PRODUCTIVITY COMMISSION

Productivity Commission Submission to the Environmental Management Systems Working Group

March 2002

ISBN 1 74037 079 1

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An appropriate citation for this paper is:

Productivity Commission 2002, *Productivity Commission Submission to the Environmental Management Systems Working Group: Towards a National Framework for the Development of Environmental Management Systems in Agriculture*, mimeo, Canberra, March.

The Productivity Commission

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Key messages

- The use of environmental management systems in agriculture may contribute to improved agricultural productivity and/or environmental outcomes although evidence to date is limited on both counts. The potential contribution of environmental management systems will depend not only on good design, but also good implementation, monitoring and review.
- The potential contribution of environmental management systems to agricultural productivity and/or environmental performance may be less important than other factors such as the overall motivation and managerial ability of resource managers.
- The potential costs of government involvement in facilitating the adoption of environmental management systems in agriculture, and the uncertainty about the outcomes, appear to have been downplayed in the discussion paper. It is still too early to tell the extent to which government involvement is necessary or if it will provide net benefits to the community.
- The proposed national framework for the development of environmental management systems in agriculture may be a useful coordinating mechanism for governments, but aspects of the proposed framework appear inappropriate and/or inconsistent. For example, the proposed framework emphasises a voluntary and industry-led approach, while at the same time emphasising government involvement and the potential use of incentives.
- The proposed limitations on the use of environmental management systems by governments in regulatory and other government programs should be considered on a case-by-case basis; particular uses should not be arbitrarily excluded from the national framework.
- The potential use of incentives by governments will require careful analysis to assess whether the benefits to the community outweigh the costs. If incentives are to be used, they will require careful targeting, monitoring of effectiveness and review.

1 Introduction

An Environmental Management System (EMS) is a management tool that a business or organisation can use to manage its impacts on the environment on a systematic and continuous basis (see appendix A). An EMS can provide a management framework within which best management practices can be integrated, and codes of practice upheld. An EMS can be externally audited and may be certified to the international ISO 14001 standard (EMS Working Group 2001).

An agricultural business may voluntarily adopt an EMS because it: provides improved financial returns; is the least cost way of meeting regulatory requirements (or anticipated requirements); and/or can help achieve environmental management objectives and provide intangible benefits to the business and community.

A wide range of EMSs are being developed in Australia and overseas — some voluntary and some mandatory. In some cases, environmental codes of practice developed by industry associations have in turn been developed into EMSs (RIRDC 2001). EMSs can involve solely process requirements, or process requirements with additional performance and outcome standards.

EMSs are being promoted by both the public and private sectors across a range of scales (see box 1). Their development and use in agriculture has parallels with arrangements already established in the fisheries and forestry sectors.

Box 1 **What EMSs are being developed in Australia?**

EMSs are being developed to apply at various scales (including farm and catchment), in different regions and industries, and for different purposes. For example, EMSs are being considered:

- pursuant to the National Action Plan on Salinity and Water Quality;
- by the Australian grains, livestock, rice, sugar, cotton and wine industries, and producers of a range of horticultural commodities such as bananas, citrus, tomatoes and potatoes;
- by regional groups in several jurisdictions for the purpose of regional marketing of products or natural resource management;
- by a consortium of Landcare Groups in southern Queensland which has developed the Australian Landcare Management System (which now also has the support of the Queensland Government and Meat and Livestock Australia); and
- to help facilitate the introduction of GM plants into Australian agriculture.

Sources: Douglas and Gleeson (2001); EMS Working Group (2001); and RIRDC (2001).

EMS discussion paper

The Environmental Management Systems Working Group was established in May 2000 by the Sustainable Land and Water Resources Management Committee of the Standing Committee on Agriculture and Resource Management. In November 2001, the EMS Working Group — consisting of representatives from Commonwealth, State and Territory Departments of Primary Industry and Agriculture — released a discussion paper entitled 'Towards a National Framework for the Development of Environmental Management Systems in Agriculture' (see appendix B).

The EMS discussion paper seeks community and industry views on:

- the value of and interest in EMS in agriculture;
- the framework proposed for the further development and coordination of EMS in agriculture, at various scales, including the farm, regional and industry scales; and
- appropriate roles for government and industry in facilitating EMS adoption (EMS Working Group 2001, p. 9).

The framework is also proposed to assist and enhance existing industry initiatives on EMS in agriculture.

