R, Marriott S and Nabben T (2006) *Landcare in Australia: founded on local action*, SILC and Rob Youl Consulting Pty. Ltd., Melbourne.

