Paths to the future are made, not found—sustainability and Landcare

We have looked at some Landcare groups in action and related initiatives within the Landcare movement, and we have summarised the impact of Landcare to date and some of the constraints to landcare. This chapter is based on the premise that the overall goal of the Landcare movement (consisting of community groups; local, state and national government agencies; non-government organisations and agricultural businesses) is sustainable land use and management.

WHERE ARE WE GOING?

Phillip Adams, writing in The Australian, makes a succinct case for thinking about the future and planning for it: 'The future is not some place we are going to but one we are creating. The paths to it are made, not found.'

This is more positive than its flip-side, as Mark Twain observed: 'If you don’t know where you are going, any road will get you there.'

In developing a framework for Landcare, let us start with the purpose or mission to decide where we are going, then consider what is required to get there. Historically, soil conservation in Australia has had a focus on problems—fixing land degradation. This was understandable in the 1930s and 1940s, given the spectacular nature and immediacy of some problems, notably wind and water erosion. But the emergence of more complex issues such as salinity, soil structure decline and acidification, the stirrings of some ecological literacy among agriculture and land management professionals in the 1970s and 1980s, and the relentless socioeconomic
squeeze between the pincers of rising costs and diminishing returns, necessarily shifted the focus to the development of sustainable systems of land use and management.

This is not to suggest that significant sectors of the Landcare movement are not still preoccupied with particular land degradation problems, or that it is invalid to concentrate on rabbits, for example, if they are the key agent of destruction. We must reiterate, though, that Landcare will progress only if it is mission-directed—‘work together to develop sustainable systems of land use and management’, rather than problem-centred—‘fix land degradation problems’.

**SUSTAINABILITY—IN THE EYE OF THE BEHOLDER**

The 1980s and early 1990s have seen a major new thrust in environmental discourse—a move away from merely highlighting problems such as waste disposal, pollution and natural resource depletion (pointing out what is wrong with the system), towards proposing new systems for managing natural resources and producing food and fibre which meet the needs of society without compromising the ability of future societies to meet their needs. The word which characterises this discourse is *sustainability*. Sustainability is the preeminent issue in agriculture and natural resource management today, and the concept of sustainable development is gaining increasing attention in mainstream politics.

The essence of the sustainability debate is how to safeguard nature’s productive capacity to support human existence in a way which best fits the lifestyle aspirations of current generations. Let us attempt to deconstruct this chameleon of a concept, as a prelude to focusing on the role of Landcare in a wider policy setting.

The current debate about sustainability was anticipated early last century by Thomas Malthus, David Ricardo and John Stuart Mill who, from various perspectives, questioned the viability of continued economic growth.259 The following quote (from Mill’s *Principles of political economy*, 1848) forecasts a state of affairs which could be taken directly from a contemporary green critique of industrial agriculture:

> Nor is there much satisfaction in contemplating a world with nothing left to the spontaneous activity of nature; with every rood of land brought into cultivation, which is capable of growing food for human beings; every flowery waste or natural pasture being plowed up, all quadrupeds
or birds which are not domesticated for man's use exterminated as his rivals for food, every hedgerow or superfluous tree rooted out, and scarcely a place left where a wild shrub or flower could grow without being eradicated as a weed in the name of improved agriculture.260

Since the United Nations Conference on the Human Environment at Stockholm in 1972, the term 'sustainability' and the momentum of the sustainability debate has increased, particularly after the World Commission on Environment and Development published Our Common Future (commonly referred to as the Brundtland report) in 1987, and in the period leading up to and including the United Nations Earth Summit at Rio de Janeiro in 1992.