Purpose of this submission

This submission reviews specific aspects of the proposed national framework and focuses on the role of governments in facilitating the adoption of EMSs:

- section 2 reviews the role of EMSs, benefits and costs, and whether EMSs are likely to bring improved outcomes;
- section 3 considers the role of governments in facilitating the adoption of EMSs, whether a national framework is necessary and how the proposed national framework measures up;
- section 4 focuses on the proposed limitations to government involvement with EMSs in agriculture;
- section 5 discusses the use of incentives by governments to promote the adoption of EMSs; and
- section 6 draws together the main arguments of the submission.

The Commission has not sought to provide a comprehensive review of EMSs in this submission. Rather, it offers an overview, drawing on a range of more detailed studies by the Commission and others.

2 The role of environmental management systems

Understanding the potential roles EMSs can play in resource management is central to understanding the potential role of governments with EMSs in agriculture and that of a national framework. In broad terms, EMSs in agriculture can be used as:

- a voluntary mechanism for businesses and organisations to improve productivity, environmental performance and better meet market demands; and/or
- a direct policy tool of government to augment or support existing programs, economic instruments and regulations.

Agricultural businesses and consumers may gain in a number of ways from the wider adoption of EMSs. For example, EMSs may help businesses:

- adopt sustainable management practices and respond to environmental challenges;
- identify cost savings from the discovery and implementation of more efficient mechanisms to achieve productivity and environmental goals;
- avoid more stringent and prescriptive regulatory standards;
- improve market access or, more rarely, gain price premiums by better meeting potential consumer concerns about the environment. The use of ecolabelling and other forms of product and/or business certification relating to environmental management may support these market opportunities;
- provide marketable ecosystem services such as watershed protection or carbon sequestration;
- demonstrate agricultural resource quality and management to land purchasers, insurers and financiers (including ethical investment vehicles); and
- bring together a number of quality assurance, health and safety and environmental requirements into a systematic umbrella system (see Carruthers 2001; Coglianese 1999; and Coglianese and Nash 2001a).

EMSs may also provide governments and the broader community with a range of benefits that can assist in achieving social, environmental and economic policy goals. These include:

- improved resource allocation from the efficiency and flexibility benefits of more performance-oriented environmental regulation (compared to prescriptive regulation), and more strategic and systems-based approaches to regulatory enforcement and compliance than may occur under inspection-based systems;
- new methods of measuring and tracking environmental information and, if information is made publicly available, an additional mechanism for

accountability in environmental performance and providing consumers and investors with more information upon which to make informed choices;

- providing a useful educational role by expanding landholder understanding of ecosystem and agronomic relationships, and of government objectives relating to natural resource management;
- institutionalising an organisation's commitment to environmental goals; and
- improving overall environmental performance beyond that achieved under current regulatory systems (see Alexandra 1999; Coglianese 1999; and Coglianese and Nash 2001a).

However, the development and use of an EMS by agricultural businesses and organisations is not a costless exercise and may not be appropriate. Potential direct and opportunity costs include:

- EMS development and implementation, including obtaining appropriate technical assistance and specialist information;
- changes to infrastructure and equipment to comply with EMS requirements;
- education and training of managers and employees to prepare and/or implement EMSs; and
- certification and auditing (see Carruthers 2001; and Coglianese 1999).

Further, the nature and extent of the benefits (and costs) from EMSs, and the extent to which they are adopted, will vary depending on the region, type and size of business and organisation concerned, and consumer preferences. As the Industry Commission (1998) observed:

> As with quality management systems generally, individual environmental management systems are more likely to appeal to the larger and better resourced farm businesses. The needs of most small farms may be best served by codes of practice and voluntary standards. This is not to deny that some smaller farmers may be successful in developing and applying an individual environmental management system. (IC 1998, p. 165)

These characteristics of EMSs have implications for their use as a policy tool and the promotion of EMSs in agriculture by governments.

Will greater use of EMSs bring improved outcomes?

A key question in assessing the potential roles of EMSs is whether the increased use of EMSs in agriculture is likely to contribute to improved environmental outcomes, productivity and/or greater satisfaction of consumer preferences. A related question is the costs of achieving any benefits. These issues do not receive adequate

recognition in the proposed framework and yet are critical to any discussion of the role of EMSs in agriculture and facilitation of EMSs in agriculture by governments.

