# Greening Australia (WA): Sustainability Submission

29 April 2002

## Scope and focus of this submission

Greening Australia (WA) is a membership-based, not-for-profit conservation organisation that seeks to engage the community in vegetation management to protect and restore the health, diversity and productivity of our unique Australian landscapes.

This submission focuses primarily on Greening Australia (WA)'s perceptions of the requirements for achieving sustainability in the wheat-sheep farming regions of the south west. Although we emphasise the requirements for maintaining biodiversity in these agricultural landscapes, we also comment on other production, social and institutional issues that must be addressed if we are to achieve ecologically sustainable rural landscapes.

## Greening Australia (WA)'s view of sustainability

Greening Australia (WA) believes that an ecologically sustainable landscape is one in which the social and economic aspirations of the community are met without compromising the persistence of the natural biota and associated ecosystem functions at a landscape scale. We believe that the protection of conservation values should be fully integrated into other land-management systems rather than confined to a limited number of government managed reserves.

Because there are a number of ways to achieve economic and social outcomes, but few alternatives for maintaining biological diversity, we believe that the requirements for maintaining the unique biological wealth of the south west should set the framework within which other aspirations are met. That is, the requirements for ecological sustainability should limit the actions that are taken to meet economic and social goals.

**What would a sustainable landscape look like – the need for a new vision.**

The south west of Western Australia ranks among the world's top 25 areas of biological diversity. The region is also an important contributor to Australia's productivity and provides important rural lifestyle opportunities. If this unique and complex environment is to be sustained, it must be managed to meet a range of ecological, social and economic goals.

Greening Australia (WA) believes that current agricultural land-use practices are far from sustainable. Consequently, we believe that it is necessary to formulate a new vision for our rural landscapes prior to examining the methods required to achieve this vision.

**Greening Australia (WA)'s vision for ecologically sustainable landscapes**

The vision presented below represents the collective views of Greening Australia (WA). However, Greening Australia (WA) recognises that ultimately a landscape vision must be shared by all parties involved in land management and ultimately by the broader Western Australian community. Consequently, this vision should not be read as a prescriptive model for others, but rather as a starting point for articulating a collective vision which reflects the diverse range of values and aspirations within the community.

*Our Vision*

Greening Australia (WA) believes that an ecologically sustainable landscape is one that is able to retain its biodiversity and sustain the ecological processes that support natural systems and the production enterprises required to meet the community's needs for material and social well-being.

A landscape that simultaneously meets ecological, social and economic goals is likely to have some combination of the following biophysical elements:

1. Areas designated for nature conservation, protection of ecosystem function and provision of ecosystem services;
2. Areas of "benign production"- low impact land-uses designed to manage land-degradation and protect and enhance conservation areas while generating income for land-holders (farm forestry, carbon farming, timber products, wildflowers etc);
3. Areas of intensive production (eg. cropping) carefully located in the most appropriate parts of the landscape. The area allocated to these types of landuses should not exceed the capacity of the conservation and benign production land uses to absorb the impacts of these intensive land uses;
4. Areas for infrastructure located in appropriate parts of the landscape.

These areas will not always be mutually exclusive and, where possible, attempts should be made to gain multiple benefits from any given land use, provided the primary objective for that land use is not compromised.

Greening Australia (WA) believes that any vision-setting process must extend beyond general "motherhood" statements that are easily agreed by all stakeholders, but which are so general that they do not provide a clear course of action. The vision-setting process must be linked to more detailed processes that enable specification of the type and magnitude of actions required to implement the vision. Attempts to gain acceptance and implementation of landscape visions should be undertaken locally, but must be conducted in a context that ensures that local processes aggregate upwards to generate regional solutions.

***Nature conservation areas*** should comprise:

- Representation of all of the dominant vegetation associations. This will require representation of valley floor, mid-slope and upper catchment vegetation associations;
- Stable or increasing populations of all plant and animal species that naturally occur in the area of interest;
- Patches of each habitat type large enough to support those species that have the greatest requirement for habitat area and to provide a range of microhabitats for species that require less area;
- Connecting vegetation that ensures continuous populations of the most dispersal-limited species. This vegetation should be viewed as linear habitat for dispersal-limited species rather than simply "corridors" for mobile species;
- Native vegetation along all drainage lines of sufficient width to act as habitat for lowland species and to absorb detrimental impacts from adjoining land uses;
- Sufficient patches of connected habitat to ensure viable populations of all resident native species;
- Management regimes designed to manage threats such as weeds, inappropriate fire regimes, and feral predators.