However, despite a great deal of attention in the environmental literature, a precise definition of sustainability remains elusive. The concept of sustainability is like democracy—difficult to define given a diversity of social settings, elusive in its applications, yet essential as a goal for the future.261

The best known definition of sustainability is that in Our Common Future:

*Sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.*

This is an all-embracing definition which of course has very different dimensions depending on whether the defining perspective is economic (sustainability as food sufficiency), social (sustainability as community, based on equity) or ecological (sustainability as stewardship, maintaining the productivity of renewable resources).262 Gordon Conway builds on this point, noting that there is a tendency to mix up social, economic and ecological parameters within the notion of sustainability (comparing apples and oranges), which limits its usefulness and makes it impossible to measure. In developing criteria for analysing the performance of an agro-ecosystem (or rural development as a whole), Conway used a narrow definition of sustainability, complemented by productivity, stability and equitability, as discussed in Chapter 6.263

Agriculture is one field of human endeavour in which the concept of sustainability has had, and can potentially have, most impact. The broad definition of sustainable agriculture below highlights
its value-laden nature, hinting at possible reasons for the relative tardiness of the agricultural and scientific establishments in coming to terms with the challenges implicit in sustainability.

Sustainable agriculture is both a philosophy and a system of farming. It has its roots in a set of values that reflects a state of awareness of ecological and social realities and of one's ability to take effective action. It involves design and management procedures that work with natural processes to conserve all resources, minimise waste and environmental impact while maintaining or improving farm profitability.264

Modern science has tended not to question, or even be conscious of, the philosophical assumptions and values upon which scientific endeavour is founded. New processes, institutions and organisational cultures need to be developed to inform scientific endeavour with an explicit recognition of ethics and philosophies, and to involve all the relevant stakeholders, making deeper research into how sustainability might be approached more feasible.

Reviewing definitions of sustainability, it becomes obvious that parameters of sustainability are often confused with parameters of ecosystems, or communities, or markets, or societies. The latter are not parameters of sustainability, but when considered together, they can be used to give an indication of relative sustainability. Relative sustainability is a descriptor, a characteristic of an entity, phenomenon or system which emerges out of the interaction of a range of ecological, social and economic descriptors of the object of study.

Scales and parameters in space and time

Most people agree that the concept of sustainability embraces ecological, economic and social indicators, but there is confusion as to how these diverse perspectives with their different languages and schools of thought can be integrated to develop better systems of land use and management. Some of the confusion in attempting to integrate social, ecological and economic perspectives of sustainability can be removed by creating a hierarchy of dominant constraints and goals at different scales in space and time. Figure 9.1 illustrates such a hierarchy.265 This diagram should not be interpreted as suggesting that at the field scale, only agronomic considerations are important, or that only macro-economic indicators
Monitoring a peizometer in the northern wheatbelt (WA).

Shearing north of Carnarvon—a farming system which is fundamentally the same after more than a century. But for how much longer?

ANDREW CAMPBELL
There is great potential for Landcare within country towns, such as here in Hamilton, where the Hamilton Institute of Rural Learning (foreground) has established a protected habitat for the endangered Eastern Barred Bandicoot *Parameles gunnii*, and the town-based Landcare group is actively trying to improve land management within the city of Hamilton.

ANDREW CAMPBELL
A Farm Advance bus tour.

HELEN ALEXANDER

Below: Urban volunteers planting trees for the Warrenbayne-Boho group.

ANGUS HOWE with a see-through piezometer showing positive groundwater head—making a problem more visible.

ANDREW CAMPBELL

Ian and Joan Walsh.
This spectacular, stinking, poisonous outbreak of blue-green algae, along a 1000-kilometre stretch of the Darling River in November 1991, was an eloquent call from a river threatened by excessive regulation of its flows, draining of its former natural wetland filters, runoff of agricultural chemicals and soil, and conflicting and unsustainable demands on its water.
count at the national level. Rather, it is suggesting that at each level some perspectives assume particular importance, and it is useful to be conscious of that and to start with the parameters arising from that perspective.

In the paddock, agronomic considerations predominate, over a time scale of several seasons. Parameters such as soil stability, structure and fertility; water, mineral, energy and nutrient budgets; pest and disease management and productivity are important at this scale. These are the building blocks of a sustainable system, and these parameters provide a starting point for assessing the sustainability of existing land management practices and for defining agronomic research priorities. A great deal of useful research has been done at this scale, especially with a view to improving production. However, we still have a lot of work to do to integrate

Figure 9.1  A hierarchy of sustainability
existing knowledge, and to focus on gaps in knowledge in order to develop a practical and informative suite of indicators which farmers can use to keep track of the relative sustainability of their farming practices at the paddock scale.

