



Supporting Changes in Farming Practices: Sustainable Irrigation



VICTORIA

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Auditor-General

Supporting Changes in Farming Practices: Sustainable Irrigation

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The Hon. Bruce Atkinson MLC
President
Legislative Council
Parliament House
Melbourne

The Hon. Ken Smith MP
Speaker
Legislative Assembly
Parliament House
Melbourne

Dear Presiding Officers

Under the provisions of section 16AB of the *Audit Act 1994*, I transmit my performance report on *Supporting Changes in Farming Practices: Sustainable Irrigation*.

Yours faithfully



D D R PEARSON
Auditor-General

12 October 2011

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Audit summary

Irrigation is the supply of water to soil, to promote vegetation growth. Farmers irrigate to produce agricultural crops, such as fruit and nut trees, vegetables, grains, berry fruits and grapevines, or to grow pasture for livestock grazing.

An effective and efficient irrigation system depends on the type and methods of irrigation employed, the crop and pasture being irrigated, soil type, and the weather and soil conditions at the time of application. When selecting irrigation systems, the overall quality, quantity and reliability of water supply needs to be considered.

Irrigators are significant water users, using around 75 per cent of all water harvested in Victoria each year—around 2 500 gigalitres (GL). In contrast, Melbourne's annual residential and industrial water use is around 350 GL.

Inefficient irrigation practices can place pressure on scarce water resources. They can also contribute to poor environmental outcomes, such as degraded land and water quality, by increasing soil salinity and nutrient loads and elevating the water table. In addition, climate change science predicts a range of environmental threats to agriculture in Victoria—mainly related to the availability of water.

Adapting to these threats while remaining productive requires sustainable irrigation practices that either use less water overall, or maximise the area of irrigated crop using a set volume of water.

The Sustainable Irrigation Program (SIP), administered by the Department of Sustainability and Environment (DSE), and delivered through partnerships with Catchment Management Authorities (CMA) and the Department of Primary Industries (DPI), aims to improve the sustainability of on-farm irrigation practices across Victoria.

The audit assessed SIP outcomes and the efficiency, effectiveness and economy of programs designed to increase water use efficiency and water savings from on-farm water use.

Conclusion

DSE, CMAs and DPI have effectively planned and implemented a range of programs and projects to increase on-farm water use efficiency and reduce associated environmental impacts. Like any program, however, there are opportunities to become more effective and efficient through improvements to planning and performance reporting.

DSE and CMAs, primarily responsible for sustainable irrigation programs at a statewide and regional level, have undertaken detailed planning for SIP. This includes the development of guiding documents, establishing outcomes, objectives, outputs and performance measures, and a framework to report performance.

This level of planning is positive, although there are opportunities to improve by assessing the relevance of key plans and updating them, and enhancing information about program effectiveness and efficiency by also reporting outcomes achieved.

Data indicates that DSE is, for the most part, meeting program objectives and outcomes. Because DSE lacks comprehensive outcome-focused performance monitoring and reporting, it cannot adequately demonstrate that it is achieving all of the expected long-term benefits of the program. It does, however, have better information on the delivery of outputs at a regional and statewide level.

This absence of meaningful outcome reporting is an ongoing problem across the public sector, and one that needs to be addressed if Parliament and the community can be assured that the expenditure of public finances is achieving the expected benefits.

Findings

Sustainable Irrigation Program planning

Sustainable Irrigation Program Strategic Direction

The overall purpose and direction of SIP is documented in the *SIP Strategic Direction*. This is the overarching program plan that identifies the program's outcomes and objectives, and outlines strategic priorities and actions to achieve these, as well as measures to assess performance. The *SIP Strategic Direction* also outlines review and reporting requirements, and roles and responsibilities of key agencies.

Supporting the strategic direction is a documented program logic—an important tool that guides program planning so there is a focus on achievement of outcomes, as well as outputs.

The *SIP Strategic Direction* and the SIP logic model demonstrate a commitment to effective planning. However, there are limitations with both, that while not critical to the delivery of SIP projects, should be addressed to improve the effectiveness and efficiency of SIP.

Despite the *SIP Strategic Direction* being the main program plan, DSE does not routinely monitor or report on progress against the actions and key performance indicators outlined in the plan. In addition, the program logic is outdated and does not reflect the current strategic direction. It demonstrates the links between management actions and intermediate outcomes and longer-term outcomes as they were before the finalisation of the *SIP Strategic Direction* in 2009.

Outcomes and outputs

Demonstrating whether a program or project is effective depends upon clear and measurable outcomes and objectives. DSE has documented these, in both its *SIP Strategic Direction* and also in the Victorian Investment Framework for Natural Resource Management (VIF), through which DSE funds SIP projects. This has generated nine key performance indicators and four long-term outcomes for SIP. There is a lack of clarity around how the key performance indicators contribute to the longer-term outcomes.

While the outcomes themselves are generally clear, the current suite of supporting performance measures does not enable adequate assessment of either outcome achievement or the effectiveness of the program, as a whole.

The majority of SIP investment occurs through VIF, which determines annually what regional, multi-regional and statewide natural resource management projects DSE will fund. DSE develops an annual SIP Statement of Priorities and proponents develop proposals to address these priorities. This includes demonstrating how the proposed project will achieve the intermediate outcomes and performance descriptors (outputs) related to SIP.

Victorian Investment Framework

While VIF annual performance reports provide DSE with adequate information about whether projects are achieving their intermediate outcomes and outputs, it is unclear whether or how these outcomes and outputs link to the overall SIP objectives and outcomes. Clarifying and strengthening the links would enable clearer demonstration of how the intermediate outcomes and performance descriptors, developed through VIF, contribute to the achievement of SIP outcomes.

Performance monitoring

Performance reporting is key to accountability. It provides information on how effectively and efficiently agencies operate programs, and how economically they use public funds.

DSE has two frameworks to measure and report SIP performance—the *SIP Strategic Direction* and VIF. VIF has a comprehensive suite of performance measures that align with the intermediate outcomes, and provide DSE with adequate information on the achievement of outputs. In contrast, the nine key performance indicators developed for the *SIP Strategic Direction* are not sufficiently developed to enable DSE to assess whether it is achieving SIP outcomes. It is impossible to determine whether DSE had achieved these indicators because they have no corresponding targets.

Regardless, DSE do not routinely monitor or report on the key performance indicators, which means that it is unable to determine whether it is meeting the SIP program's long-term outcomes. This significantly diminishes the usefulness of the *SIP Strategic Direction* as the main program plan.

DSE does monitor and report annually on the performance of CMAs in achieving SIP outputs under VIF. It also consolidates this information into a SIP annual report, and this demonstrates a commitment to accountability and transparency. However, DSE could enhance the reporting by including more comprehensive data on achievement against intermediate and long-term outcomes, rather than primarily focusing on the VIF outputs to better demonstrate achievement of outcomes. Annual statewide reports include program highlights and details of output achievement, broadly covering key SIP outcome areas.

Sustainable Irrigation Program implementation

VIF is the key mechanism for delivering on-farm sustainable irrigation projects. In 2009–10, the most recent available data, VIF funded 10 SIP projects in the central and north-west regions, in addition to statewide research and development projects.

SIP project funding has been allocated and expended as intended. SIP projects have generally been implemented as intended, and for the three audited CMAs the majority of SIP projects have met (satisfactory performance) or exceeded the VIF intermediate outcome and output targets. For 2008–09, this was 91 per cent, and for 2009–10 it was 82 per cent.

During the period from 2003–04 to 2007–08, SIP regional investment was made through the Regional Catchment Investment Plan process—the precursor to VIF. While CMA performance reports from this period are of variable quality, reports show around 63 per cent of targets being met or exceeded during this period. The quality and consistency of reporting has improved under VIF and the most recent VIF performance reports provide more comprehensive and consistent information across CMAs on performance against targets.

Key achievements across SIP related to increased water use efficiency include:

- the development of whole farm plans
- the installation of irrigation tail water re-use systems and irrigation system upgrades
- the achievement of on-farm water savings of 7 200, 6 700 and 6 800 megalitres per year for the period 2007–08 to 2009–10.

Inter-agency arrangements

Effective arrangements exist between DSE, DPI and CMAs in the delivery of SIP. The *SIP Strategic Direction* and service level agreements clearly describe roles and responsibilities, which are well understood. Activities are undertaken in accordance with agreed roles and responsibilities.

