

Sustainable use of natural resources

- 3.1 This chapter considers aspects of the terms of reference relating to mechanisms to promote the sustainable use of natural resources and ecosystem services in a changing climate, and mechanisms to enhance community engagement. In the course of its inquiry, the Committee considered mechanisms as deriving from two complementary approaches: policy and practice; both with biodiversity conservation as core elements.
- 3.2 The **policy approach** outlines the broad measures and mechanisms required to promote the sustainable use of resources and ecosystem services in an uncertain climatic future; an example is the adaptive management approach. The **practice approach** highlights the individual programs and projects required or underway that promote the sustainable use of natural resources and ecosystem services; an example is the stormwater recycling projects supported across Australia. The Committee received a range of evidence demonstrating both approaches, some of which are explored below, and in later chapters.
- 3.3 Many examples of the ‘practice approach’ incorporated community engagement and participation at the same time as promoting the sustainable use of resources. The Committee has observed the extent to which several programs and projects are:
- being undertaken and supported in our local communities
 - protecting our biodiversity
 - alleviating some of the impacts that changing biodiversity due to climate change will have on our human communities
 - preparing human communities for the eventuality that some natural resources will become scarcer in a changing climate.
- 3.4 This chapter canvasses examples of mechanisms relating to locally organised conservation initiatives and government programs and policies. Connectivity conservation initiatives are discussed in chapter four, and

programs utilised by regional natural resource management (NRM) organisations, including under the Federal Government's Caring for our Country initiative, are discussed in detail in chapter six.

Policy approach

- 3.5 Among the evidence received relating to policy approaches promoting the sustainable use of natural resources and ecosystem services, the Committee was pleased to see input from a range of government and non-government agencies, as well as individuals operating in different jurisdictions, a sample of which is canvassed below. The general thread throughout this evidence highlighted the need for policy approaches to be integrated with other policy areas covering, among others, land use planning, adaptive management approaches, and sustainable population growth.

Adaptive management and coordinated planning

- 3.6 The Department of Infrastructure and Transport (DIT) highlighted the sustainability objectives of Australia's National Urban Policy, which include 'managing our resources sustainably by reducing resource consumption and waste and improving water, energy and food security'.¹
- 3.7 DIT also highlighted the importance of integration of NRM planning and land use planning systems, and that 'outer urban and peri urban land management, natural resource management planning and land use planning systems are ill-equipped to address the biodiversity management impacts'.²
- 3.8 The Commonwealth Scientific and Industrial Research Organisation (CSIRO) suggested the need to:
- 'accept and plan for significant and continuous changes in the distribution of species and ecosystems ... '
 - develop adaptive management approaches
 - promote strategic coordination of NRM at regional levels, using tailored approaches in different regions.³
- 3.9 The Australian Coastal Society (ACS) stated that there is an urgent need to define what 'sustainable' and 'sustainability' mean, as well as identify the
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1 Department of Infrastructure and Transport (DIT), *Submission 56*, p. 1.

2 DIT, *Submission 56*, p. 2.

3 The Commonwealth Scientific and Industrial Research Organisation (CSIRO), *Submission 23*, pp. 17-18.

scientific criteria, benchmarks and milestones required to objectively assess the efficacy of land-use strategies, conservation measures or management regimes.⁴ The ACS stated that there is no consideration of sustainability in planning or management in Australia's coastal areas, and also a lack of recognition of the importance of ecosystem services, as no economic value of ecosystems is given in planning or land management frameworks.⁵

- 3.10 The Tom Farrell Institute for the Environment stated the need for government assistance with 'planning, management and research into alternative sources of energy', and the need for the government to support and require 'investment from the coal export sector to stop the degradation of our biodiversity and ensure that ecosystems function to support future human economies not dependent on coal or oil'.⁶
- 3.11 Ms Liz Burton, a planning and environment advocate, suggested in her submission the need to develop a 'national strategy on biodiversity asset conservation in a changing climate'; in order to address the three interconnected factors affecting the natural environment, namely: climate change; the 'structure of the Australian economy and impacts on biodiversity of natural resource commercial exploitation'; and population growth and native vegetation clearance.⁷ Ms Burton also suggested the need to review state planning policies in order to prevent extensive land clearing and fragmentation, improve coordination across the three levels of government, and introduce monitoring and accounting processes of biodiversity loss in relation to biodiversity assets.⁸
- 3.12 The Western Australian Farmers Federation was concerned that the Committee not make recommendations which 'introduce additional restraints on Western Australian farmers who are already significantly restricted in the[ir] land management practices'.⁹ The Committee met with the WA Farmers Federation in Perth and heard about the WA Government's land clearing regulation restrictions placed on WA farmers, and the amount of land clearing allowed for mining and urban use. Further to information provided in the Federation's submission, Mr Alan Hill, Director of Policy, told the Committee that:

... in an environment where we recognise that productive farmland is decreasing for a number of reasons and demand is

4 Australian Coastal Society (ACS), *Submission 61*, p. 8.

5 ACS, *Submission 61*, pp. 7-8.

6 Tom Farrell Institute for the Environment, *Submission 82*, p. 6.

7 Liz Burton, *Submission 85*, pp. 25-26.

8 Liz Burton, *Submission 85*, p. 28.

9 Western Australian Farmers Federation, *Submission 48*, p. [3].

increasing because of our sheer capacity to breed and reproduce, the Australian farmer and particularly the Western Australian farmer needs to function in that market and be more productive than ever before. If we are going to put restrictions on his or her ability to do that, that needs to be recognised and the full cost of that not borne by the landholder simply because they are a landholder.¹⁰

Innovative governance

- 3.13 The International Union for the Conservation of Nature World Commission on Protected Areas (IUCN WCPA) suggested that innovative governance is required, with models combining biodiversity goals with climate mitigation and adaptation goals, supported by all levels of government. The IUCN WCPA suggested that innovative governance requires:
- 'grants to the voluntary sector to maintain a viable NGO [non-government organisation] community'
 - incentive mechanisms and stewardship payments
 - 'rate and taxation incentives and multiple biodiversity and carbon market mechanisms to encourage conservation on private lands'
 - 'investment in large scale biodiverse vegetation restoration and terrestrial carbon plantings'.¹¹
- 3.14 The Western Catchment Management Authority suggested the need to:
- recognise an economic value of environmental services (canvassed in chapter two)
 - support concepts such as Enterprise-based Conservation which establishes 'conservation management as a viable alternative enterprise to grazing' (canvassed in chapter six).¹²
- 3.15 The Department of Sustainability, Environment, Water, Population and Communities (DSEWPAC) highlighted the importance of:
- decision-making managing uncertainties surrounding climate change impacts, risk management, the selection of priority action areas, and how to avoid maladaptation

10 Mr Alan Hill, Director of Policy, Western Australian Farmers Federation, *Transcript of evidence*, 7 November 2011, p. 20.

11 International Union for the Conservation of Nature World Commission on Protected Areas (IUCN WCPA), *Submission 30*, p. 12.

12 Western Catchment Management Authority, *Submission 42*, pp. 3-4.

- further research to expand knowledge of climate change impacts and continually incorporate the knowledge into policy, plans and management practices
 - the National Plan for Environmental Information (discussed in chapter five) in improving the quality and coverage of Australia's environmental information
 - regional NRM plans in delivering integrated approaches to NRM.¹³
- 3.16 The Department of Agriculture, Fisheries and Forestry (DAFF) outlined the Australian Government's commitment to 'increasing the adoption of management practices [by farmers and fishers] that continue to maintain and improve production, while delivering ecosystem services that benefit the whole community.'¹⁴ DAFF stated that the Australian Government was delivering on this objective through grants and capacity building through Caring for our Country and the Carbon Farming Initiative (both discussed below in relation to practice approaches) and other strategies and initiatives.¹⁵

Sustainable populations

- 3.17 As may be anticipated in a consideration of the continued ability to sustainably use natural resources, population growth is a factor. This issue was raised on a few occasions with the Committee, specifically in relation to the effects of predicted population growth on biodiversity.
- 3.18 Mr Sean Sullivan, Acting Deputy Secretary, DSEWPAC stated that Australia's Sustainable Population Strategy, released in May 2011, recognises that our population growth and trends in population growth mean that 'we need to take into account what sustainable population means both now and planning into the future'.¹⁶
- 3.19 Population growth is a major indirect driver on the Australian environment, with population projected to increase to between 30.2 and 35.9 million by 2050.¹⁷ As a key driver impacting on biodiversity, the