It is important not to confuse indicators with absolute thresholds, which are more problematic. We are talking about indicators to help land users see in which direction they are moving for a given parameter, along a spectrum which has 'more sustainable' at one end and 'less sustainable' at the other. We have already discussed some of the tools being developed (e.g., soil structure assessment kits, farm monitoring handbooks, MEYcheck) and the work being done to help farmers manage this information—for example, by the FM500 project and the various property planning initiatives.

At the farm scale, the survival of the farm business over several generations is paramount, dominated by micro-economic constraints. When farmers say that they can't afford to be sustainable, that current best practices are beyond their existing means, this is often a rational response which cannot be dismissed by talking vaguely about the 'long term' or 'the good of the catchment'. Leaving aside for a moment the overwhelming evidence of ecological dysfunction, many farming systems in the industrialised world are unsustainable because they are not profitable. Inexorably declining terms of trade provide compelling reasons to change farming systems, even if there were no land degradation. Simply put, profitability at the farm scale is an essential ingredient of sustainability, within the structural context of capitalist, export-oriented agriculture. While we have seen in Chapter 6 that some farmers are still managing to be environmental innovators during a terms of trade squeeze, available evidence suggests that farmers under financial pressure tend to respond by placing greater pressure on their land, with tighter rotations, higher stocking rates and lower inputs.266

Much less research has occurred at the farm family scale. Some pragmatic and valuable work has been done by the hardworking (and often stressed) people in the rural counsellors' network, who help farm families in desperate financial straits with advice, with assistance in negotiations with their creditors, with debt restructuring and, if necessary, with planning an exit from agriculture. There is a wealth of anecdotal information and raw financial and social data which we could be using to add depth to an admittedly depressing picture, which could inform the socioeconomic components of more holistic analyses of farming systems. Of course, ecological concerns such as nutrient, energy and water budgets, and biodiversity, are also important at the farm scale. At the risk of
repetition, this information is best applied by farmers themselves, ideally with the assistance of facilitation in a group context. The role of the outsider is then one of facilitating learning processes rather than transferring information.

At the catchment or landscape scale, ecological concerns of maintaining life support systems over hundreds of generations predominate. At this scale, issues such as energy inputs, solar energy interception, wildlife habitat, waste management, water use and water quality, catchment hydrogeology, and the ability of agroecosystems to recover from droughts, floods, fires, pests and diseases, are potential parameters which can be used to indicate relative sustainability. These are complex issues, poorly understood by modern science, as most agricultural and land management research has concentrated on understanding the function of systems at the cell/plant/plot/crop and occasionally farm level. This scale could also be called the community scale, where the social issues (such as the demography of the population, access to education, health and other facilities) which have a critical influence on the quality of rural life, also emerge. Once again, little work has been done, nor is much being done, to explore the linkages between these issues and agricultural sustainability.

Ted Lefroy and colleagues have developed a framework for assessing the relative sustainability of land use in the Western Australian wheatbelt, at the landscape scale. They suggest that four ecological processes—the cycling of water, the cycling of nutrients, the flow of energy, and the extent to which biodiversity is conserved and restored—should be the initial assessment criteria. Within each of these ecological parameters, they propose a number of indicators (e.g. surface water quality, soil biological activity, diversity of native fauna and solar energy interception), going so far as to suggest units of measure, present known levels, realistic transitional levels and desirable levels. Again, this is not an attempt to define absolute ‘givens’ within a land use system, but it does provide a useful framework for debate and negotiation, and it serves to expose gaps in existing knowledge and areas where research is needed.

A system which is ecologically promising should then be assessed according to economic parameters such as profitability, cash flow, equity and debt, net present value, practicality and acceptability. We would add some social indicators, for example, the extent to which the system is:

- appropriate: reflecting, and adapted to the needs, skills, training and finances of land users as well as to environmental constraints;
• self-reliant: based on the efforts and ideals of land users themselves on a regional level—minimising the dependence on non-renewable, imported resources;
• non-disruptive: compatible with the socio-cultural environment—not, for example, forcing people to adopt practices against normal behaviours and traditions, or resulting in migrations of rural people to cities.268

There is great potential here to develop technologies which combine ecological insights with social technologies being developed in the various land literacy programs to involve a significant proportion of rural populations in gathering, interpreting and using this information.