The preliminary findings of a 2001 case study assessment of 45 Australian and 7 New Zealand farms identified that there were a range of reasons for EMS adoption. Benefits included: improved planning and information flows; less time 'putting out fires'; better risk management; improved stakeholder relationships; improved productivity and performance; market access and greater confidence in actions (Carruthers 2001).

However, while the use of an EMS may ensure that some environmental issues are considered at the farm level, it may not give any assurance about the level of environmental performance or the achievement of desired environmental outcomes. This is largely because EMSs are generally adopted as process-based systems, specifying tasks to be undertaken without necessarily specifying outcomes (although outcomes can be added to such systems). Moreover, even if farm scale outcomes are achievable, this may not equate to the achievement of catchment or national objectives.

Overall, there is a lack of empirical research on the costs and benefits and resulting outcomes from the use of EMSs.

In 1998, the New Zealand Ministry of Agriculture and Forestry (MAF) assessed the role of on-farm quality assurance (QA) and EMSs in achieving sustainable agriculture and sustainable land management policy outcomes. The MAF (1998) report examined eight case studies of on-farm QA/EMS programs and identified that:

> For Government, on-farm QA/EM systems applied in a coherent, co-ordinated manner, have the potential to contribute to sustainable agriculture and land management policy outcomes while minimising the regulatory burden on land managers. …
>
> However, the extent to which any of the systems studied have actually contributed to sustainable agriculture and land management outcomes is not clear. Little or no monitoring of their impacts has been undertaken. … [The analysis] identified limitations to their current use as instruments for policy, particularly for resource management. They are not, as yet, achieving their policy potential. (MAF 1998, p. 63)

In 2001, in a major review of the use of EMSs in the United States, Coglianese and Nash (2001a, p. 19) suggested that:

> … there is reason to expect that EMSs will have important impacts on overall environmental quality but also reason to be skeptical of at least the strongest claims of EMS advocates.

Further, Coglianese and Nash (2001b, p. 228–9) note that some research:

> … suggests a correlation between EMS adoption and strong environmental performance. However, existing research cannot yet discern whether the implementation of an EMS is itself a necessary or sufficient condition for real environmental improvement. … Does implementation of an EMS cause environmental performance to improve? The conclusion we draw from the preceding chapters is equivocal: it depends.

RIRDC (2001) reviewed the use of Voluntary Environmental Management Arrangements (VEMAs), including EMSs, and concluded that:

> Although VEMAs hold enormous promise as a possible means of addressing complex environmental and NRM [natural resource management] issues, the premature view of VEMAs as an environmental management panacea is cautioned. Just as orthodox regulation has limitations, so too do VEMAs. … Moreover, high participation rates in VEMAs are not necessarily synonymous with good environmental performance or outcomes. (RIRDC 2001, p. 5)

Further, while EMSs may bring some positive outcomes:

- win-win opportunities may be rare — there may be few opportunities for achieving cost savings while at the same time improving environmental management;
- substantial cultural change in organisations is difficult;
- some managers may use EMSs to avoid regulatory scrutiny — some managers may adopt and use EMSs to strategically influence regulators in an effort to pre-empt regulation, reduce the level of government monitoring or prompt regulators to focus on competitors; and
- differences in the characteristics and standards of EMSs can also affect organisational performance and the outcomes from the implementation of an EMS (see Coglianese and Nash 2001a).

Also, some research suggests that factors independent of EMSs, such as managers' overall motivation and managerial ability, may better explain environmental performance. This may suggest that government policies need to first foster ongoing motivation and managerial ability rather than EMS adoption *per se* (Coglianese and Nash 2001a and 2001c).

Given the limited empirical information available on the efficacy of EMSs in achieving private and/or public goals, and the various factors which determine the extent of private and public benefits and costs, increased research on the efficiency and effectiveness of EMSs in agriculture may be needed. This could be recognised in the proposed framework. Such research could inform both private sector decision

making and policy development — including developing a sound basis for governments supporting (or not supporting) the adoption of EMSs in agriculture.

3. The proposed national framework

Government involvement in facilitating the adoption of EMSs in agriculture needs to be carefully examined and assessed because of the potential costs of government action and uncertainty about the outcomes. The proposed national framework for developing EMSs in agriculture raises three key questions: what is the role of governments regarding EMSs; is a national framework necessary or even useful; and how well does the proposed framework and its underlying principles address the potential roles for government? Appendix B contains a brief outline of the framework proposed in the discussion paper.