13 The Department of Sustainability, Environment, Water, Population and Communities (DSEWPAC), *Submission 66*, p. 11.

14 Department of Agriculture, Fisheries and Forestry (DAFF), *Submission 73*, p. 23.

15 DAFF, *Submission 73*, p. 24.

16 Mr Sean Sullivan, Acting Deputy Secretary, DSEWPAC, *Transcript of evidence*, 12 October 2012, p. 31.

17 State of the Environment 2011 Committee, *Australia State of the Environment 2011: An independent report presented to the Australian Government Minister for Sustainability, Environment, Water, Population and Communities*, DSEWPAC, Canberra, 2011, pp. 45 and 54.

Committee heard that the 'rate of population growth has become considerably faster since the mid-2000s'.¹⁸

... population growth is likely to continue to drive the need for expanded suburban development. The size of this impact will depend on how sensitive the planning has been towards local environmental assets and values, and on the effectiveness of policies to improve the energy efficiency of housing and transport.¹⁹

- 3.20 The Coast and Wetlands Society discussed the large human population, and existence of landscapes interrupted by barriers of infrastructure, urban areas and agricultural and forestry land.²⁰ The Society went on to discuss the impacts of population growth, observing that:

The growth of the human population and the increasing trend to urban living will, even in the absence of climate change, require intensification of agricultur[e] likely to make agricultural land more inhospitable to wildlife. Climate change will force further changes in agricultural practice which may also further impact on the ability of agricultur[e] and wildlife to co-exist.²¹

- 3.21 An example of a policy approach to the sustainable use of natural resources was encountered during the Committee's site inspections in Townsville, and in evidence received during the inquiry, namely the *Great Barrier Reef Marine Park Zoning Plan 2003*, which rezoned the region and resulted in recovery of fish populations.²²

Practice approach

Examples of sustainable resource use

- 3.22 The following programs and projects were encountered during the Committee's site inspections and discussed in its interim reports:
- rainwater harvesting system to supplement the water naturally occurring in the Lake Cave, Margaret River.²³

18 Liz Burton, *Submission 85*, p. 13.

19 State of the Environment 2011 Committee, *Australia State of the Environment 2011: An independent report presented to the Australian Government Minister for Sustainability, Environment, Water, Population and Communities*, DSEWPAC, Canberra, 2011, p. 45.

20 Coast and Wetlands Society Inc., *Submission 51*, p. 2.

21 Coast and Wetlands Society Inc., *Submission 51*, pp. 2-3.

22 House of Representatives Standing Committee on Climate Change, Environment and the Arts (CCEA Committee), *Case studies on biodiversity conservation: volume 2*, November 2012, p. 70.

23 CCEA Committee, *Case studies on biodiversity conservation: volume 1*, May 2012, pp. 6, 13-14.

- Sydney Olympic Park's:
 - ⇒ Brickpit Ring Walk site, incorporating: a protected area for endangered species; natural and constructed wetlands used for biodiversity conservation; and a reservoir to supply non-potable water to Sydney Olympic Park and Newington
 - ⇒ Eastern Water Quality Control Pond to moderate the flow of stormwater run-off and absorb nutrients before the water is filtered and pumped into the brickpit reservoir for distribution.²⁴
 - City of Salisbury's Greenfields Wetlands project forms a significant part of the City's stormwater recycling program – urban stormwater run-off is treated in the constructed wetlands then distributed for non-potable use.²⁵
 - Goolwa Barrages at Hindmarsh Island, South Australia, are intended to help maintain the fresh water of the River Murray and Lakes Alexandrina and Albert, keep water at a sufficient level to permit watering of reclamation areas, and prevent salt water from entering during periods of low river.²⁶
 - Reef HQ Aquarium, Townsville's:
 - ⇒ coral propagation program aimed at reducing collection of coral from the Great Barrier Reef for display and research purposes
 - ⇒ reduced energy consumption, including the use of photovoltaic solar panels expected to reduce annual greenhouse gas emissions
 - ⇒ Reef Guardian program displays.²⁷
- 3.23 The Great Barrier Reef Marine Park Authority's Reef Guardian program addresses the 'additional challenges a changing climate represents for ensuring sustainable use of the Reef's natural resources and ecosystem services'.²⁸
- 3.24 The Committee briefly discussed the Reef Guardian program in its second interim report, and reiterates its suggestion that the Reef Guardian program could be adapted to other areas and ecosystem types, in order to enhance community engagement in sustainable environmental management.