Specification of the type, amount and placement of native vegetation, and associated management regimes, to address the requirements for sustaining biodiversity in a landscape should be determined by the requirements of the most sensitive species in that landscape. This reflects an assumption that, if threatening processes are managed at a level that protects the most sensitive species, other less sensitive species will also be protected.

It is important to acknowledge that, in the southwest agricultural landscapes, the protection of biological diversity will require significant habitat reconstruction, in addition to protecting the native vegetation that remains.

***Benign production areas*** should:

- be designed to protect areas used for nature conservation as well as areas used for production;
- be located on recharge areas, areas subject to erosion, and areas of low agricultural productivity;
- be diverse in their structure and composition to maximise their biodiversity benefits.

Benign production could comprise some or all of the following types of activities:

- Timber production, harvested on sustainable cycles;
- Flower, seed and fruit-production using native species;
- Grazing systems based on native perennial species;
- Carbon sequestration plantings;
- Bioenergy plantings;
- Other profitable perennial species.

A requirement of all farming systems is that the species used are not potential weeds and do not generate new environmental problems.

***Intense-production*** areas:

- should be located in the most appropriate areas for the land-use in question;
- should not utilise all land suitable for that land use;
- should be nested among other benign production and conservation land uses;
- should not exceed the capacity of other land uses to contain the detrimental impacts of the intensive land-use.

***Infrastructure*** should be located in areas where it does not threaten production or conservation values and is not susceptible to the impacts of salinity or extreme events such as flooding or fire. Clear criteria specifying the type and location of permissible infrastructure should be developed however these criteria lie beyond the mandate of Greening Australia (WA).

Drainage responses to salinity could be viewed in the context of infrastructure. While Greening Australia (WA) does not claim expertise in this area, we would argue that drainage alone will not provide a solution to the salinity and waterlogging problems facing the agricultural regions. Drainage should be considered as one aspect of an integrated response to gaining multiple land management outcomes. Any investment by Government in support of engineering solutions should insist that these activities be considered as part of a holistic landscape response to address a range of values, rather than focusing on a single issue response which benefits a limited number of individuals.

There is a case to be put that current patterns of land tenure are not suited to supporting sustainable land use and hence, that there is some need for rural restructuring. Land tenure should reflect the minimum area required to generate a socially acceptable level of income over the long term (>50 years) while protecting biodiversity and landscape integrity. Policy settings must be adopted which capitalise on high levels of property turnover in agricultural areas. It is important to ensure that property transfer is no longer used as a mechanism to extend the life of a non-sustainable farming enterprise by simply increasing the total area of a holding that is being managed unsustainably.

The result of considering the above requirements would be *a diverse and continuous mosaic of natural landscape features distributed across the landscape, interspersed with a diversity of socially and economically productive land uses which support the natural diversity and natural functioning of that landscape.*

**Barriers to ecological sustainability**

***Awareness and appreciation***

In spite of being one of the world's 25 most biologically diverse regions, and hence of great international significance, West Australian's level of appreciation for the flora and fauna of the south west is generally quite low. The focus of many urban dwellers tends to be on the iconic forests of the higher rainfall regions and on other areas of scenic beauty such as the coastal strip and the Stirling Ranges. Few people appreciate the extraordinary values that reside in the vegetation remnants throughout the southwest. For example, shrublands and heathlands, among the most biologically diverse vegetation associations on the planet, are often referred to as "rubbish country" by local land managers.

There is also a widespread lack of appreciation of the conservation values that have been lost as a result of our current land-use practices, and those that will be lost if no action is taken. Inter-generational change results in each new generation considering the environment into which it is born to be "natural" and judge their impacts against new benchmarks, rather than against past conditions. This results in an ongoing cycle of "balanced" reallocation of portions of the conservation estate to other land uses.

Not only is there a lack of appreciation of the impact on biodiversity, but the broader community also has limited understanding of the magnitude and implications of the land-degradation issues confronting Western Australia. If government policy and resource allocation is to match the magnitude of the problem, there must be a significant investment in building community awareness to ensure that government has a strong mandate from the whole community for investing in these issues.