What is the role of governments in EMSs?

Markets can be effective mechanisms for creating incentives for individuals to allocate resources to their most valued uses. In some cases, however, markets may not provide outcomes that are appropriate from the community's perspective. In the case of agriculture, potential 'market failures' may be attributed to:

- the existence of poorly defined property rights which may give rise to externalities such as water or air pollution; and/or
- inadequate information on the part of market participants.

Where market failures exist, there is the potential for governments to intervene to achieve better outcomes for the community as a whole. However, this will only be achieved if the benefits of any action outweigh the costs involved. Further, government action also carries a risk of 'failure' or of generating poor outcomes which needs to be considered in developing policy responses.

In terms of the use of EMSs in agriculture, there may be roles for government to:

- remove impediments to the adoption of EMSs in agriculture; and/or
- use EMSs as a direct policy instrument.

Impediments to adoption of EMSs in agriculture may include inappropriate government regulatory frameworks and/or interventions and information difficulties associated with EMS development and adoption. For example, landholders may find it difficult to gain access to information about the most appropriate EMS for their farm and how to link it into catchment plans or achieve marketing benefits.

Further, various institutional constraints can reduce the effectiveness of new environmental management instruments. For example, some native wildlife licensing systems and pastoral leasing arrangements may inhibit environmental management and conservation of biodiversity (see PC 2001). Removal of these constraints could be considered irrespective of the development of EMSs.

There are several ways in which EMSs could be used as policy instruments. First, the promotion of voluntary EMSs could complement other government supported programs such as Landcare. EMSs could provide a means of achieving improved environmental performance through, for example, lower long-term resource management costs.

Second, an EMS could be used to demonstrate that a resource manager has met a required environmental standard. In its report on ecologically sustainable land management, the Industry Commission (1998) proposed that each State and Territory allow individual landholders and other resource managers to develop and apply their own EMS to meet legal requirements for environmental management. The Queensland *Environment Protection Act 1994*, for example, provides that the Minister may formally recognise industry-prepared codes of practice under the Act. The codes state ways that businesses may demonstrate compliance with a general legislative environmental duty of care. The EMS discussion paper itself highlights that approval or certification can be required before landholders are provided access to resources, such as the need for an approved land and water property plan before landholders can use irrigation water allocations.

Third, EMSs could be used to support eligibility for government stewardship or conservation payments. For example, EMS adoption could be a pre-requisite for government funding, or used to measure ecosystem or conservation services provided by landholders. In this and the above example, EMSs could therefore play useful roles in facilitating various cost sharing arrangements (for example, see Aretino et al. 2001).

Fourth, EMSs could support information collection to assist resource management decisions and policy development. Given that information constraints may be a central impediment to effective natural resource management, using EMSs in this context could be useful. There are concerns, however, that current EMS standards such as ISO 14001 do not encourage public disclosure of environmental performance information or generate systems of environmental performance indicators (Metzenbaum 2001). There may be potential to integrate EMS information requirements with other information collection approaches such as farm surveys although the costs of information collection and management would need to be considered.

Fifth, EMSs could be used in conjunction with mandatory standards. EMSs may be able to replace existing prescriptive licensing systems, improve reporting requirements and/or help inform and revise standards. The adoption of a management systems approach by a business could bring reduced licence and monitoring fees as there would be less need for frequent inspections.

EMSs may also be used by governments as quasi-regulation (or 'grey-letter law'). Quasi-regulation can take many forms such as codes of practice, advisory notes, guidelines and rules of conduct (ORR 2001). Governments may use quasi-regulation to influence business activity instead of explicit regulation. Care is needed to ensure that any quasi-regulation is effective and efficient, and that it has been developed with appropriate regulation impact analysis (ORR 1998) (box 2).