Recommendations

Number	Recommendation	Page
1.	<p>The Department of Sustainability and Environment should:</p> <ul style="list-style-type: none"> • update the <i>Sustainable Irrigation Program Strategic Direction</i> and Sustainable Irrigation Program program logic so that they align with each other, clearly define the intent of outcomes and demonstrate the links between outputs, intermediate outcomes and longer-term outcomes • develop relevant and appropriate targets for performance indicators in the <i>Sustainable Irrigation Program Strategic Direction</i> to enable the assessment of outcome achievement • improve its program reporting by including information on the achievement of outcomes in addition to output reporting. 	13
2.	<p>The Department of Sustainability and Environment, Department of Primary Industries and Catchment Management Authorities should address the inefficiencies of the current reporting processes to reduce duplication and improve timeliness.</p>	13

Submissions and comments received

In addition to progressive engagement during the course of the audit, in accordance with section 16(3) of the *Audit Act 1994* a copy of this report was provided to the Department of Sustainability and Environment, the Department of Primary Industries, Goulburn Broken Catchment Management Authority, North Central Catchment Management Authority and Mallee Catchment Management Authority with a request for submissions or comments.

Agency views have been considered in reaching our audit conclusions and are represented to the extent relevant and warranted in preparing this report. Their full section 16(3) submissions and comments, however, are included in Appendix B.

1 Background

1.1 Irrigation

Irrigation is the supply of water to soil, to promote vegetation growth. Farmers irrigate to produce agricultural crops, such as fruit and nut trees, vegetables, grains, berry fruits and grapevines, or to grow pasture for livestock grazing.

There are many different ways that irrigators can apply water to the soil. These include pressurised and non-pressurised (gravity flow) systems, and surface or subsurface application. Figure 1A shows the main irrigation methods.

Figure 1A
Main on-farm irrigation systems used in Victoria

Irrigation system	Description	Irrigation use
Lateral move/centre pivot pressurised	A mechanical irrigation device consisting of a single raised pipeline, which supplies water to sprinklers regularly spaced along the pipe. The pipeline may rotate around a central pivot point (centre pivot) or move laterally across the paddock (lateral move). Can use either high-pressure or low-pressure sprinklers.	Best suited to large areas of high value crops with high water requirements. This type of system provides constant efficient irrigation with minimal labour on rolling terrain, if property design allows.
Drip pressurised	A small diameter pipe with holes along its length or a small diameter pipe with permeable walls, which supplies water to plants at a low flow rate via drippers.	Mainly used on high value permanent plantings such as grape vines and orchards.
Sub-surface drip pressurised	Permanently or temporarily buried pipe or tape with perforations along its length, which supplies water to, or below, the root zone of the crop.	Mainly used for crops such as lucerne, maize, mung beans and sorghum.
Flood irrigation gravity flow	The process of irrigating by flooding an area confined by Border Check Banks.	Performance highly variable depending on site set up and soil type, and influenced by irrigation management. Suited to areas of even slope, for crops such as pasture for grazing.
Furrow gravity flow	The supply of water to the plants via a narrow earthen channel.	Performance highly variable depending on the site set up and influenced by irrigation management. Can have problems with erosion. Irrigation performance may improve using a surge flow rather than constant flow irrigation. Normally used in market gardens, orchards and vineyards.

Source: Victorian Auditor-General's Office based on information from the Department of Primary Industries and the Department of Sustainability and Environment.

An effective and efficient irrigation system depends on the type and method of irrigation used, the crop and pasture being irrigated, soil type, and the weather and soil conditions at the time of application. When selecting irrigation systems, the overall quality, quantity and reliability of water supply needs to be considered.

1.1.1 Economic benefits of irrigation

Most of Victoria's irrigation occurs in the Goulburn Murray region in central Victoria and the Lower Murray Darling region in north-west Victoria, encompassing around 845 600 hectares, or 8 456 square kilometres, of land across the Mallee, North Central and Goulburn Broken Catchments. The annual value of irrigated agricultural production in Victoria is around \$3.3 billion—around 32 per cent of the total value of agricultural production. Victoria is Australia's largest exporter of agricultural goods, accounting for around 27 per cent of its food and fibre exports. In addition, Victoria's agricultural industries employ around 67 000 people directly, and a further 84 000 in related manufacturing and processing industries.

1.1.2 Environmental impacts of irrigation

Irrigators are significant water users, using around 75 per cent of all water harvested in Victoria each year—around 2 500 gigalitres (GL). In contrast, Melbourne's annual residential and industrial water use is around 350 GL.

Inefficient irrigation practices can place additional pressure on scarce water resources. They may also contribute to poor environmental outcomes, such as degraded land and water quality due to salinity, increased nutrient loads and an elevated water table.

In addition, climate change science predicts a range of environmental threats to agriculture in Victoria—mainly related to the availability of water. These threats include reduced rainfall, increased evaporation and dryer soils, which may reduce the quality and quantity of agricultural crops and livestock.

Adapting to these threats while remaining productive requires sustainable irrigation practices that either use less water overall, or maximise the area of irrigated crop using a set volume of water.

1.2 Sustainable irrigation

Sustainable irrigation aims to increase productivity while reducing any environmental or third party impact.

Water use efficiency (WUE) is a key concept related to sustainable irrigation. On-farm WUE aims to maximise the use of available water resources by applying water efficiently at a time, and volume, that meets the needs of crops so that production levels are sustainable in the long term.

Farm WUE is influenced by factors such as the type of irrigation system, drainage and irrigation tailwater reuse systems (reuse systems), by management practices such as the timing and management of surface irrigation flows, crop and soil types and by the quality of water used for irrigation. WUE can vary greatly depending on these factors, and typically ranges from 60 to 90 per cent. Higher efficiency means that less water is lost to deep drainage, leakage, evaporation or surface runoff, which can reduce negative environmental impacts such as salinity, water-logging and nutrient impacts on water quality.

The Sustainable Irrigation Program (SIP) is the main Victorian government program designed to improve, among other things, the sustainability of on-farm irrigation practices across Victoria.

The overall objective of SIP is for irrigation to be increasingly productive, with lower environmental impact. SIP focuses on managing irrigation farm water and catchment drainage to deliver salinity mitigation, improved water quality, farm water savings and productivity benefits. This audit focused on WUE and farm water savings. A range of activities are undertaken to achieve WUE and farm water savings outcomes including:

- **whole farm planning**—involves mapping the existing features of a farm and detailing any improvements to irrigation layout and other features of the property, with a focus on natural resource management. The resulting map shows the recommended layout of a property based on farm characteristics and best management practices for the region and industry. In irrigation regions, the generic term ‘whole farm planning’ may be used to refer to property plans, irrigation drainage plans and environment management plans. Whole farm plans are usually a precursor to receiving government financial assistance for on-farm works
- **modernisation of on-farm irrigation systems**—activities include the installation of reuse systems to capture irrigation water on-farm for reuse and system upgrades—for example, upgrading from furrow or overhead irrigation systems to dripper or fast flood irrigation systems, or undertaking soil moisture monitoring to improve irrigation scheduling
- **extension and training**—activities aimed at encouraging the adoption of a range of irrigation modernisation technologies and best practice management
- **research and development**—a range of activities are undertaken including research into biophysical processes, and technical and social research, to inform irrigation policy development and program implementation.

SIP is administered by the Department of Sustainability and Environment (DSE), and delivered through partnerships with Catchment Management Authorities (CMA) and the Department of Primary Industries (DPI).

Department of Sustainability and Environment

DSE is responsible for SIP policy and administration, and for developing guidelines for CMA regional planning activities, including the preparation of Land and Water Management Plans (LWMP). It administers around \$14 million annually of Victorian Government investment in farm and catchment irrigation programs, projects, and research and development. DSE is also responsible for managing and reporting against Victoria's obligations under the *Murray Darling Basin Agreement*, including the *Basin Salinity Management Strategy*.

Catchment Management Authorities

CMAs develop and implement Regional Catchment Strategies (RCS) and sub-strategies, including LWMPs. CMAs establish community engagement committees, which include community members, to support the implementation of the priorities in the RCS, sub-strategies and funded projects, and provide representative feedback on the local communities' views. CMAs are also responsible for the preparation of regional investment plans under the Victorian Investment Framework for Natural Resource Management (VIF), and for coordinating and reporting on SIP related activities to DSE.