24 CCEA Committee, *Case studies on biodiversity conservation: volume 1*, May 2012, pp. 48-50.

25 CCEA Committee, *Case studies on biodiversity conservation: volume 2*, November 2012, pp. 25, 34-37.

26 CCEA Committee, *Case studies on biodiversity conservation: volume 2*, November 2012, p. 24.

27 CCEA Committee, *Case studies on biodiversity conservation: volume 2*, November 2012, pp. 63-64.

28 Great Barrier Reef Marine Park Authority, *Submission 28*, p. [4].

Government and market-based initiatives

- 3.25 DSEWPAC outlined two programs that can provide benefits for biodiversity:

Under the new Carbon Farming Initiative ... landholders can earn carbon credits by reducing emissions from agriculture and increasing the carbon stored in forests and other ecosystems. These credits can then be sold to companies with obligations under the carbon price mechanism, or to those who wish to voluntarily offset their greenhouse gas emissions. Carbon Farming Initiative projects that provide co-benefits for biodiversity will be able to advertise these credentials in order to seek a premium price for their carbon credits.

The [Biodiversity] fund will support landholders to undertake projects that establish, restore, protect or manage biodiverse carbon stores in targeted areas of the landscape. It is intended that this financial incentive for landholders will enhance the environmental outcomes of carbon farming projects and improve the resilience of Australia's species to the impacts of climate change.²⁹

- 3.26 The Australian Institute for Aboriginal and Torres Strait Islander Studies (AIATSIS) discussed the long-term research project called the West Arnhem Land Fire Abatement Project, accepted under the Carbon Farming Initiative.³⁰ Dr Lisa Strelein, Director of Research, Indigenous Country and Governance at AIATSIS indicated that it is successful in relation to sustainable land management and in the potential for economic opportunities through selling carbon credits.³¹

- 3.27 DAFF outlined the Sustainable Farm Practices initiative of Caring for our Country:

Sustainable Farm Practices is a national priority area within the Caring for our Country initiative. It aims to help improve adoption of practices which will benefit soil condition and ground cover and indirectly, above and below-ground biodiversity. Sustainable

29 DSEWPAC, *Submission 66*, p. 10. The legislation to establish the Carbon Farming Initiative was referred to the Committee for consideration. Further information on the inquiry and the report of the Committee is available at:

<http://www.aph.gov.au/Parliamentary_Business/Committees/House_of_Representatives_Committees?url=ccea/24march2011/report.htm> viewed 22 March 2013.

30 Dr Lisa Strelein, Director of Research, Indigenous Country and Governance, the Australian Institute for Aboriginal and Torres Strait Islander Studies (AIATSIS), *Transcript of evidence*, 20 September 2012, p. 3.

31 Dr Strelein, AIATSIS, *Transcript of evidence*, 20 September 2012, p. 3.

Farm Practices also acknowledges the stewardship relationship that landholders have with biodiversity, by providing support for landscape scale conservation activities including protection of native vegetation and threatened ecological communities and revegetation.

Caring for our Country's long-term (20 year) projection is that Australia's agricultural lands will support and maintain clean water, biodiversity and healthy soils, while continuously improving food and fibre productivity. The agricultural sector will be based on the sustainable management of natural resources and be better able to respond to the threats and opportunities created by changing circumstances, particularly a changing climate.

Under this 20 year projection, one of Caring for our Country's 5 year outcomes is to assist at least 30 per cent of farmers to increase their uptake of sustainable and land management practices that deliver improved ecosystem services.

Through the Caring for our Country initiative, assistance is available to protect biodiversity and national icons through on-ground works and stewardship payments; and to build the capacity of farmers to adopt sustainable agricultural practices through supporting extension activities, information dissemination, and actions to demonstrate and pilot innovative practices on-ground.³²

3.28 DAFF stated that one of the Caring for our Country targets was:

... for an additional 42 000 farmers to have improved their management practices to reduce the risk of soil acidification, soil loss through wind and water erosion and increase the carbon content of soils by 2013.³³

3.29 The Committee learned that 'by 2011-12 Caring for our Country alone had supported over 46 000 farmers to adopt more sustainable practices'.³⁴