Box 2 **Issues raised by quasi-regulation**

The use of quasi-regulation raises a number of issues including how it fits into the broader regulatory environment, how it is used and what its consequences may be. Specific issues that may need to be considered include:

- a potential lack of government justification and risk assessment — at times, governments may fail to justify their chosen course of action and not undertake sufficient risk assessment;
- "backdoor" regulation — inappropriate adoption and use of quasi-regulation may give too much discretion to regulators;
- regulatory "creep" — what starts out as self-regulation can become widely accepted practice, gain an imprimatur from a government agency, and then become embodied in a quasi-regulatory arrangement (and may become 'black letter law');
- minimum acceptable or best practice? — best practice may impose a significantly higher compliance burden than would be justified by the principle that mandatory regulation should be the minimum necessary to achieve the set objectives;
- uncertainty and litigation — performance-based regulation provides flexibility as to how businesses can meet the set objectives yet small businesses may not have the resources to operate under such conditions and prefer the certainty of a prescribed set of rules;
- confusion — the status and enforceability of quasi-regulation may be unclear;
- flexibility and costs — quasi-regulation may lead to higher costs for industry compared to explicit regulation because it requires substantial industry involvement;
- potential advantages of quasi-regulation — compared with explicit regulation, quasi-regulation can encourage a collaborative approach, be more amenable to innovative ways of achieving objectives and avoid the formality and inscrutability of much legislation.

Sources: Commonwealth Interdepartmental Committee on Quasi-regulation (1997); ORR (2001).

The EMS discussion paper and the role of governments

The potential costs of government involvement in facilitating the adoption of EMSs in agriculture, and the uncertainty about the outcomes, appear to have been downplayed in the discussion paper. It is still too early to tell the extent to which government involvement is necessary or if it will provide net benefits to the community. This has implications for the development of the proposed framework and research into the efficiency and effectiveness of EMSs in agriculture.

The EMS discussion paper focuses largely on the role of EMSs as a 'business tool' rather than as a 'policy tool'. The arguments for doing so are not well documented in the paper. Downplaying the potential roles of EMSs as policy tools risks missing potential applications for EMSs in Australian agriculture. These potential applications should be examined more comprehensively (also see section 4).

Criteria for assessing the use of any policy approach to encourage the adoption of EMS, or to use EMSs as a policy tool, should include economic efficiency, equity, and administrative and legal feasibility. Options for facilitating EMS adoption should not only be compared to each other, but also against other non-EMS government activities as part of an integrated mix of policy instruments.

If it can be demonstrated that net public benefits are gained from EMS adoption, there may be justification for government involvement in facilitating the adoption of EMSs in agriculture. This relies on net benefits with government involvement being greater than net benefits without government involvement.

There is a risk that government involvement may lead to inappropriate use of EMSs — for example, to unduly prescribe and control farm management activities. Prescriptive control of inputs or processes can reduce flexibility and hinder the development of innovative and cost-effective responses.

A further risk is that some businesses or organisations may promote government involvement with EMSs for their own advantage or to burden competitors with unwarranted restrictions — governments will need to safeguard against this type of behaviour.

Any government policies promoting the adoption of EMSs in agriculture will need to be periodically reviewed, and adjustments made as research reveals more about the particular contribution EMSs make to agricultural productivity and/or environmental management. This needs to be built in at the start.

Is a national framework required?

Another key policy question is whether or not governments require a national framework for the adoption of EMSs in agriculture. This question can be asked at two levels: is there a need for a national framework to guide policy development (as the EMS discussion paper as a whole develops); and is there a need for a template to guide the private sector development of EMSs (as table 1 in the EMS discussion paper develops).

National frameworks are often established by governments to assist policy development, implementation and review. In general, the aim is to provide greater consistency and transparency in policy making, and improve policy outcomes — particularly when several jurisdictions are involved. General agreement on the principles and rules to guide policy action can often save considerable time and resources as policy decisions at different scales are made. They can also help avoid poor decisions. For example, see the *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies* (COAG 1997) or the *Guide to Regulation* (ORR 1998).

In a broad sense, a national framework for EMSs can create an opportunity to establish the parameters for appropriate policy making in this area, and bring some coordination between jurisdictions and different policy approaches. The use of EMSs in agriculture will extend across different jurisdictions. At this level, the EMS discussion paper provides a potentially useful draft framework from which government policy can be developed. That said, certain aspects of the framework appear inappropriate for that purpose and/or inconsistent (see below).

National frameworks can also be used to help coordinate the inputs and activities of the private sector in progressing EMSs. At this level, national frameworks can provide a reference point for EMS development and information sharing. However, how far governments go in assisting and helping to coordinate EMS development raises significant questions.

Proposing templates or processes for EMSs may be justified if there are public good benefits which would otherwise be left out, such as the benefits of biodiversity conservation. For example, the Victorian Department of Natural Resources and Environment's discussion paper on incorporating biodiversity into EMSs for Victorian agriculture raises a number of relevant issues in this context (NRE 2001). Encouraging the incorporation of catchment and national scale priorities into farm or industry scale EMSs may also be useful.

