



Priorities for Action: Soil Health

2006 – 2009

Minister's Foreword

Victorian food exports more than trebled between 1992 and 2002. In recent years Victoria has maintained its position as Australia's leading food export state, with a contribution of 25 per cent of total Australian food exports in 2005.

The Victorian Government wants to continue to build on this success. Our challenge is to continue strong growth in regional Victoria in the face of new economic, social and environmental challenges.

The Victorian Government, through the Department of Primary Industries (DPI), has established clear objectives to achieve the sustainable development of primary industries in Victoria. These are:

- strong economic growth (including investment and export growth)
- a high quality natural resource base for the long term
- resilient industries and communities
- accountable government.

The Victorian Government is strongly supporting innovation in Victoria's food and agriculture industries to underpin strong rural and regional communities.

DPI's Agriculture Development Division is responsible for investing Government funds in projects that deliver long term growth in the agriculture and food sector.

The Agriculture Development Division invests in policy, research, development and extension programs aimed at technology innovation, industry development and practice change to achieve world's best practice.

This is one in a series of *Priorities for Action* documents that outlines the direction for our research, development and extension over the coming years. Each document focuses on a different industry or issue, and concentrates on how to achieve the long term growth of primary industries for the benefit of all Victorians.

This document sets out the Department's strategic aims for soil health as it relates to agriculture.

DPI will work closely with our stakeholders in industry and rural communities to achieve important results in this area over the next four years.

DPI's *Priorities for Action* position agriculture in Victoria for the future by focusing on the development of new technologies and farming systems that will enable us to use our natural resources more efficiently and sustainably for the benefit of all Victorians.

Bob Cameron

Bob Cameron
Minister for Agriculture



Background

Primary Industries

In 2004–05, the primary industry sector, comprising agriculture, forestry, fishing and mining, contributed 4.6 per cent to Victoria's Gross State Product. These industries produced commodities valued at \$13.5 billion.

In February 2006, regional employment estimates for the primary industries sector and related processing sectors were around 21 per cent of total Victorian regional employment. Agriculture and related processing industries accounted for around 15 per cent of regional employment.

The quality and health of Victoria's soils contributes to the success of primary industries, particularly agriculture and forestry, with an indirect impact on the health of fisheries.

Soil health

Soils, along with sunlight, air and water, provide the basis for all life. Soil provides medium, nutrients, moisture and micro-ecology for plant growth and therefore also animal growth.

All Victorians benefit from the ecosystem services soils provide. These include resource production (food, fibre and timber), waste assimilation (carbon storage, nutrient cycling and decomposition, filter for pollutants), and life support services (habitat for biota, water purification). Factors such as soil structure, acidity, nutrient levels, and diversity of biota contribute to soil function and productivity.



Soil health is gaining a higher profile as we seek to balance efficient, cost-effective production with conservation of natural resources and biological diversity.

The definition is subject to a range of different views, and as a goal society wishes to maintain and improve soil functions and productivity for a range of purposes, across generations. This will underpin the future prosperity of agricultural industries.

Importance of soil health for agriculture

The definition of a healthy soil depends on the purpose for which the soil is to be used. For example, a healthy soil for growing strawberries may need to have different attributes than a healthy soil for producing lentils, pasture or a native woodland.

Most land managers care for their soils in ways that maximise productivity and promote resilient soil condition. They understand that the risks of soil structure decline, soil acidification and soil erosion must be managed to avoid degrading their asset value, losing productive capacity and causing off-site environmental impacts.

Increasingly, land managers consider community expectations when managing their soils, so that they can demonstrate their performance and retain broader community support, or their 'licence to operate'.



Developing DPI Priorities for Soil Health 2006–09

Over many years, DPI research and extension programs have addressed issues such as soil acidification, compaction and erosion. These programs were typically industry-specific, or funded under broad innovation initiatives.

The 2003–04 Victorian State Parliamentary Environment and Natural Resources Committee Inquiry into Soil Acidity provided new impetus to manage soils better in the future — not just for acidity, but for all soil attributes.

In response, DPI explored the opportunities for better soil management in the context of Victorian

primary industries. Drawing on input from various stakeholders through committees and a workshop in 2005, DPI has developed a soil health policy framework (DPI, 2006). Guided by the policy work these *Priorities for Action* were developed in consultation with Catchment Management Authorities, farmers, agribusiness firms, and staff from the Departments of Primary Industries, and Sustainability and Environment.

In 2006/07, DPI will commence a significant integrated investment in soil health relating to agriculture, guided by these *Priorities for Action*.

Developing DPI Priorities for Action: Soil Health

Priority Outcome 1

Agriculture industries using and maintaining healthy soils for sustainable production across generations

It is important to protect and enhance soil health to underpin Victoria's economic development.

Primary producers manage their soil assets to achieve their goals over the short and longer term. This reflects the fitness of soil for their particular purpose and its capability in current and future seasons.

More sustainable soil management requires farmers to assess and manage key risks to soil health over a longer time horizon, with regard for the impacts in future generations. To achieve sustainable soil management, farmers need to be equipped to assess and manage soil health.

Key changes sought:

- Agriculture industries use knowledge to improve long-term sustainable soil health management
- Agriculture industries are confident that their soil health management will continue to support economic prosperity

Priority Actions

- 1 Understand and model soil capability and develop a broad framework for measuring soil health
- 2 Develop a system and tools to assess performance, and monitor and report on various programs for soil health outcomes
- 3 Assess the impact of farm management practices (including novel technologies) on soil health over time and use knowledge of management practices to improve farming systems
- 4 Integrate soil health into current programs (such as TOPCROP, Landcare, education programs, EMS, Farm Monitor, Target 10, Whole Farm Planning, LandLearn and the Victorian Landcare Network) to build community understanding and capacity. (This Action is relevant to Outcomes 1, 2 and 3)

Priority Outcome 2

Soil health management that maintains and enhances ecosystem services

Improving soil health delivers benefits beyond the soil manager, to other producers and the wider community. Yet farmers are not necessarily aware of, nor affected by, these other benefits.