*Recommendation 1:* That the State Government, in partnership with non-government environmental organisations, mount a campaign to promote greater awareness of, and appreciation for the biological and production values of the south-west of WA and the threats to those values.

*Recommendation2:* That the State Government, in partnership with environmental organisations, develop a process for gaining broad community consensus about a new vision for the agricultural regions of WA.

*Recommendation 3:* That decisions about the reallocation of natural ecological systems to other uses be made with reference to the requirements for maintaining ecological integrity, and also with reference to the biological assets at the time of European settlement, rather than against current assets.

***Knowledge constraints***

Our knowledge of the biological diversity of the southwest is relatively poor, in terms of taxonomy, distribution, abundance, ecological function, and vulnerability to human impacts. Recent work by the Department of Conservation and Land Management (CALM) has revealed many previously undescribed species and has found significant numbers of species that are at risk of either local or total extinction. It would be expected that further investigation would yield comparable results throughout the southwest agricultural region.

While there has been much research into understanding the ecological and hydrological processes in the southwest, this research has largely focused on problem definition and description, rather than on determining the type, magnitude and location of the actions that are required to address the problems. Research investment must increasingly be targeted at providing solutions rather than further problem description.

*Recommendation 4*: That Federal and State governments increase the level of investment in biological surveys of the south west, and in research explicitly focused on improving our capacity to manage the remaining biota.

*Recommendation 5*: That a significant component of NRM research funding be directed at adaptive, solution-focused approaches to NRM problems.

***Technical constraints***

The protection of biological diversity in the southwest agricultural regions will require significant management and revegetation. Much of the activity occurring outside of the gazetted reserve system to date has been largely landcare-focused and there have been only limited attempts to recreate functional habitat for species at risk. Re-establishment of habitat at a scale sufficient to prevent on-going species loss will

require a shift in emphasis from tree planting towards a combination of planting, ~~and~~ direct seeding and enhancement techniques such as inoculation, smoke treatment. There is significant scope to improve vegetation management efforts, which requires the support of on-going research and trialing

Sourcing the quantity of native seed required to meet the revegetation needs in rural landscapes is another enormous, yet critical, challenge that requires a collaborative approach if sustainability goals are to be realised.

Our technical capacity to manage weeds is also limited and further investment in more efficient means of weed control is required.

*Recommendation 6*: That government funding be made available to develop and trial improved methods of seed management aimed at improved efficiency in seed collection, production, storage, germination and survival;

*Recommendation 7*: That government funding be made available to develop and trial improved vegetation establishment techniques on lands subject to long-term agricultural land use. Revegetation strategies need to incorporate seed production areas that will ensure the availability of a diverse range of native seed into the futrue.

*Recommendation 8:* That State and Federal Government funds be allocated to ongoing research into effective weed management.

***Market constraints***

Market forces currently provide the strongest disincentive to the adoption of more sustainable land use practices. There are few market mechanisms that reward better land-use practices in the short term. Pressures from financial institutions preclude land managers from adopting practices that yield benefits in the longer term.

The absence of new, commercially viable, perennial enterprises that generate a better short-term return than current practices also presents a major constraint. Ongoing investment in the development of new enterprises is essential. However it is critical to ensure that, if new enterprises are discovered, they do not become a new problem in their own right. Opportunities for rural restructuring occur infrequently and it is critically important not to miss the opportunity that such changes present for achieving multiple benefits. Ensuring that these opportunities are capitalised on will require appropriate policy settings that encourage or enforce the inclusion of multiple outcomes in planning and approval processes. For example, the development of the Blue Gum industry in the higher rainfall areas of the south-west failed to capitalise on the opportunity to manage that industry in a way that delivered multiple outcomes.

*Recommendation 9*: That governments, industry and community jointly develop Environmental Management Systems linked to markets that reward land managers for adopting sustainable land-use practices. Such environmental management systems must include standards for addressing biodiversity conservation.

*Recommendation 10*: That State and Federal government increase the level of investment in developing new enterprises for rural areas based on perennial plant species that can be demonstrated to be environmentally beneficial. Particular emphasis should be placed on the development of mechanisms that encourage the use of native vegetation to offset carbon emissions by the broader community.

*Recommendation 11*: That Government develops policy settings that ensure new market enterprises incorporate social and environmental outcomes into the planning and approval process.