However, questions remain as to why industry bodies would not be best positioned to lead the development of EMS templates. Government input could be limited to

support the development of EMSs which provide public good benefits that might otherwise have been underemphasised, or to provide information on other government programs and objectives to maximise synergies and consistencies. The template in table 1 of the EMS discussion paper may provide some general educational benefit, but further work on it may be best led by industry. This would be consistent with the principle argued in the EMS discussion paper that industry should lead EMS adoption. The EMS Working Group could consider contributing input as requested or where market failures would limit the usefulness of purely private sector driven EMSs.

An assessment of particular areas of the proposed framework

The EMS discussion paper covers a number of areas related to the adoption of EMSs in agriculture. This section discusses three particular areas relating to the proposed framework: the aim, criteria for government involvement, and the underlying principles.

The aim of the framework

The EMS discussion paper does not clearly state what the primary aim of the framework is, and different aims appear to be given in different sections of the discussion paper. For example:

> … A major aim of this framework for EMSs is to consider mechanisms that will create linkages between the many processes already in train to achieve environmental and competitiveness outcomes for agriculture. (EMS Working Group 2001, p. 13)
>
> The rationale for developing a framework for EMSs in agriculture is to provide a national context within which existing industry programs and growing interest in EMSs can be harnessed to best advantage to improve management and contribute to both market and environmental outcomes across industries and regions. … (EMS Working Group 2001, p. 18)
>
> The proposed framework aims to provide a context within which to improve the environmental management of agriculture at farm, industry, catchment, regional, State and national scales. Other aims are:
>
> - to inform industry and landholder initiatives and ensure they contribute to achieving environmental objectives set at regional and catchment scales;
> - to ensure a coordinated approach to EMSs that reduces duplication;
> - to maximise the benefits to landholders;
> - to facilitate the voluntary uptake of EMSs; and
> - to encourage the development of EMSs for Australian agriculture in a consistent manner. (EMS Working Group 2001, p. 18)

> … Essentially the aim of the framework is to act as a bridge between on-farm environmental management systems and the emerging initiatives for managing and reporting on natural resource management at various scales. … (EMS Working Group 2001, p. 19)

Greater clarity and distinction between the aims of the EMS discussion paper as a whole, and the guidelines for EMS templates, would improve the EMS discussion paper. The framework should define desired outcomes from the use of EMSs in agriculture more clearly, with appropriate performance indicators and targets where any government involvement or incentives are proposed.

Criteria for government involvement

The EMS discussion paper also identifies a series of criteria for whether government involvement in EMSs is appropriate. These are generally sound, and cover such issues as whether there is market failure, do public benefits exceed public costs and is the proposed option cost effective. These are consistent with good principles for policy making established in various government documents (for example, see ORR 1998).

Underlying principles

The EMS discussion paper proposes a series of principles for the adoption of EMSs in agriculture and to underpin the framework, including that EMSs:

- be voluntary and industry and/or community led;
- demonstrate links between competitiveness and natural resource management objectives;
- be simple, cost effective, user-friendly, able to be phased in at any level and provide clear advantages to the adopting enterprise;
- be adaptable and provide for continuous improvement; and
- be consistent with existing internationally recognised systems (such as ISO 14001, EUREP GAP protocol) and be capable of independent audit. (EMS Working Group 2001, p. 16-17)

These principles are difficult to contest, however, several inconsistencies within the EMS discussion paper can be identified. For example, the EMS discussion paper emphasises a voluntary and industry-led approach while at the same time emphasising government involvement and the potential use of a range of incentives. This would appear to contradict the principle that EMSs in agriculture be voluntary and industry and/or community led.

4 Proposed limitations on government involvement with EMS

The EMS discussion paper identifies a number of areas where governments should not be involved with EMSs in agriculture:

> It would not be desirable, for example, for governments to:
>
> - establish EMSs in farming as a legislative, or regulatory, requirement;
> - require the EMS as a mandatory condition of land use;
> - require EMSs as a condition of materials use, for example of farm chemicals or fertilisers; and
> - audit farm EMSs, provide personnel to audit EMSs, or accredit certification schemes. (EMS Working Group 2001, p. 33)

It is not clear from the EMS discussion paper why this series of limitations has been proposed as there is limited analysis or substantiation to support the limitations. The potential use of EMSs should be carefully considered and not be arbitrarily excluded from the national framework.