32 DAFF, *Submission 73*, p. 18.

33 DAFF, *Submission 73*, p. 24.

34 Mr Ian Thompson, First Assistant Secretary, Sustainable Resource Management, DAFF, *Transcript of evidence*, House Standing Committee on Agriculture, Resources, Fisheries and Forestry's Inquiry into the Department of Agriculture, Fisheries and Forestry annual report 2011-12 and Department of Sustainability, Environment, Water, Population and Communities annual report 2011-12, 13 February 2013, p. 3. The transcript is available at: <http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query%3DId%3A%22committees%2Fcommrep%2F78974eb1-1b55-4363-83cd-b5a7cc9064c0%2F0000%22> viewed 22 March 2013.

- 3.30 The Australian Bureau of Statistics' Agricultural Resource Management Survey demonstrates trends in the adoption of land management practices, and in 2012 it indicated that 'over half of the agricultural businesses with native vegetation, wetlands, rivers and creeks on farm are protecting them for conservation purposes'.³⁵ DAFF stated that this information can be used to understand the effectiveness of Caring for our Country initiatives in changing land management practices.³⁶
- 3.31 The then Queensland Government outlined strategies and actions being used to enhance adaptive capacity including the NatureAssist Program, which supports landholders in managing and protecting biodiversity on land subject to conservation agreements.³⁷
- 3.32 The National Farmers' Federation highlighted a number of market-based approaches to environmental management, including the private sector stewardship initiatives: the Environmental Champions Program and Landcare.³⁸ The Environmental Champions Program is a voluntary program for rice-based systems that aims to recognise growers for their environmental stewardship, achieve on farm benefits and improve the regional landscape.³⁹ According to its website, the Environmental Champions Program also combines regional environmental programs, best management practices and government and irrigation bodies' requirements into one streamlined process.⁴⁰

Conclusions

- 3.33 The Committee understands the importance of sustainably using natural resources and ecosystem services, and the benefits of engaging the community in doing so. The Committee reiterates its support for

35 DAFF, *Submission 73*, p. 24; Australian Government, *Caring for our Country: An outline for the future 2013-2018*, Department of Sustainability, Environment, Water, Population and Communities and Department of Agriculture, Fisheries and Forestry, Canberra, 2012, p. 4.

36 DAFF, *Submission 73*, p. 24.

37 Department of Environment and Resource Management (Queensland Government), *Submission 70*, pp. 5-6. In April 2012, the Department of Environment and Heritage Protection was established, following machinery-of-government changes.

38 National Farmers' Federation, *Submission 43*, p. 14.

39 Environmental Champions Program, 'Overview of Environmental Champions Program - Australia', <http://www.environmentalchampions.rga.org.au/about_ecp/Overview.htm> viewed 26 February 2013.

40 Environmental Champions Program, 'Overview of Environmental Champions Program - Australia', <http://www.environmentalchampions.rga.org.au/about_ecp/Overview.htm> viewed 26 February 2013.

programs that promote the sustainable use of natural resources while also supporting biodiversity conservation.

- 3.34 The Committee was impressed by the numerous projects being undertaken in the community aimed at the sustainable use of natural resources and ecosystem services, as discussed in the Committee's interim reports. The benefits of these projects are important in that they:
- encourage innovative thinking, learning and development of ideas to promote the sustainable use of natural resources
 - markedly improve return on, and encourage recycling and reuse of, ecosystem services
 - positively impact upon biodiversity
 - encourage participation in learning and research on the implications of the unsustainable use of natural resources and the possibilities of changes in availability of some natural resources in future
 - involve communities in rewarding and educational activities.
- 3.35 The Committee understands the importance of government support for such initiatives. The Committee supports policies and market-based approaches to environmental management that promote the sustainable use of natural resources and ecosystem services, as canvassed above. The ability for land managers and community members to participate in, and benefit in economic terms from, conservation activities that positively affect biodiversity is a very important message for governments, particularly the Australian Government, to be promoting. Further, the ability for land managers to learn new management skills and adopt more sustainable practices is also beneficial for the surrounding communities and for maintaining biodiversity. Governments should be constantly improving, developing and extending such initiatives.
- 3.36 The Committee understands that coordinating policy approaches in different areas involves many and varied complexities. The Committee discusses these complexities, relating to natural resource management and governance issues generally in chapters six and seven below.