At regional and national levels, the dominant constraints are macro-economic, and unfortunately planning horizons are limited by politics and economics. The platform of community participation and commitment being built by Landcare groups has the potential to ensure that sustainability is a bi-partisan issue insulated from short-term politics. Many people in Landcare groups, though, are still not convinced that 'Canberra is fair dinkum' in its commitment to sustainability. Talk of 'level playing fields', and the apparent confidence of commentators and spokespersons in the capacity of the market and technology to 'fix' environmental problems, merely feeds cynicism in the bush about whether the Australian government or the larger mass of voters cares about farmers at all. There is a link between macro-economic and trade policies and pressure on the land which is all too clear to farmers struggling under the combined weight of high real interest rates, increasing input costs and declining returns, ostensibly due to 'unfair' American and European trade policies.

It is salutary to ponder the outlook for Australian farmers if the Americans and Europeans ever stop subsidising the export of their surpluses. After a probable short-term improvement in world commodity prices, the long-term trend of rising costs and diminishing returns for the raw products is likely to continue. Thus, even if there are favourable developments in the external political/economic environment, more fundamental changes in Australian agriculture are required.269

If one accepts the simple proposition that human consumption of natural resources cannot continue to double each generation, then one has implicitly entered the sustainability debate. Sustainability is in the eye of the beholder. It is a relative concept which cannot be defined, measured or broken down into compo-
nent parts. But social, ecological and economic parameters, or attributes of systems, entities or phenomena can be defined and measured, which, when considered together, give an indication of relative sustainability. For a given parameter, certain levels or trends may be 'more sustainable' or 'less sustainable' or 'non-sustainable', or even 'sustainable' (in a narrow ecological or economic sense). However, the evaluation of social, ecological and economic attributes of an entity to assess its relative sustainability is never an objective process governed by natural laws or mathematical formulae. Such evaluation is a matter of weighing up and trading off values, beliefs, priorities and goals, and it is thus inevitable that assessments of relative sustainability are socially constructed.

To emphasise the point that determining relative sustainability will always be a matter for negotiations and trade-offs, one has only to realise that in any discussion of sustainability it is necessary to clarify some simple questions: sustain what?, for whose benefit?, measured by what criteria?, over what area?, for how long? We have discussed some possible criteria and assessment frameworks, but clearly these are subjective choices which should be considered by the whole population, not left to the so-called experts.

The concept of sustainable development (development in the sense of improvement or realising potential, rather than growth or expansion) can be an extremely powerful and heuristic force in the global environmental debate. However, we must stop trying to define the indefinable, and focus instead on developing the social, political and economic technologies, processes and institutions required to put this concept to work, in a spirit of discourse, learning and constant adaptation with changing technologies, values and environmental indicators. We need a hierarchy of institutions and social learning at national, bioregional and local levels, with as much decentralisation and devolution of economic and political processes as possible, to ensure that decisions and trade and their consequences are rooted in local soil, but accompanied by sufficient mechanisms of communication, accountability and influence to enable assessment and interventions with respect to sustainable development at higher levels of aggregation and human agency.

Developing these institutions and processes is not just a matter for the technocrats and the politicians. If we are to be at all effective in tackling the root causes of environmental problems, then we must change values, beliefs and attitudes. Such changes must be both deep and widespread, and they will not occur by remote control, but only through the involvement and commitment of people
at all levels and from all walks of life. So we need new ways of learning and communicating and making big decisions if we are to capitalise on the line of thought opened up by this slippery notion called sustainability.

The role of Landcare groups is critical, both at local and regional levels. Landcare and its associated land literacy initiatives have the potential to help society to re-examine and re-define its relationship with the natural resources upon which it depends, in a climate of high decision stakes, clashing interests and technical uncertainty, at scales in space and time which frustrate traditional political institutions.