The use of EMSs in agriculture and potential outcomes from the use of EMSs in agriculture may be unduly restricted by the proposed limitations. As identified in section 3, there are many different policy approaches to the use of EMSs in agriculture, for example, voluntary and mandatory approaches can be used.

Some State Environmental Protection Agencies are using EMSs in conjunction with industry-developed codes of compliance that are approved by the relevant Minister (for example, Queensland). This could be extended to the agricultural sector. There is also potential for EMSs to complement and/or replace native wildlife regulatory frameworks and licensing systems. For example, existing requirements for different wildlife licences for taking, keeping, displaying and moving native wildlife could be replaced by an EMS that covers general procedures and standards for environmental management.

Questions can also be raised as to the proposed limitations of government involvement in certification and labelling schemes. In principle, government involvement in such schemes would need to be justified by a demonstrable failure of markets to provide adequate signals of EMS quality, and the expectation of greater benefits than costs from any involvement. In several areas outside EMS, governments have judged that their involvement in certification is justified. Examples include the Australian Quarantine Inspection Service (AQIS) Certification Assurance Scheme for meat exports, and AQIS's auditing of organic

industry organisations against the requirements of the National Standard for Organic and Biodynamic Produce.

In the case of EMSs, potential 'congestion externalities' may result from the development and use of many different EMSs. This can mean that the benefits of EMSs are eroded as new systems add complexity and confusion for producers and consumers. If consumer choices are being significantly impeded, or opportunities to improve environmental outcomes by influencing firm behaviour are being lost, this may suggest governments (or third parties) consider roles in streamlining or certifying EMSs (see Jones and Lansdell 2000). Governments may also need to certify EMSs if they form part of a government's regulatory regime (see section 3).

Given that there are independent third party certifying organisations which could address some of the identified concerns, and that governments may wish to avoid potential liability problems, governments may prefer to support other organisations undertaking certification services. Government input into developing voluntary codes of practice covering the labelling of products made using EMSs may therefore be a more useful starting point.

5 The use of incentives to facilitate EMS adoption

The EMS discussion paper specifically identifies that:

> Governments could provide incentives to support voluntary and industry-led adoption of EMS through a range of programs. … (EMS Working Group 2001, p. 29)

Various incentive options and examples are then identified in the EMS discussion paper including:

- using government investment under the National Action Plan for Salinity and Water Quality to assist or encourage individual landholders to adopt EMS that lead to appropriate farm management, and collectively contribute to regional catchment targets;
- using EMS as a criterion for allocating publicly-funded stewardship payments;
- governments providing information to producers on opportunities to use eco-labelling and certification; and
- governments implementing preferred supplier schemes that give preference to products supplied by farmers able to demonstrate environmental management.

The connection between EMSs and incentives was further reinforced in November 2001 when the Commonwealth Minister for Agriculture, Fisheries and Forestry announced:

> To reinforce Australia's deserved reputation as a supplier of quality, environmentally friendly products, the Coalition will support the adoption of voluntary, accredited Environmental Management Systems (EMS) on Australian farms. … The Coalition will provide a maximum $3,000 tax rebate to eligible farmers to develop and apply an accredited EMS for their properties. Pilot projects will be funded in up to 15 regions. (Truss 2001, p. 1)

As identified in section 3, there are two broad questions relating to the rationale for governments to use incentives to promote the uptake of EMSs in agriculture:

- whether there are in-principle grounds for the use of incentives by governments to promote EMSs that lead to net benefits for the community as a whole; and
- whether a particular incentive — for example, a stewardship grant, a tax rebate, or the supply of information — is the most appropriate form of assistance.