Department of Primary Industries

DPI, through Farm Services Victoria, is responsible for delivering a range of sustainable irrigation technical and extension support services to irrigators. DPI staff deliver farm and catchment programs under the CMA's LWMPs. DPI also delivers sustainable agricultural services through programs aligned with key industry sectors, such as dairy farmers and horticulture producers, with the aim of delivering more targeted, accessible and relevant services to farmers. Farm Services Victoria and DPI's Future Farming Systems Research division also undertake SIP-related research and development.

1.2.1 Irrigation policy

Two plans of the previous government underpin SIP and other work to improve irrigation practices and reduce their impact on the environment: *Growing Victoria Together* and *Our Water Our Future*.

Growing Victoria Together, 2001

Growing Victoria Together was a 10-year strategy that outlined priorities to build a better society, including a commitment to the efficient use of natural resources.

Environmental outcomes included:

- **protecting the environment for future generations**—the condition of our land will improve as the impact of salinity and soil degradation is reduced
- **efficient use of natural resources**—more efficient use of water in agriculture.

Our Water Our Future, 2004

Our Water Our Future was a water management action plan for Victoria. It included several outcomes related to the 'smarter use of irrigation water' including:

- a confident, profitable and adaptable irrigation sector that generates wealth for regional communities and Victoria
- an increase in the efficiency of irrigation systems across the state of 25 per cent by 2020
- lower salinity and nutrient side-effects of irrigation.

Our Water Our Future also sought to achieve 'a profitable and resilient irrigation sector', by aligning system modernisation with on-farm, natural resource management and environmental programs.

1.2.2 Irrigation legislation

The main legislation relevant to SIP planning activities is the *Catchment and Land Protection Act 1994* (the CaLP Act) of Victoria. The CaLP Act requires CMAs to prepare a RCS for the region and to coordinate and monitor its implementation. This includes the development and implementation of LWMPs, which guide SIP implementation at a regional level.

Under the CaLP Act Statement of Obligations (June 2007), CMAs are required to develop, coordinate, monitor and report on the progress of implementation of regional salinity management plans. Further, CMAs in the Murray Darling Basin are required to report annually on the allocation and uptake of salt disposal entitlements (salinity credits and debits).

The *Water Act 1989* provides a licensing regime for the irrigated water use established under sections 64 (Water Use Licences) and 51 (Take and Use Licences). The Water Act Statement of Obligations (October 2006) requires CMAs to prepare regionally specific irrigation development guidelines.

1.3 Audit objective and scope

The audit objective was to assess SIP outcomes and the efficiency, effectiveness and economy of programs designed to increase WUE and water savings from on-farm water use.

The audit examined the activities supporting the SIP outcome of increasing WUE and water savings from on-farm water use, and the achievement of other SIP outcomes.

1.3.1 Audit approach

The audit examined whether:

- SIP programs were soundly based and have clearly described objectives, outputs, outcomes and performance targets
- SIP programs have been implemented effectively and efficiently, and have achieved their objectives, outputs, outcomes and performance targets
- there are effective inter-agency arrangements for the planning, implementation, monitoring, reporting and evaluation of SIP programs.

The audit was performed in accordance with the Australian Auditing and Assurance Standards. The total cost of this audit was \$300 000.

2 Sustainable Irrigation Program planning

At a glance

Background

To be effective, programs and projects need clear and measurable outputs, objectives, outcomes and targets. These should be underpinned by clear program logic, reliable data, and be supported by monitoring, reporting and evaluation to demonstrate effectiveness.

Conclusion

Detailed planning for the Sustainable Irrigation Program (SIP) has been undertaken. This includes the development of guiding documents, establishing outcomes, objectives, outputs and performance measures, and a framework to report performance. While this level of planning is positive, there are opportunities to improve some elements, for example, by assessing the relevance of and updating key plans. As well, reporting on outcomes would enhance information about program effectiveness and efficiency.

Findings

- Detailed planning was undertaken for SIP, although there are opportunities to improve underpinning program documentation such as the *SIP Strategic Direction* and program logic.
- SIP has clear outcomes, although associated performance indicators do not adequately inform about the achievement of these.
- SIP reporting systems and processes focus primarily on output achievement, and could be enhanced by including data and information on the achievement of SIP outcomes.

Recommendations

The Department of Sustainability and Environment should:

- update the *SIP Strategic Direction* and SIP program logic so that they align with each other, clearly define the intent of outcomes and demonstrate the links between outputs, intermediate outcomes and longer-term outcomes
- develop relevant and appropriate targets for performance indicators in the *SIP Strategic Direction* to enable the assessment of outcome achievement
- improve its program reporting by including information on the achievement of outcomes in addition to output reporting.

2.1 Introduction

Improving the efficiency of on-farm irrigation is essential for the sustainability of irrigated agriculture and the reduction of consequent environmental impacts. The government's water corporations can directly control the efficiency of irrigation channels and infrastructure that supply water to farms. The government indirectly influences irrigation efficiency on farms primarily through activities aimed at voluntary landholder practice change and other activities such as licensing for irrigated water use under the *Water Act 1989*.

The indirect influence occurs primarily through programs—the collection of projects that focus on delivering outcomes, and the projects themselves, which focus on delivering outputs. To be effective, programs and projects need clear and measurable outputs, objectives, outcomes and targets. These should be underpinned by clear program logic, reliable data, and be supported by monitoring, reporting and evaluation to demonstrate effectiveness.

The Sustainable Irrigation Program (SIP) is the key Victorian Government program designed to improve on-farm irrigation efficiency, along with other activities such as the management of catchment drainage.

2.2 Conclusion

The Department of Sustainability and Environment (DSE) and Catchment Management Authorities (CMA), primarily responsible for sustainable irrigation programs at a statewide and regional level, have undertaken detailed planning for SIP. This includes the development of guiding documents, establishing outcomes, objectives, outputs and performance measures, and a framework to report performance. While this level of planning is positive, and SIP is soundly based, there are opportunities to improve planning, by assessing the relevance of key plans and updating them, and enhancing information about program effectiveness and efficiency by also reporting on outcomes.

2.3 Sustainable Irrigation Program strategic direction and program logic

The overall purpose and direction of SIP is documented in the *SIP Strategic Direction*. This is the overarching program plan that identifies the program's outcomes and objectives, and outlines strategic priorities and actions to achieve these, and measures to assess performance. The *SIP Strategic Direction* also outlines review and reporting requirements, and the roles and responsibilities of key agencies.

Supporting the strategic direction is a documented program logic. Sound program logic clearly articulates the links between a vision, outcomes, projects and activities. It is an important tool that guides program planning so there is a focus on achievement of outcomes, as well as outputs.

The *SIP Strategic Direction* and the SIP program logic model demonstrate a commitment to effective planning. However, there are limitations with both that, while not critical to the delivery of SIP projects, should be addressed to improve the effectiveness and efficiency of SIP.

Despite the *SIP Strategic Direction* being the main program plan, DSE does not routinely monitor or report on progress against the actions and key performance indicators outlined in the plan. In addition, the program logic is out-dated and does not reflect the current strategic direction. It demonstrates the links between management actions, and intermediate and longer-term outcomes, as they were before the finalisation of the *SIP Strategic Direction* in 2009.

DSE needs to align the *SIP Strategic Direction* and the program logic to reflect recent changes to the program structure. Together, these documents should provide program managers and project implementers with adequate information on the program direction and how investment links with outputs, to achieve program outcomes and policy objectives.

DSE has commenced a monitoring, evaluation, reporting and improvement project that it expects will address the inconsistency between these two program plans.

2.4 Sustainable Irrigation Program outcomes and objectives

Demonstrating whether a program or project is effective depends upon clear and measurable outcomes and objectives. DSE has documented these, in both its *SIP Strategic Direction* and also in the Victorian Investment Framework for Natural Resource Management (VIF), through which DSE funds SIP projects. This has generated nine key performance indicators and four long-term outcomes for SIP. There is a lack of clarity around how the key performance indicators contribute to the longer-term outcomes.

While the outcomes themselves are generally clear, the current suite of supporting performance measures does not enable adequate assessment of either outcome achievement or the effectiveness of the program, as a whole.

2.4.1 *Sustainable Irrigation Program Strategic Direction* outcomes and objectives

There are four outcomes and five objectives for SIP, shown in Figure 2A, which align with the previous government's *Growing Victoria Together* and *Our Water Our Future* policies. Figure 2A also shows the nine key performance indicators that DSE developed to assess the achievement of the objectives and outcomes.