The activities and perspectives of those people attempting to practise sustainable agriculture are the main focus of this book. As our thinking on sustainability develops, evaluative tools will emerge. The thinking about the sustainability of existing systems and how to improve them, should occur most of all inside the heads of those managing natural resources. This thinking is likely to be stimulated by personal involvement and participation, which is why Landcare is a foundation stone for more sustainable systems of land use and management.

**HOW DO WE GET THERE?**

So the ultimate goal of Landcare is sustainable land use. How do we get there? We have posited that land use is only likely to become more sustainable or less sustainable—sustainability is not an end state which we can reach and then sit back to enjoy the view. The focus, then, is how do we become *more sustainable*, and what is the role of Landcare groups in this quest?

The most important roles for Landcare groups, against which their performance can best be assessed, are to increase the commitment of individuals and communities to the development of more sustainable land management systems, and to be active participants in the learning processes (gathering, interpreting and using information) necessary at a community scale to devise, implement and refine improved systems of land use and management.

But commitment on its own is not enough. Moving through the wider Landcare movement, one can sense that Landcare is almost by osmosis becoming Australia's main thrust against land degradation, such are the hopes being vested in raising awareness. Awareness and commitment are essential conditions for sustainability, but they are not sufficient conditions.

Land users may be aware of a problem and committed to do
something about it, yet be constrained by a lack of technically feasible, economically profitable solutions. Anyone criticising land conservation extension in Australia should first look at the technologies farmers are being asked to adopt. In many cases the problem lies with the technology rather than with extension or farmers.

John Cary from the School of Agriculture and Forestry at the University of Melbourne has spent many years researching the social and economic aspects of land degradation, with particular emphasis on farmer beliefs, attitudes and behaviour, and the relationships between them. He suggests that beliefs about the conservation value of particular practices are relatively unimportant determinants of adoption compared with their profitability, practicality and riskiness, and that land users have generally not adopted conservation technologies as an insurance against future loss of production. Cary concludes that land users are not unresponsive to changing community values about land management, but they will generally see through simple prescriptions to complex land management issues. Where existing knowledge about problems and solutions has a high degree of uncertainty or lack of specificity for local districts, then people may well be aware, concerned and committed, but they are acting rationally in deferring investment of money and effort until outcomes are better understood.270

However, as Landcare groups mature and gain credibility, many appear to recognise the need for standards of land management to be set and adhered to. The logical next step in this development is for Landcare groups to have some say in the regulatory process. It would seem preferable from a farmer’s perspective if agriculture can regulate itself rather than have regulation ‘externalised’ or put in the hands of others. There are elements of this approach in the land conservation legislation of South Australia and Western Australia, and in proposed new legislation for Tasmania and Victoria.271 Regulatory activity is at the margins of Landcare, which is really about voluntary change. While the objectives of Landcare may also be worked towards by other policy instruments such as regulation and taxation, the Landcare movement and particularly community Landcare groups are primarily concerned with influencing the voluntary behaviour of individual land users to develop and apply more sustainable land management systems at the farm and catchment scale. Niels Röling of Wageningen Agricultural University in the Netherlands has examined rural development and agricultural extension initiatives in most parts of the world over the last 30 years and has some firm views on the ingredients required for voluntary change:272
A crucial tool in the management of human affairs, especially ‘development’, is deliberate voluntary change, through such non-coercive policy instruments as education, information and persuasion. To be effective, these instruments must be based on anticipation and participation: they will work only when the change interests or benefits the people whose change is deemed desirable. Hence, their effectiveness depends on ‘upward’ communication...

Knowledge is a vital ingredient in voluntary change. People will change voluntarily if they have the required (1) knowledge and (2) capacity and (3) motivation, and (4) if the change is socially acceptable. Since deliberate knowledge management can anticipate the other three to some extent, knowledge has been seen as a key manipulable factor in voluntary change. There is a great deal of truth in this, as long as one accepts (a) that mobilisation, organisation and training for empowerment not only requires knowledge development (eg, awareness building), but also organisation and leadership development and participation, and (b) that applying knowledge requires resources, even if development is increasingly knowledge intensive.