***Capacity constraints***

Currently there is insufficient individual and institutional capacity to bring about the necessary landscape changes at the scale required to achieve sustainable land-use practices. Current models of community participation and voluntary uptake of sustainable practices fail to recognise the limited capacity of communities to understand, appreciate and implement the requirements for sustainable land-use.

*People*

The perception that environmental problems can be addressed by well-meaning volunteers must be countered. While there is an important role for voluntarism, it must not be considered the primary mechanism for change. The environment must be viewed as a legitimate sector in its own right and its management must be achieved through the provision of highly skilled and adequately resourced environmental professionals. The environment is the most complex system on this planet – attempting to manage it and the associated social complexity in anything other than a professional manner is destined to fail. Strong networks of multi-skilled and adequately resourced teams must be provided. These teams can work with local communities (in fact, should be drawn from those communities) to deliver on-ground outcomes, build community capacity, gain and share knowledge, develop career structures and mentoring schemes and ensure ongoing professional development. Anything less than this will result in ongoing high levels of turnover in community support personnel and a constant struggle to address complex issues with insufficient and inexperienced staff.

*Institutions*

Institutional capacity must be developed to support whatever model for rural transition is developed. If, for example, a participatory, consultative community process is to be employed, there must be strong directives to relevant Government

agencies to adopt a culture that supports such a model. If this culture is alien to an agency, there needs to be significant investment in building that agency's capacity to support the preferred model. Both training and resourcing implications will need to be considered.

*Recommendation 12*: That Government policy and practice reflects the professional status of environmental management both in terms of its rhetoric and its resource allocation to capacity building at community and institutional levels.

*Recommendation 13*: That government invests in the development of corporate agency cultures supportive of the policy settings of Government.

**The Role of Community, Business and Government in achieving sustainable lands-use practices**

The multiple dimensions of sustainability (environmental, social and economic) require an integrated, collaborative approach as it is beyond the capacity of any sector, acting in isolation, to achieve the outcomes required for sustainability. Integrated approaches are required in order to deliver integrated outcomes. Each of the sectors have to contribute to a process that takes into account the expectations and aspirations of other players with legitimate interests in sustainability outcomes. Each sector also has an obligation to better understand the outcomes being sought by other sectors. The following sections consider the roles and responsibilities of community, business, and Government sectors.

***The role of community***

The term "community" can be applied to a wide range of social groupings, from a few families living in a small town, right through to the "community of nations" that participate in international affairs. For the purposes of this paper, we use the term "community" to represent those sectors of society that make land-use decisions outside of institutional frameworks of government and corporate business. "Business" is used to refer to corporate enterprises other than the small family business unit and industry groups such as the Grains Corporation.

In this sense, community can be considered to be made up of the local rural community of landowners together with a broader community that encompasses residents of towns and cities whose decisions influence what happens in the rural landscape.

The roles and responsibilities of the local community in achieving sustainable practices include:

- Participation in processes to articulate and agree on what sustainable landscapes would look like;
- Acquiring an appreciation of the multiple dimensions of sustainability and acquisition of a basic knowledge of the key principles that underpin sustainability;
- Participation in local community processes that ensure that individual actions link across boundaries and aggregate to deliver outcomes that cannot be achieved by individuals working in isolation;
- Implementation of land-use practices consistent with sustainability principles;
- Implementation of monitoring activities to assess compliance with sustainability targets;
- Balancing their rights as land owners with their responsibilities as custodians of assets valued by the wider community.

*Recommendation 14*: That Government (Local and State) initiate local consultation processes to encourage communities to explore collective views of what future landscapes would look like and explore mechanisms for achieving the vision.

*Recommendation 15*: That Government initiates a "sustainability network" comprising multi-skilled teams of community support officers to facilitate community engagement in planning, awareness raising, knowledge acquisition and transfer, and technical support.

The roles and responsibilities of the broader community include:
- The preferential purchase of products accredited as being produced by sustainable enterprises;
- The application of political pressure in support of policy settings that encourage sustainable land use

*Recommendation 16*: That Government, industry and relevant NGOs jointly establish accredited environmental management systems linked to market and supported by promotional campaigns.