Figure 2A
Sustainable Irrigation Program outcomes and objectives

Outcomes	Objectives	Key performance indicators
Increased farm water use efficiency and water savings for productive, social and environment benefits	Increase the capacity of the irrigation sector to respond to a variable water future	Accelerated whole farm planning in modernised areas
Lower salinity and nutrient side-effects of irrigation	Guide irrigation rationalisation and consolidation in a water scarce future to maximise the productive, social and environmental benefits of irrigation water use	Increase on-farm water use efficiency
Enhanced biodiversity values in irrigation regions	Facilitate modernisation of the irrigation sector by integrating farm and irrigation programs with delivery system modernisation	Maintained compliance with <i>Basin Salinity Management Strategy</i> obligations in northern regions
A profitable, resilient and adaptable irrigation sector that generates wealth for regional communities and Victoria	Reduce the adverse environmental impacts of irrigation	Maintained or improved farm productivity
	Deliver against Victoria's relevant national, state and intergovernmental obligations	Acceptance of Land and Water Management Plans by local communities, local agencies and DSE Consistent use of Land and Water Management Plans to guide investment Improve water quality (reduced sediments, salt and nutrients) to receiving waters Available Salt Disposal Entitlement credits for future needs Reduced risk of stranded irrigation assets

Note: The outcomes, objectives and performance measures presented above are not intended to show alignment or links. While they generally align, the actual alignments are complex and have not been represented here.

Source: Victorian Auditor-General's Office.

The design of SIP is relatively complex with the program not only having specific outcomes and objectives but also the strategic priorities, actions and related key performance indicators. The key performance indicators shown in Figure 2A relate to four strategic priorities and associated actions outlined in the *SIP Strategic Direction*, which are designed to achieve SIP objectives and meet program outcomes.

The SIP outcomes are generally clear and, at a high level, the performance indicators align with them. In terms of clarity, the exception is the outcome related to ‘a profitable, resilient and adaptable irrigation sector’. There are no performance indicators related to this outcome, and a lack of clarity around its definition and how it is measured provides limited assurance that DSE will be able to determine whether it is being achieved.

DSE has undertaken work to better clarify this outcome, including:

- better understanding irrigation farm land use change due to drought and lower water allocations
- planning a project proposed for 2011–12 to map farms in the Goulburn Murray Irrigation District according to their capacity to absorb, or adapt to, greater variability in critical inputs, such as water supply.

There remains a need for DSE to develop measures to inform itself about whether the outcome is being achieved and the activities contributing to the outcome are effective and efficient.

2.4.2 Victorian Investment Framework outcomes and outputs

In addition to the long-term outcomes in the *SIP Strategic Direction*, VIF also includes a further nine intermediate outcomes and 24 performance measures related to SIP (see Appendix A).

The majority of SIP investment occurs through VIF, which determines annually what regional, multi-regional and statewide natural resource management projects DSE will fund. DSE develops an annual SIP Statement of Priorities and proponents develop proposals to address these priorities. This includes demonstrating how the proposed project will achieve the intermediate outcomes and performance descriptors (outputs) related to SIP.

While VIF annual performance reports provide DSE with adequate information about whether projects are achieving their intermediate outcomes and outputs, it is unclear from program documentation whether or how these outcomes and outputs link to the overall SIP objectives and outcomes. Clarifying and strengthening the links would enable clearer demonstration of how the intermediate outcomes and performance descriptors developed through VIF contribute to the achievement of SIP outcomes.

2.4.3 Performance measures and performance reporting

Performance reporting is key to accountability, providing information on how effectively and efficiently agencies operate programs, and how economically they use public funds.

Underpinning performance reporting are performance measures, which demonstrate whether agencies are meeting their objectives. Performance measures should link to agency objectives and government outcomes, and should provide adequate information on whether these objectives and outcomes are being met.

DSE has two frameworks to measure and report SIP performance—the *SIP Strategic Direction* and VIF. VIF has a comprehensive suite of performance measures that align with the intermediate outcomes, and provide DSE with adequate information on the achievement of outputs.

In contrast, the nine key performance indicators developed for the *SIP Strategic Direction* are not sufficiently developed to enable DSE to assess whether it is achieving SIP outcomes. It is impossible to determine whether DSE had achieved these indicators, as listed in Figure 2A, because they have no corresponding targets.

Regardless, DSE does not routinely monitor or report on the key performance indicators, which means that it is unable to determine whether it is meeting SIP's long-term outcomes. This significantly diminishes the usefulness of the *SIP Strategic Direction* as the main program plan.

Despite this, DSE reports on progress relating to two SIP outcomes—water use efficiency and water savings and lower salinity and nutrient side effects of irrigation—through previous *Growing Victoria Together* and the *Basin Salinity Management Strategy* reporting frameworks.

DSE does monitor and report annually on the performance of CMAs in achieving SIP outputs under VIF. It also consolidates this information into a SIP annual report.

DSE's SIP reporting demonstrates a commitment to accountability and transparency. However, it could enhance its reporting by including more comprehensive data on achievement against intermediate and long-term outcomes, rather than primarily focusing on the VIF outputs. While DSE advised that its annual statewide reports include intermediate outcome reporting, this is not supported by the available evidence. Rather, the statewide reports include 'program highlights', which detail output achievement, broadly covering key SIP outcome areas.

DSE advised that these reports are not intended to show longer-term outcome achievements and that a three yearly SIP Achievements Report, due at the end of 2011, will include outcome reporting.

While not critical to the overall effectiveness of the performance monitoring and reporting, several inefficiencies exist with the reporting systems and processes at the regional and statewide level. These inefficiencies, known for some time, make reporting unnecessarily time consuming and resource intensive. Issues include:

- The VIF process only allows reporting against funding spent in the financial year it is allocated. This can create problems for incentive programs where funds are committed in one year and spent in the next financial year, which does occur. In these instances DSE has had to request additional reports from CMAs for these activities.
- Where there is more than one investor for SIP projects, CMAs and DPI are required to report to multiple investors who may have differing reporting requirements. This has resulted in VIF reporting requirements not being met where they differ from those of external investors.
- In one of the three audited CMAs, the VIF intermediate outcomes and performance descriptors do not adequately cover all internal reporting requirements. This results in the CMA undertaking additional internal reporting against a number of outputs that are non-VIF-endorsed performance descriptors.

Recommendations

1. The Department of Sustainability and Environment should:
 - update the *Sustainable Irrigation Program Strategic Direction* and Sustainable Irrigation Program program logic so that they align with each other, clearly define the intent of outcomes and demonstrate the links between outputs, intermediate outcomes and longer-term outcomes
 - develop relevant and appropriate targets for performance indicators in the *Sustainable Irrigation Program Strategic Direction* to enable the assessment of outcome achievement
 - improve its program reporting by including information on the achievement of outcomes in addition to output reporting.
 2. The Department of Sustainability and Environment, Department of Primary Industries and Catchment Management Authorities should address the inefficiencies of the current reporting processes to reduce duplication and improve timeliness.
-

3 Sustainable Irrigation Program implementation

At a glance

Background

The Sustainable Irrigation Program (SIP) is the key program designed to improve on-farm irrigation efficiency. Through the delivery of both statewide projects and projects in central and north-west Victoria, SIP aims to increase farm water use efficiency and water savings, improve environmental outcomes associated with irrigation and ultimately create a profitable, resilient and adaptable irrigation sector.

Conclusion

Catchment Management Authorities (CMA) and the Department of Primary Industries (DPI) have been effective in delivering sustainable irrigation activities and projects, and generally achieving outputs. While the output data indicates that SIP is meeting its program objectives and producing desired outcomes, the Department of Sustainability and Environment (DSE) cannot adequately demonstrate the achievement of all outcomes due to the lack of comprehensive outcome focused reporting.

Notwithstanding, SIP is a soundly based and generally well administered program with effective inter-agency arrangements.

Findings

- Service level agreements that are developed annually between CMAs and DPI for SIP projects funded through the Victorian Investment Framework for Natural Resource Management (VIF) enable effective project implementation and monitoring.
- SIP projects have generally been implemented as intended and for the three audited CMAs, the majority of SIP projects have achieved satisfactory performance or exceeded the VIF intermediate outcome and output targets. For 2008–09 this was 91 per cent, and for 2009–10 it was 82 per cent. Around 63 per cent of targets were met or exceeded between 2003–04 and 2007–08.
- Key achievements across SIP, related to increased water use efficiency, include the development of whole farm plans, the installation of irrigation re-use systems and irrigation system upgrades and the achievement of on-farm water savings of 7 200, 6 700 and 6 800 megalitres each year from 2007–08 to 2009–10.