A key step to achieving society's goals for soil health is for all partners in soil health to understand the linkages between soil health at individual sites and a catchment as a whole. In building this understanding, DPI will work with the Department of Sustainability and Environment (DSE), which has broader responsibility for ecosystem services.

This is a precursor to managing change at both farm and catchment scales. This can be achieved by encouraging voluntary soil health measures, as well as providing incentives to change.

Key changes sought:

- Agriculture industries understand and apply best practice soil health management to provide ecosystem services
- Agriculture industries are able to access opportunities (such as incentives) to provide ecosystem services through improved soil health management

Priority Actions

- 1 In partnership with DSE, define and measure ecosystem services provided by soil at local and catchment scales
- 2 Engage and inform communities of interest (including service providers and partners) about ecosystem services provided by soils
- 3 Proactively manage change in agri-ecological landscapes to optimise provision of ecosystem services provided by soils
- 4 Integrate soil health into current programs (such as TOPCROP, Landcare, education programs, EMS, Farm Monitor, Target 10, Whole Farm Planning, LandLearn and the Victorian Landcare Network) to build community understanding and capacity. (This Action is relevant to Outcomes 1, 2 and 3)



Developing DPI Priorities for Action: Soil Health

Priority Outcome 3

Industries and communities that recognise and understand soil health and its contribution to community wellbeing

The health of soil affects the cleanliness of our water, the health of our native flora and fauna, and even the healthiness of our food.

The wider community may have aspirations for the management of Victoria's soil health in agricultural industries, and expectations regarding the ecosystems services provided by soils. These are often expressed through the actions and ideas of leaders in the community, and may be carried by other agencies in government.

Individuals may also wish to express a preference for food produced on healthy soils when buying food. Farmers need to substantiate any claims that food produced from healthy soils is healthier.

Key change sought:

- Industries and communities respond and adapt positively to changes in society's soil health management aspirations

Priority Actions

- 1 Understand community expectations and aspirations for soil health and use this to inform programs
- 2 Explore key relationships between soil health and healthy foods
- 3 Integrate soil health into current programs (such as TOPCROP, Landcare, education programs, EMS, Farm Monitor, Target 10, Whole Farm Planning, LandLearn and the Victorian Landcare Network) to build community understanding and capacity. (This Action is relevant to Outcomes 1, 2 and 3)

Priority Outcome 4

Co-operative community and government partnerships sharing soil health goals

To be accountable, Government needs to make soil health policy and programs clear and accessible. The community can expect the Government to provide regular reports on, and opportunities to participate in, soil health activities.

Soil health data and analysis are required to inform these policies and programs. Data should also be provided to farmers and other land managers in ways that are relevant and accessible.

Key change sought:

- Government and communities are able to access timely and transparent information to aid decision-making

Priority Actions

- 1 Develop information and knowledge exchange systems that support timely and effective policy thinking and decision-making about soil health in DPI and other agencies
- 2 Contribute to the development of a broader Victorian governance framework for soil health that also accounts for a wider land health context



The Pathway to Success – Theory of Action

DPI Strategic Objectives	Strong economic growth	High quality natural resource base for the long term	Resilient industries and communities	Accountable Government
	↑	↑	↑	↑
Soil health priority outcomes	Agriculture industries using and maintaining healthy soils for sustainable production across generations	Soil health management that maintains and enhances ecosystem services	Industries and communities that recognise and understand soil health and its contribution to community wellbeing	Co-operative community and government partnerships sharing soil health goals
	↑	↑	↑	↑
Key changes sought	Agriculture industries use knowledge to improve long-term sustainable soil health management Agriculture industries are confident that their soil health management will continue to support economic prosperity	Agriculture industries understand and apply best practice soil health management to provide ecosystem services Agriculture industries are able to access opportunities (such as incentives) to provide ecosystem services through improved soil health management	Industries and communities respond and adapt positively to changes in society's soil health management aspirations	Government and communities are able to access timely and transparent information to aid decision-making
	↑	↑	↑	↑
Priority Actions	Understand and model soil capability and develop a broad framework for measuring soil health Develop a system and tools to assess performance, and monitor and report on various programs for soil health outcomes Assess the impact of farm management practices (including novel technologies) on soil health over time and use knowledge of management practices to improve farming systems	In partnership with DSE, define and measure ecosystem services provided by soil at local and catchment scales Engage and inform communities of interest (including service providers and partners) about ecosystem services provided by soils Proactively manage change in agri-ecological landscapes to optimise provision of ecosystem services provided by soils	Understand community expectations and aspirations for soil health and use this to inform programs Explore key relationships between soil health and healthy foods	Develop information and knowledge exchange systems that support timely and effective policy thinking and decision-making about soil health in DPI and other agencies Contribute to the development of a broader Victorian governance framework for soil health that also accounts for a wider land health context
	Integrate soil health into current programs (such as Topcrop, Landcare, education programs, EMS, Farm Monitor, Target 10, Whole Farm Planning, Land Learn and the Victorian Landcare Network) to build community understanding and capacity			

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For more information about DPI visit the website at www.dpi.vic.gov.au or call the Customer Service Centre on 136 186.