Paraphrasing Röling, there are three key ingredients required in order for land use and management to become more sustainable: land users must want it, they must have technically feasible options which are economically viable and socially acceptable, and they must have the capacity (resources) to implement change. There is also a fourth ingredient which is equally important—the processes required to change from existing systems in a coordinated way, particularly at the landscape scale, to anticipate and plan for change, rather than reacting to it. This is not to suggest that sustainability is something which can be ordered in a prescriptive way, that there is a blueprint which everyone should implement. More sustainable systems of land use are much more likely to occur through a diversity of approaches as land users and communities evolve new systems of land use according to their own circumstances. Figure 9.2 represents four key ingredients underpinning the goal of sustainable land use. It also attempts to place Landcare groups in context among some other key influences on land use.

However, this diagram does not adequately convey the feeling that, if any one of these ingredients is missing, the whole house of
cards falls down. Nothing substantial happens if any of these is omitted. In fact there is the danger of going backwards if false hopes are raised and early enthusiasm becomes soured by frustration and cynicism. Without commitment, other priorities will always be more urgent than developing sustainable farming systems. Without resources, people will become burnt out by anxiety and frustration. Without a knowledge of where we are going and how to get there, the fast start fired by initial enthusiasm will lose momentum. Without a process for planning for change, involving the relevant players and determining actionable first steps, adhockery and false starts will result.

![Sustainable land use and management](image)

**Figure 9.2** Ingredients for sustainable land use

This is why Landcare groups and their role must be seen in a wider context. It is simply unfair and totally unrealistic to expect voluntary groups of people, even if there were a hundred thousand active Landcare members, to fix land degradation or develop more sustainable farming systems without significant external support—financial, technical, institutional and moral. The institutions and processes required to provide this support are not just important to consolidate the impact of Landcare groups, they are essential if Landcare groups per se are to be sustained.

Most Landcare groups are less than five years old, firing on the enthusiasm of the ‘goers’ who initiated them. However, the Landcare movement is now at a critical stage after its first few years of rapid growth. There is an emerging debate within the Landcare movement about the extent to which Landcare needs to become institutionalised into the mainstream of rural policy in Australia.
There are those who believe Landcare needs to be organised into some form of democratic structure with clear links from Landcare groups to regional, state and national representative bodies with direct control over financial and technical resources. Others believe such a move would bureaucratise Landcare, swamp it with meetings and rob it of its key feature—diversity and lack of formal structures.

Past experience with cooperative community-based movements suggests that some structure and regulation through which collective decisions can be made and implemented, and through which resources can be delivered and accounted for, is inevitable if voluntary group action is to achieve wider and more lasting impacts on environmental and social issues. Peter Cock acknowledges that participatory models of consensus building and decision-making processes have much to teach us, but he asserts that corporate models of socio-economic organisation are equally important to establish mechanisms for following through:

The environment movement ... has been strong on participatory decision making but weak on organisational clarity, efficiency and accountability. Afraid of any hint of hierarchy, it has often stripped itself of the collective authoritative capacity to act ...

A lack of effective social organisation leads to the following processes being set in train. In order to function at all there is a privatisation of decisions by the few, often in an informal way, that is difficult to access or challenge. Alternatively, or additionally, this disorganisation results in the formal monopoly of the most able, who become exhausted and burnt out in a few years. (In one sense the most committed tend to be consumed by the least committed.) The lack of explicit group power generates confusion, withdrawal and powerlessness, and adds to the burnout of those previously committed. Decision making meetings are no longer valued because they are so exhausting, further weakening the capacity for participatory democracy. The lack of clarity of structure—arising from fear of an emergent bureaucracy—results in confused lines of communication and coordination between components.

These problems are already starting to surface within individual Landcare groups, and are even more likely to arise when it comes to ‘scaling up’, to considering issues over whole catchments or re-
gions such as irrigation districts where cooperation and collective decision making are required across areas which are too large for everyone to know everyone else. If Landcare is to have a lasting impact, a degree of institutionalisation seems inevitable.