3.1 Introduction

The Sustainable Irrigation Program (SIP) is the key Victorian Government program designed to improve on-farm irrigation efficiency. Through the delivery of both statewide projects and projects in central and north west Victoria, SIP aims to increase farm water use efficiency and water savings, improve environmental outcomes associated with irrigation and ultimately create a profitable, resilient and adaptable irrigation sector.

3.2 Conclusion

Catchment Management Authorities (CMA) and the Department of Primary Industries (DPI) have been effective in delivering sustainable irrigation activities and projects, and generally achieving outputs. However, the achievement of program objectives and outcomes is less certain.

Data indicates that the Department of Sustainability and Environment (DSE) is, for the most part, meeting program objectives and outcomes. Because of a lack of comprehensive SIP specific outcome-focused performance monitoring and reporting, it cannot adequately demonstrate that it is achieving all of the expected long-term benefits of the program. It does, however, have better information on the delivery of outputs at a regional and statewide level. Notwithstanding, SIP is a generally well administered program with effective inter-agency arrangements, although there are opportunities for improvement in some areas.

3.3 Sustainable Irrigation Program projects

The key mechanism for delivering on-farm sustainable irrigation projects is the Victorian Investment Framework for Natural Resource Management (VIF). In 2009–10, the most recent available data, VIF funded 10 projects in the central and north-west regions to achieve the SIP outcomes, in addition to statewide research and development projects. Figure 3A shows these projects and associated funding of around \$11.1 million.

Figure 3A
Victorian Investment Framework funded projects, 2009–10

Delivery organisation	Project	Project description	Funding (\$)
Goulburn Broken CMA	Farm and Environment Project	Implements preparation of whole farm plans, installation of drainage reuse systems, installation of automatic irrigation systems and Local Area Plan projects.	2 460 818
	Catchment Planning	Implements improved water quality and soil health, habitat for improved biodiversity, landcare support and pasture cropping development.	100 000
	Sustainable Dryland Landscapes	Implements whole farm plans, improved water quality and soil health. Includes remnant vegetation fencing and soil erosion treatment.	92 000
	Sustainable Irrigation—Surface and Sub-Surface Drainage Infrastructure	Implements a range of surface and sub-surface water management works such as installation of surface drains and farm groundwater pumps, as well as coordination of some water quality activities and environmental assessments.	3 523 000
North Central CMA	Healthy Productive Irrigated Landscapes	Implements works for improved water use efficiency and water savings, water quality and soil health. Includes incentive works approvals for whole farm plans, saline soil rehabilitation and re-use systems.	1 331 000
	DPI Direct Sustainable Irrigation	Implements whole farm plans increased or maintained capacity of individuals and Land Managers to manage natural resources sustainably.	1 282 280
	Reporting and Accounting for Salinity	Implements works for improved water quality, increased or maintained institutional capacity of regional agencies to implement the regional catchment strategy. Contributes to <i>Basin Salinity Management Strategy</i> reporting.	220 000
Mallee CMA	Preparation for Water Delivery Modernisation	Supports Resilient Communities, healthy environments program in the Mallee Land and Water Management Plan encouraging irrigation modernisation in the region.	390 000
	Adoption of Best Practice Management	Implements whole farm plans, water savings and improved water quality works targeting training in best practice in irrigation.	498 000
	Regional Sustainability—Salinity Management	Implements salinity management for improved water quality.	100 000
DPI	Research and Development	Research and development projects to benefit management of land and water. Eight research activities were undertaken, for example, <i>Benchmarking regional farm irrigation performance in the GMID</i> and <i>Understanding and locating landholder behaviour in the changing irrigation landscape</i> .	1 111 125

Source: Victorian Auditor-General's Office, from information and data provided by Catchment Management Authorities and the Department of Primary Industries.

In addition to VIF funding of SIP programs, DPI also delivered a range of complementary activities through the *Future Farming Strategy*. In 2009–10, around \$1.2 million was invested across DPI programs relating to SIP activities, including land and water management programs across the Goulburn Broken, North Central and Mallee CMAs.

Commonwealth Government sustainable irrigation programs

The Commonwealth Government provides funding for on-farm irrigation efficiency programs, which some CMAs also deliver along with state-funded programs. If not managed effectively, this can lead to duplication.

SIP outputs have been appropriately adjusted in the relevant catchments so that activities under SIP avoid duplication and achieve added value. There has been an increase in the number of whole farm plans developed (a pre-requisite for farmers to be eligible for Commonwealth Government program funding) and a reduction in SIP incentive programs aimed at on-farm improvements, as the Commonwealth Government funds these activities.

3.4 Sustainable Irrigation Program implementation

Irrigation Land and Water Management Plans developed by CMAs guide SIP investment and the implementation of activities to achieve the broad natural resource management strategic targets included in each CMA's Regional Catchment Strategy.

Service level agreements are developed annually between CMAs and DPI for SIP projects funded through VIF. These outline project reporting obligations and details including project activities, outcomes and funding. The agreements provide sufficient information to allow for effective implementation and monitoring of SIP projects, and DSE has adequate processes in place to monitor progress.

DSE monitors the progress of SIP projects through annual VIF performance reports. Performance for the two most recent years—2008–09 and 2009–10—is shown in Figures 3B and 3C. These years represent the most recent available data under VIF, which started operation in 2008–09. Performance for the period 2003–04 to 2007–08 is discussed later in this section.

3.4.1 Project performance—2008–09 and 2009–10

For the three audited CMAs, the majority of SIP projects met (rated satisfactory) or exceeded the VIF intermediate outcome and output targets. For 2008–09 this was 91 per cent, and for 2009–10 it was 82 per cent.

As Figures 3B and 3C highlight, good performance was demonstrated in multiple SIP projects across the three audited CMAs. Poor performance against targets does not necessarily mean actual underachievement, and is generally a reflection of reporting abnormalities, funding arrangements or seasonal and climatic conditions affecting the ability of CMAs to deliver SIP projects. Specific examples are provided in the notes to Figure 3B.

Figure 3B
Performance descriptor target achievement 2009–10:
Sustainable Irrigation Program funded projects

Targets (per cent)	Goulburn Broken CMA	Mallee CMA	North Central CMA	Total
Exceed (more than 100)	22	4	20	46
Satisfactory (80–100)	3	3	1	7
Below (50–79)	4	0	2	6
Well below (less than 50)	4 ^(a)	0	2 ^(b)	6
Total	33	7	25	65

(a) Performance against targets was not reported through VIF. The project has external funding and project achievements are reported as required by the external funder every five years, rather than annually as required under VIF.

(b) Variations were completed (one initiated by the North Central CMA and another initiated by DSE) to better reflect the changing demands through irrigation modernisation for cost-share incentives and for additional funding for whole farm plans and surface water monitoring.

Note: The data above shows performance against targets for activities during 2009–10, as well as where activities were carried over into the following year. This is primarily because under SIP incentive programs, particularly in the Mallee and North Central CMAs, funds are often committed in the year they are allocated but not expended until the following year when on-farm works are undertaken. DSE may also allocate funds late in the year and this and factors such as drought have also resulted in works being undertaken in the year following the allocation of funds.

Note: Final SIP project data for 2010–11 not available at the time of preparing this report.

Source: Victorian Auditor-General's Office based on each Catchment Management Authority's 2009–10 VIF Performance Report.

Key achievements in 2009–10:

- Whole farm plans developed on existing farms covering 15 635 hectares (ha) in the Goulburn Broken CMA (target of 4 950 ha), 2 105 ha in the North Central CMA (target of 5 400 ha) and 157 ha in the Mallee CMA (target of 65 ha).
- Seventy-six irrigation re-use systems servicing 4 518 ha were implemented in the Goulburn Broken CMA, saving 2 904 megalitres (ML) of water (target of 47 systems servicing 500 ha and saving 375 ML). Two re-use systems servicing 348 ha and saving 373 ML of water were implemented in the North Central CMA (target of one system servicing 100 ha and saving 75 ML).
- Irrigation system upgrades servicing seven properties over 472 ha were implemented in the Goulburn Broken CMA, saving 354 ML of water (target of 10 properties over 400 ha saving 300 ML). In the Mallee CMA system upgrades were over 266 ha, saving 602 ML of water (target of 161 ha saving 365 ML).