***The role of the business sector***

Business sector support for sustainability in rural landscapes can come from businesses directly involved in rural enterprises, but may also come from sectors with an interest in corporate citizenship or offsets of environmental impacts elsewhere. Responsibilities of the business sector include:
- Participation in processes to articulate and agree on what sustainable landscapes would look like;
- Ensuring that business strategies take into account social and environmental issues ("triple bottom line" planning);

- Acknowledgment of, and commitment to supporting community attempts to achieve triple bottom line outcomes;
- Ensuring that business decisions appropriately balance short-term economic benefit against long-term and off-site benefits;
- The provision of financial arrangements that do not force land managers to maintain unsustainable activities;

*Recommendation 17*: That Government promote and reward private sector compliance with environmental accreditation systems through direct incentives and through policy settings that generate market advantage for such compliance.

*Recommendation 18*: That the Government and Finance sectors develop arrangements to support land managers through transition processes from current non-sustainable practices to more sustainable patterns of land use.

### *The role of Government*

As this submission is targeted primarily at Government, many of the recommendations presented above indicate potential roles that governments can play in supporting transition to more sustainable land-use practices. More generally, government has three primary policy instruments for encouraging change in land-use practices – suasion, incentive and legislation. It is fair to say that the current mix of these instruments is ineffective. There is little indication that current government policy at Federal or State levels are triggering the amount of change required to drive significant change in land use practices.

#### *Suasion*

Convincing land managers that they should change their management practices will only work to the extent that the promoted changes do not threaten economic viability. As such, it is but one part of a policy package. Suasion to date has largely relied on the delivery of extension services through State Government agencies. In the face of significant market barriers to change, suasion is likely to have limited impact as a change agent in the absence of other strong drivers. This is not to say that suasion is unimportant. In the absence of a convincing argument for change, other incentive or legislative mechanisms risk being viewed cynically by the community either as an opportunity to exploit the government, or heavy-handed government intervention respectively.

For any government investment in suasion to be effective, it is essential that there is adequate investment in acquiring the knowledge required to mount a convincing argument for change, and in the provision of appropriate structures and processes for disseminating this knowledge into the community. These processes must not only inform, but must also build capacity to act.

*Recommendation 19*: That proponents of sustainable land-use invest heavily in targeted education and awareness campaigns and relevant research to promote a collective perception of the need for change.

*Recommendation 20*: That Government initiates a "sustainability network" comprising multi-skilled teams of community support officers to facilitate awareness raising, knowledge acquisition and transfer, community engagement in planning and implementation, and provision of technical support.

*Incentive*

Incentive mechanisms can take the form of direct grants, as is the case for the delivery of Federal funds through the Natural Heritage Trust and as is proposed under the National Action Plan for Salinity and Water Quality, or as indirect incentives such as tax or rate relief.

Careful targeting of direct incentives is necessary to ensure that the outcomes sought by the program match the community's readiness to accept those outcomes, and their capacity to implement the necessary works. If there has been insufficient investment in education and awareness raising (suasion) direct incentive programs risk being viewed as an opportunity to hijack funds into activities for which the funds were not primarily intended.

The cost of providing incentives to all landholders at a level necessary to be a primary driver of change will be prohibitive. Direct incentives should be primarily targeted towards individuals or groups that are willing to undertake activities on their land that directly support regional, state or national priorities. A secondary level of small catalytic grants may be provided more widely provided they are linked to an awareness-raising and capacity-building strategy. These activities should aim to prepare groups with low levels of current capacity for more substantial activities in the future.

The role of tax and rate relief in rural areas is limited owing to the low levels of tax generally paid by rural land managers and the low rate base of rural councils. Rate relief programs through local council are only likely to be effective if the funds to deliver the program come from elsewhere (eg Federal Government). Indirect incentive mechanisms should be widely available to the community providing they are targeted at particular outcomes, such as remnant vegetation protection or biodiversity-focused revegetation that deliver benefits to the wider community, rather than solely to the individual land-holder.

*Recommendation 21*: That direct government incentives for sustainable land-use practices be targeted at two levels: Major grants for priority projects and minor grants attached to awareness-raising and capacity-building programs.

*Recommendation 22:* That indirect incentives be linked to specific activities that clearly protect assets valued by the broader community.

*Legislation*

Many rural landscapes are between 90 and 98 percent cleared of native vegetation. The consequences of this clearing rate are well documented, however, there is still much debate about the right to clear. If we are serious about achieving sustainability we need to strengthen the legislation in relation to the clearing of native vegetation in urban and rural areas.