If there are grounds for governments to provide incentives for the adoption of EMSs in agriculture, then the most appropriate form of assistance will need to be evaluated. Several issues need to be considered including:

- the efficiency of government involvement and the targeting of incentives — there may be a need to distinguish between incentives to adopt any EMS and incentives to adopt specific EMSs which, because of design and application features, better support public good goals. Accreditation may be a mechanism for determining eligibility for incentives. However, administrative costs and simplicity need to be balanced against the benefits of more refined targeting;
- the effectiveness of implementation — given that organisations are likely to implement EMSs with different degrees of effectiveness and public benefit, incentives may need to be made contingent on demonstrable environmental improvement, and not merely on the basis that an organisation has an EMS in place. This is important as EMSs are often systems-based and adoption does not necessarily equate to improved environmental performance. There is little public benefit in a firm having an EMS but not implementing it or not implementing it properly.
- appropriate monitoring and evaluation —ongoing assessment is needed as to whether the benefits to the community as a whole outweigh the costs of the incentive. A central part of this assessment would be the contribution that the adoption of EMSs in the agricultural sector may make to improved environmental management and agricultural productivity. This will require the development of performance indicators and assessment methodologies capable of assessing EMS performance over time (see Lattimore et al. 1998 for further elaboration of good program design principles.)

There may be a case for government involvement with the provision of relevant information on EMSs in agriculture. It is most likely that the greatest public benefits will come from governments providing generic information that will assist organisations and industries. Government support of pilot and demonstration projects to better understand how businesses and governments can use EMSs may, for example, be useful to overcome information and research deficiencies. Such approaches can be more effective at achieving policy goals than open-ended subsidy programs. In all cases, the costs and benefits would need to be clearly identified and considered.

6 Conclusion

The use of EMSs in agriculture is being promoted by many sectors, agencies and groups. EMSs may contribute to improved agricultural productivity and/or environmental management, although the evidence to date is limited. The potential contribution of environmental management systems in agriculture will depend not only on good design, but also good implementation, monitoring and review.

Government involvement in facilitating the adoption of EMSs in agriculture will need to be carefully examined and assessed because of the potential costs of government action and uncertainty about the outcomes. Further clarification of the various roles and functions that EMSs can play in agriculture could help open up a more comprehensive assessment of the range of options available to government in this area. Just as government actions need to be informed by a comprehensive assessment of the costs and benefits of actions, proposals to limit opportunities for government to use policy instruments such as EMSs also need rigorous assessment.

Appendix A

Box A.1 **Environmental management systems**

An Environmental Management System (EMS) is a generic term used to describe any systematic management approach used by a business or organisation to manage its impacts on the environment on a continuous basis.

An EMS provides a management framework that achieves continuous improvement through a 'plan, do, check, review' cycle. Environmental impacts and legal responsibilities are identified and a structured approach is taken to review and bring improvement. An EMS can be externally audited and may be certified to the international standard, ISO 14001.

An EMS normally encompasses:

- a review of the significant environmental effects over which a business or organisation has control and influence;
- the implementation of an environmental policy and programs, including targets to deal with significant effects;
- the establishment of a management system to internalise controls; and
- periodic audits of these stages.

An EMS can provide a management framework within which a Best Management Practice (BMP) can be integrated and/or a code of practice upheld. EMSs differ from codes of practice or best management practices in a number of ways:

- BMPs are procedures and management guidelines that can be used at local, regional and national levels and may provide targets for developing an EMS, compared with merely 'management' guidelines. BMPs can be static or can be periodically reviewed and updated.
- Codes of practice can be developed and adopted by an industry and promoted amongst industry members. A code may incorporate BMPs or be targeted at a lower level of performance.

Sources: AFFA (2002); EMS Working Group (2001) and OECD (1998).

Appendix B

Box B.1 **EMS Working Group discussion paper**

The framework outlined in the discussion paper 'aims to facilitate EMS adoption across industries and regions, and to integrate activity across industry sectors'. The discussion paper contains sections on:

- what is an EMS and how does it work;
- why a farm manager, regional group, or industry group may want to adopt an EMS;
- linkages between EMS and other on-farm environmental activities, record-keeping and regional/catchment planning processes;
- principles to guide the adoption of EMS in agriculture and underpin the proposed framework;
- the proposed framework including scope, application of the framework at different scales, and market and supply chain features of EMS;
- how governments can help, including outcomes sought by governments from EMS, potential areas where governments could play a role, incentives, improved communication and where governments should not be involved.

The discussion paper aims to seek community and industry views on:

- the value of and interest in EMS in agriculture;
- the framework proposed for the further development and coordination of EMS in agriculture, at various scales, including the farm, regional and industry scales; and
- appropriate roles for government and industry in facilitating EMS adoption.

The framework is also proposed to assist and enhance existing industry initiatives on EMS in agriculture. The closing date for submissions is 31 March 2002.

Source: EMS Working Group (2001).

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