Figure 3C shows project performance against targets for 2008–09.

Figure 3C
Performance descriptor target achievement 2008–09:
Sustainable Irrigation Program funded projects

Targets (per cent)	Goulburn Broken CMA	Mallee CMA	North Central CMA	Total
Exceed (more than 100)	24	6	3	33
Satisfactory (80–100)	1	4	3	8
Below (50–79)	1	1	0	2
Well below (less than 50)	0	1	1	2
Total	26	12	7	45

Note: The data above shows performance against targets for activities during 2008–09 as well as where activities were carried over into the following year. This is primarily because under SIP incentive programs, particularly in the Mallee and North Central CMAs, funds are often committed in the year they are allocated but not expended until the following year when on-farm works are undertaken. DSE may also allocate funds late in the year and this and factors such as drought have also resulted in works being undertaken in the year following the allocation of funds.

Source: Victorian Auditor-General's Office based on each Catchment Management Authority's 2008–09 Regional Catchment Investment Plan Performance Report, and Department of Sustainability and Environment data where Regional Catchment Investment Plan reports did not report targets.

Key achievements in 2008–09:

- Whole farm plans developed on existing farms covering 19 928 ha in the Goulburn Broken CMA (target of 9 600 ha), 917 ha in the North Central CMA (target of 780 ha) and 235 ha in the Mallee CMA (target of 143 ha).
- Sixty-six irrigation re-use systems servicing 3 643 ha were implemented in the Goulburn Broken CMA, saving 2 732 ML of water (target of systems servicing 2 626 ha saving 280 ML). Nine re-use systems servicing 1 251 ha and saving 1 453 ML were implemented in the North Central CMA (target of three systems servicing 51 ha saving 225 ML).
- Irrigation system upgrades servicing 607 ha were implemented in the Goulburn Broken CMA, saving 4 555 ML of water (target of systems servicing 500 ha saving 375 ML). In the Mallee CMA system upgrades were made to 30 properties over 323 ha, saving 563 ML of water (target of 29 systems servicing 201 ha saving 446 ML).

3.4.2 Project performance—2003–04 to 2007–08

During the period from 2003–04 to 2007–08, SIP regional investment was made through the Regional Catchment Investment Plan (RCIP) process—the precursor to VIF. The quality of CMA reporting during this period is variable and some performance reports do not have targets for reported SIP outputs.

This makes it difficult to reliably assess performance during this period and to compare performance against projects undertaken since 2008–09 under VIF. This is particularly so given the different intermediate outcomes and performance descriptors compared to outputs reported under some RCIP projects.

Given this, reports from the audited CMAs indicate general achievement against targets, including around 63 per cent of targets being met or exceeded between 2003–04 and 2007–08, where data is available. SIP evaluations undertaken in 2009 support the achievement of outputs during this period.

DSE assesses and reports on VIF outputs as a proxy for SIP program performance. While this provides an indication of statewide performance, it does not indicate how the program is progressing in achieving the SIP outcomes. Rather, the statewide performance reports assume connections between the VIF outputs and the SIP outcomes. While some connections are common sense, overall they lack clarity.

Figure 3D shows the reported major achievements from across SIP, covering key output areas for SIP for the period 2007–08 to 2009–10. It shows the statewide totals for key SIP works and activities undertaken by CMAs across the state, based on VIF and RCIP performance reports.

Figure 3D
Sustainable Irrigation Program statewide highlights

Output	2007–08	2008–09	2009–10
Volume of water saved for productive use on farms	7 200 ML	6 700 ML	6 800 ML
Nutrients retained on-farm – reuse systems	7.7 tonnes phosphorous	12.7 tonnes phosphorous	9.2 tonnes phosphorous
Whole farm plans developed (area)	23 000 ha	29 800 ha	21 000 ha
Improved irrigation systems (area)	11 900 ha	28 700 ha	21 700 ha
Surface water management systems (regional drainage)	9 km protecting >900 ha	10 km protecting >1 000 ha	14 km protecting >1 800 ha
Groundwater pumps for salinity mitigation	40 pumps protecting >3 100 ha	11 pumps protecting 1 100 ha	9 pumps protecting 3 650 ha
Environmental works – fencing of remnant native vegetation	720 ha	494 ha	2 760 ha

Source: Victorian Auditor-General's Office based on data from the Department of Sustainability and Environment.

The estimated volume of water saved for productive use on-farm for 2003–04 was 3 880 ML, and as indicated in Figure 3D, the program has continued to achieve water savings for productive use on-farm.

3.4.3 Funding and expenditure

SIP funding for these projects has been allocated and expended as intended. Agencies track expenditure against projects, their intermediate outcomes and their related outputs.

Where there are multiple funders of CMA projects, including multiple SIP initiatives funding components of the same project and investors outside of SIP, it is difficult to directly link initiative funding to the achievement of particular outputs. External reviews of SIP initiatives have identified similar issues with monitoring the expenditure of funds against investment sources and recommended the establishment of separate monitoring and tracking systems for new initiatives.

DSE has established separate monitoring and reporting systems for the most recent SIP initiative, *Linking Farms and Catchments to Irrigation Modernisation* which commenced in 2008–09. This includes monitoring and reporting on outputs from the initiative so that they can be more easily demonstrated, including mapping activities so they can be represented spatially. DSE's advice is that this was undertaken as the VIF reporting mechanisms are unable to provide the level of detail required for the initiative.

3.5 Inter-agency arrangements

Effective arrangements exist between DSE, DPI and the CMAs in the delivery of SIP. The *SIP Strategic Direction* and service level agreements clearly describe roles and responsibilities, which are well understood. Activities are undertaken in accordance with agreed roles and responsibilities.

A SIP Group has been established with the overall aim of improving the effectiveness and efficiency of SIP in achieving its policy objectives. The SIP Group includes all key staff, and activities such as the SIP Group quarterly forum are effective in providing for on-going collaboration across the program.

Arrangements between CMAs and DPI for SIP reporting and administering financial incentive payments to farmers differ across the catchments audited, as each CMA has a different operating environment, procedures and policies. However, the differences are not considered significant as the outcome, in terms of reporting SIP activities and managing incentive payments, is consistent across catchments.

Appendix A.

Victorian Investment Framework outcomes

Figure A1
Victorian Investment Framework intermediate outcomes and performance descriptors for the Sustainable Irrigation Program

Intermediate outcome	Performance descriptor	Unit
Habitat for improved biodiversity	Additional area and length of habitat improved – riparian	Hectares and kilometres
	Additional area of habitat improved – wetlands	Hectares
	Additional area of habitat improved – terrestrial (including coastal)	Hectares
Reducing the risk of salinity on land and water assets	Reduction in recharge and discharge: Additional area of revegetation (indigenous, non-indigenous, pasture)	Hectares
	Additional area serviced by surface water management system	Hectares
	Additional area serviced by sub-surface water management system	Hectares
Improved water quality	Area of land managed for soil improvement	Hectares
	Estimated reduction in phosphorous	Tonnes
	Estimated reduction in nitrogen	Tonnes
Additional water saved for return to productive use on-farm and/or the environment	Estimated reduction in sediment	Tonnes
	Estimated reduction in salt	Tonnes
	Estimated volume of water saved for use on-farm	Megalitres
Increased or maintained capacity of individuals and land managers to manage natural resources sustainably	Estimated volume of off-farm water saving (e.g., channel piped, decommissioning)	Megalitres
	Additional area and number of landholders managing natural resources sustainably	Hectares and number
	Number of projects/activities/events to increase human capital of individuals and land managers to manage natural resources sustainably Human capital refers to individuals' skills, knowledge, attitudes, awareness etc.	Number

Figure A1
Victorian Investment Framework intermediate outcomes and performance descriptors for the Sustainable Irrigation Program – *continued*