Legislation has a role to play all levels of government in the quest for sustainability. There are many other stakeholders that are better placed to provide constructive suggestions about the role of legislation. The work of Dr. Steve Dovers at the Centre for Resource and Environmental Studies in Canberra has much to contribute in this area.

**The importance of partnerships**

While there are important roles and responsibilities for community, business and government in contributing to sustainability outcomes, it is critical to acknowledge that each sector is only a contributor. Successful outcomes will only occur if these contributions are brought together in an integrated manner. An important question is "how does this integration occur?"

One option is to identify a lead agency that is given the responsibility to acquire all of the relevant information from various sources, put it together in an integrated way and present it to the community to implement. Such a process is bound to fail, as there will be no shared ownership of the "solution" and no acceptance of recommendations owing to the lack of transparent process.

An alternative approach is to engage stakeholders in a participatory process to build knowledge and generate a common understanding of the problems, and a shared sense of ownership of and commitment to the solutions. Such an approach requires a commitment by all partners to invest in building other partner's understanding of their particular area of expertise, but more importantly, to investing in their own understanding of the needs of other partners and re-interpreting their knowledge in the light of this new knowledge.

Whichever approach is taken, its success will rely upon:

- A shared understanding of the issues;
- A shared responsibility to deal with these issues;
- A shared vision for what the future might look like;
- Identification of the contribution that each party can play;
- A commitment by each party to make that contribution;
- Structures and capacity to ensure that the proposed activities can be implemented.

*Recommendation 22*: That Government makes a signficant investment in the delivery of facilitated participatory partnership approaches to NRM. These processes must be targeted at local communities but must be delivered in a framework that ensures the aggregation of local actions to deliver regional solutions.

**Example of an Attempt to develop sustainable systems: Greening Australia (WA)'s Living Landscapes Program**

Greening Australia (WA) is currently working in partnership with Alcoa World Alumina Australia and a number of wheatbelt communities to develop more sustainable landscape-scale management practices that integrate the conservation of biodiversity into farming systems.

The goal of a *Living Landscapes* program is: "To help community groups develop landscape-scale management practises which protect biological diversity while maintaining economically viable and sustainable land use systems."

*Living Landscapes* embodies the principles of:

- Building long term relationships/partnerships;
- Building upon robust technical under-pinning, eg focal-species conservation planning;
- Building capacity of land managers / community groups to develop and implement increasingly complex plans;
- Building institutional and organisational capacity;
- Linking local actions to regional outcomes;
- Alignment with State and Federal initiatives;
- Building capacity to evolve as a program through time.

*Living Landscapes* facilitates the development of shared visions; invests in community education and awareness raising; builds knowledge and understanding in partnership with the community through participatory action-learning activities; and ensures that communities work with relevant experts to derive their own solutions to local problems, rather than be dependent on "black-box" solutions delivered by technocrats in unintelligible technical reports.

More information about *Living Landscapes* is available from Greening Australia (WA) on request.

**Research and Development Needs**

Greening Australia (WA) is not strictly a R&D organisation, but is keen to ensure that its activities are underpinned by the best available science. As such, we are not putting forward a detailed R&D research program but rather, we wish to articulate some principles that we believe must guide future R&D.

Much of the research undertaken in addressing land degradation and biodiversity loss in WA to date has focussed on problem definition rather then the development of practical solutions. Because of the incredible complexity of the Western Australian landscapes, there are no simple solutions that can be applied uniformly across the landscape. Research and development needs to focus, not on the delivery of generic, unspecific recommendations that can be applied in all circumstances but rather, should focus on the development of processes that enable the development of specific solutions to local problems in a cost effective way.

Because many of the threats to sustainability operate at whole of landscape scales, it is not possible to apply the traditional statistically robust , replicated, manipulated treatments that traditional biophysical scientists recommend. Instead, we must develop new adaptive-learning models based on decision making with partial knowledge linked to ongoing monitoring and evaluation that enables us to increasingly encourage systems to converge towards more sustainable land-use systems.

If the preferred models of achieving more sustainable NRM outcomes include the active engagement of local communities, it is essential to invest in the social research required to identify the most effective social processes for engaging the community in both attitudinal and behavioural change. Increasing investment in the development of community participatory-learning processes is required, and the impact of these types of approaches relative to other instruments for change, such as incentives and legislation, must be further explored.

**Following up on this submission**

If you require any further information or comments from Greening Australia (WA) regarding this submission, please contact Dr Robert Lambeck at:

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