Intermediate outcome	Performance descriptor	Unit
Increased or maintained capacity of individuals and land managers to manage natural resources sustainably	Additional area and number of network strategic plans developed and being implemented	Number and hectares
	Community groups supported	Number
Increased or maintained capacity of community groups to contribute to natural resource management (NRM) and cultural heritage outcomes	Number of projects/activities/events to increase human capital of community groups to contribute to NRM and cultural heritage outcomes Human capital refers to individuals' skills, knowledge, attitudes, awareness etc.	Number
	Number of projects/activities/events to increase social capital of community groups to contribute to NRM and cultural heritage outcomes Social capital refers to the attributes of relationship that enable individuals and groups to work together e.g. trust, reciprocity, norms, etc.	Number
	Number and full time equivalents of community NRM support positions funded	Number and full time equivalents
Increased or maintained institutional capacity of regional agencies to implement the Regional Catchment Strategies (RCS)	Number of additional endorsed regional strategy for NRM completed	Number
	Number of projects/activities/events to increase social capital of regional agencies to implement the RCS Social capital refers to the attributes of relationships that enable individuals and groups to work together (for example, trust, reciprocity, norms, etc.)	Number
Increased or maintained institutional capacity of regional agencies to implement the RCS	Meet the activities and/or obligations under the relevant Act/s Note this performance descriptor will be captured through a narrative with Catchment Management Authorities (CMA) documenting which statutory and regulatory obligation they will cover for the funding against this performance descriptor	(No metric)
	Increased or maintained institutional regional capacities to support the delivery of the Victorian Investment Framework for Natural Resource Management (VIF) Regions to document any significant activities around building CMA capacity that require funding to support the delivery of the VIF and not covered by above	(No metric)

Source: Victorian Investment Framework for Natural Resource Management Guidelines 2011–2012.

Appendix B.

Audit Act 1994 section 16— submissions and comments

Introduction

In accordance with section 16(3) of the *Audit Act 1994* a copy of this report was provided to the Department of Sustainability and Environment, the Department of Primary Industries, Goulburn Broken Catchment Management Authority, North Central Catchment Management Authority and Mallee Catchment Management Authority with a request for submissions or comments.

The submissions and comments provided are not subject to audit nor the evidentiary standards required to reach an audit conclusion. Responsibility for the accuracy, fairness and balance of those comments rests solely with the agency head.

RESPONSE provided by the Secretary, Department of Sustainability and Environment



**Department of
Sustainability and Environment**

Ref: SEC008092
File: CS/36/3104


Mr D D R Pearson
Auditor-General
Victorian Auditor-General's Office
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Australia
Telephone: (03) 9637 8000
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ABN 90 719 052 204
DX 210098

Dear Mr Pearson

**SUPPORTING CHANGES IN FARMING PRACTICES : SUSTAINABLE IRRIGATION -
PROPOSED AUDIT REPORT**

Thank you for your letters, dated 5 September and 16 September 2011, regarding the proposed audit report on *Supporting changes in farming practices: sustainable irrigation*.

The Department of Sustainability and Environment (DSE) welcomes the audit report and accepts the recommendations made. The following submission is made in accordance with section 16(3)(b) of the *Audit Act 1994*.

Attachment A - provides DSE's response to the recommendations in the proposed audit report.

I would like to take this opportunity to thank your staff for the way in which they have conducted this audit. DSE's representatives have found the process to be open and transparent, with requests made in a timely and reasonable manner.

Yours sincerely

Greg Wilson
Secretary

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RESPONSE provided by the Secretary, Department of Sustainability and Environment – continued

Attachment A: the Department of Sustainability and Environment's response to the recommendations in the proposed audit report on *Supporting changes in farming practices: sustainable irrigation*.

VAGO Recommendation	DSE Response
1. The Department of Sustainability and Environment should:	
<ul style="list-style-type: none"> Update the SIP Strategic Direction and SIP Program Logic so that they align with each other, clearly define the intent of outcomes and demonstrate the links between outputs, intermediate outcomes and outcomes 	<p>Agree.</p> <p>DSE will update the SIP Strategic Direction and the Program Logic. This will be linked into the development of a comprehensive Monitoring, Evaluation, Reporting and Improvement (MERI) Plan for the SIP. Project scoping of the MERI Plan for SIP is currently underway; the findings and recommendations of the performance audit will inform this work.</p>
<ul style="list-style-type: none"> Develop relevant and appropriate performance indicators for the SIP Strategic Direction to enable the assessment of outcomes achievement 	<p>Agree.</p> <p>DSE will refine the current suite of performance indicators to enable better assessment of outcomes achievement. This will form part of the project to develop a comprehensive MERI Plan for the SIP.</p>
<ul style="list-style-type: none"> Improve its program reporting by including information on the achievement of outcomes in addition to output reporting. 	<p>Agree.</p> <p>DSE will expand on the outcome reporting already being undertaken by the SIP. This will be guided by work to develop a MERI Plan for the SIP.</p> <p>The SIP annual report currently includes some intermediate outcomes information, based on data submitted in the VIF regional reports. The SIP annual reports were not intended to include detailed outcome focussed reporting, as the annual reporting timeframe is inappropriate for this purpose.</p> <p>The SIP three-yearly achievements report, due to be undertaken in 2011, will refer to the SIP outcomes.</p>

RESPONSE provided by the Secretary, Department of Sustainability and Environment – continued

VAGO Recommendation	DSE Response
<p>2. The Department of Sustainability and Environment, Department of Primary Industries and Catchment Management Authorities should address the inefficiencies with the current reporting processes to reduce duplication and improve timeliness.</p>	<p>Agree.</p> <p>DSE will continue to work with our implementation partners to reduce duplication and improve timeliness of reporting.</p> <p>Following an evaluation in late 2010, the Victorian Investment Framework (VIF) team, on behalf of all participating investment programs, has requested CMAs to supply reporting data in Excel format and is developing a more user friendly spreadsheet format for collating data. This will be a more efficient way for investment programs to access and manipulate reporting data and also enable reporting to capture all funding and activities undertaken in any given financial year.</p> <p>In addition, the PIRS system managed by the VIF team for project application and assessment is being upgraded to include variations to project outcome and dollar totals, and timelines. This will make tracking actual figures against proposed and varied project figures easier for CMAs and investment programs.</p>

Table notes:

- Recommendations copied from page xi of the proposed report, VAGO, September 2011.
- SIP – Sustainable Irrigation Program
- MERI – monitoring, evaluation, reporting, improvement.
- VIF – Victorian Investment Framework

RESPONSE provided by the Secretary, Department of Primary Industries



Department of Primary Industries



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Our Ref: SI007276

Mr D D R Pearson
Auditor-General
Victorian Auditor-General's Office
Level 24, 35 Collins Street
MELBOURNE VIC 3000

Our Ref:

Dear Mr Pearson,

AUDIT ACT 1994, S16(3) - PROPOSED AUDIT REPORT - SUPPORTING CHANGES IN FARMING PRACTICES: SUSTAINABLE IRRIGATION

The Department of Primary Industries (DPI) welcomes the opportunity to provide comment on the audit report and is generally supportive of its findings. DPI believes this program is well administered and has achieved significant improvements in supporting changes in sustainable irrigation farming practices.

DPI does not agree with the finding that; *'Service Level Agreements (SLA) which are developed annually between CMAs and DPI for SIP projects funded through VIF enable effective project implementation and monitoring'*.

As the Victorian Investment Framework (VIF) is an annual output focussed process, it restricts the design of integrated longer term outcome focussed projects and programs.

VIF creates further inefficiencies because projects are developed independently for each participating catchment rather than through a whole of government program that is then tailored for individual catchments. There are also potential inefficiencies in having one government department purchasing the services of another through an investment process such as the VIF.

DPI is supportive of, and keen to assist in redressing the finding that the outcome related to a profitable, resilient and adaptable irrigation sector is not clear, as this is a core focus of DPI policy, strategy, research, service design and service delivery.

DPI is also supportive of the statement in the audit report that; *'sustainable irrigation aims to increase productivity while reducing any environmental or third party impact'*. This aligns well to DPI sector aligned sustainable agriculture services that deliver advice on integrated whole farm services including productivity and environmental benefits. As a consequence DPI is well placed to support the SIP in meeting its overall objective for *'irrigation to be increasingly productive, with lower environmental impact'*.

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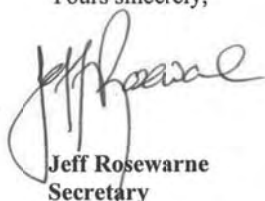
For more information about DPI visit the website at www.dpi.vic.gov.au or call the Customer Service Centre on 136 186.



**RESPONSE provided by the Secretary, Department of Primary Industries –
continued**

DPI looks forward to continuing to work with other partner agencies to design and deliver a more outcome focussed sustainable irrigation program with the overall aim of making irrigation increasingly productive, with a lower environmental impact.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Jeff Rosewarne', written over a printed name and title.

Jeff Rosewarne
Secretary

21/9/2011

RESPONSE provided by the Chair, Goulburn Broken Catchment Management Authority

22 September 2011

Mr. D D R Pearson
Auditor General
Victorian Auditor-Generals Office
Level 24,
35 Collins Street
Melbourne 3000



**GOULBURN
BROKEN**
CATCHMENT
MANAGEMENT
AUTHORITY

ABN 89 184 039 725

Dear Mr Pearson

Audit Report – Supporting changes in farming practices: Sustainable Irrigation

I refer to the proposed VAGO Audit Report titled; *Supporting changes in farming practices: Sustainable Irrigation* that has been provided to the Goulburn Broken Catchment Management Authority (CMA) for comment prior to tabling in Parliament.

The report as provided reflects the cooperative process that the audit confirmed which in turn has allowed an excellent understanding of the programs in place and the level of integration required between multiple agencies to deliver this complex program. It has been pleasing that our organization has been able to participate in this audit and assist the auditors to gather the required information to realize the context and performance of the program across the Northern Irrigation Region of Victoria.

The report highlights the significant achievements and efficiencies that we in the Goulburn Broken CMA have worked hard to achieve with our partners from both the State and Regional levels. The ability to integrate and work in a cooperative manner with investors and stakeholders has allowed us to meet and exceed our catchment targets and this was identified in the audit report.

The importance of regional priorities as developed through the Regional Catchment Strategy and in our case the relevant Sub-Strategies has seen clear understanding and ownership of the long-term goals of the programs. Importantly, we need to continue to ensure that the regional priorities are reflected in the State investment priorities. This approach also allows the facilitation of co-investment from other Federal, State and regional investors through organizations such as ourselves to build on the delivery of these types of programs.

I look forward to the final report and any improvements it recommends.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Peter F Ryan'.

Peter F Ryan
Chair, Goulburn Broken Catchment Management Authority

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RESPONSE provided by the Chief Executive Officer, North Central Catchment Management Authority



NORTH CENTRAL
Catchment Management Authority
Connecting Rivers, Landscapes, People



DM ref: 55155

22 September 2011

Mr D D R Pearson
Auditor General
Victorian Auditor-Generals Office
Level 24,
35 Collins Street
Melbourne 3000



Dear Mr Pearson

Proposed Audit Report - Supporting changes in farming practices: sustainable irrigation.

The North Central Catchment Management Authority has reviewed the above mentioned document. The audit report has identified a number of key issues concerning the administration of the Sustainable Irrigation Program.

In our opinion, the issues identified via the audit and, the recommendations that have been made, will improve the Sustainable Irrigation Program.

The genuine effort made by your staff to involve the North Central Catchment Management Authority in the audit is greatly appreciated.

We look forward to receiving a copy of the final report once it has been tabled in the Victorian Parliament.

Yours sincerely

Damian Wells
Chief Executive Officer

Connecting Rivers, Landscapes, People

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RESPONSE provided by the Board Chair, Mallee Catchment Management Authority

Our Ref: GS:jmn/2010502/VAGO Response

21 September 2011

DDR Pearson
Auditor-General
Victorian Auditor-General's Office
Level 24, 35 Collins Street,
MELBOURNE VIC 3000



Dear Mr Pearson,

Re: Proposed Audit Report - Supporting Changes in Farming Practices: Sustainable Irrigation

I refer to your correspondence dated 16 September 2011 regarding the proposed report on "*Supporting changes in farming practices: sustainable irrigation*".

The Mallee Catchment Management Authority (CMA) welcomes the opportunity to respond to the proposed audit report by providing comments in the attached.

The Department of Sustainability and Environment's (DSE) Sustainable Irrigation Program's (SIP) importance to the Mallee irrigation community cannot be overstated.

The SIP remains the principle source of government funding in support of sustainable irrigation activities undertaken by the Mallee CMA.

Related work funded through the SIP and undertaken by the region has resulted in considerable benefits both to the environment and irrigators alike. Identified improvements in the efficiency and effectiveness of the SIP can only result in enhanced outcomes for investors, the environment and the irrigation community of the Mallee.

Should you require any further information about the comments provided please do not hesitate to contact Glen Sutherland, Manager Regional Sustainability Unit on 03 50514308.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Sharyon Peart'.

Sharyon Peart
Board Chair

mallee
catchment management authority

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DPI Complex, Cnr Koorlong Ave & Eleventh Street, Irymple 3498 PO Box 5017, Mildura Vic 3502 DX217502
Telephone 03 5051 4377 Facsimile 03 5051 4379 ABN 27 811 602 364

RESPONSE provided by the Board Chair, Mallee Catchment Management Authority – continued



Response to Victorian Auditor-General - Supporting Change in Farming Practice – Sustainable Irrigation Program Audit

The Mallee Catchment Management Authority (CMA) tenders the following comments in relation to the conclusions, findings and recommendations contained within the draft audit report of the Sustainable Irrigation Program.

Introduction.

The Department of Sustainability and Environment's (DSE) Sustainable Irrigation Programs (SIP) importance to the Mallee irrigation community cannot be overstated.

The SIP remains the only source of government funding remaining anywhere in support of sustainable irrigation activities undertaken by the Mallee CMA in the region.

The SIP provides direct support to the region's irrigation related programs. It is recognised that there are threatening processes which impact on the region's environmental asset base that can be directly related to the management (both historical and current) of irrigated horticulture land. (e.g. salinity, water logging, physical damage to native vegetation, soil health, pest plants and pest animals).

The SIP program continues to directly assist the region to support delivery of Victoria's relevant national, state and intergovernmental obligations.

Regional activities funded by SIP have strong links and relevance to the region's Regional Catchment Strategy (RCS), Salinity Management Plans (SMPs), the Nyah to the South Australian Border, Nangiloc – Colignan and Sunraysia SMPs, which principally focus on sustainable farming practices and the protection of environmental values and assets.

Importantly SIP provides the necessary resources for the region to deliver on its relevant legislative requirements and responsibilities, including those contained within the Mallee CMA's Statement of Obligations, Catchment and Land Protection Act 1994, and Statement of Obligations, Water Act 1989.

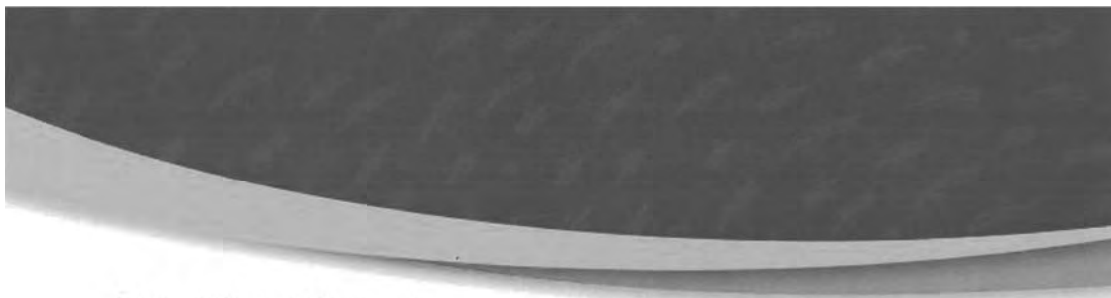
The Mallee CMA recognises the importance of the Victorian Auditor General's SIP audit, particularly in terms of the opportunity it affords to assist all concerned to do business more efficiently and effectively.



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RESPONSE provided by the Board Chair, Mallee Catchment Management Authority – continued



Mallee CMA Audit Comments.

The Mallee CMA is generally in agreement with the conclusions, findings and recommendations contained within the draft audit report of the SIP.

The Mallee CMA recognises that it has had sufficient opportunities to provide data, feedback and views through progressive engagement, during the course of the audit.

As such the Mallee CMA is satisfied that from a regional perspective, its viewpoint and issues have been adequately considered in the preparation of the draft audit report.

In terms of the recommendation 1; *Pertaining to better alignment of the SIP Strategic Direction and Program Logic*; the Mallee CMA would welcome any new process which continues consideration of the different regional perspectives, drivers and priorities that exist across the state.

In terms of the recommendation 2, *Pertaining to avoiding duplication with reporting*; the Mallee CMA recognises that there is scope to improve efficiencies in current reporting processes and any improvement would be most welcome.



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