

**ON-FARM  
ENVIRONMENTAL  
MANAGEMENT  
SYSTEMS:**

**AN EVALUATION  
OF ISO 14 000**

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*And what is good, Phaedrus,*

*And what is not good -*

*Need we ask anyone to tell us these things?*

Robert M. Pirsig

Zen and the Art of Motorcycle Maintenance

1974

## Summary

Recent media reports suggest that farmers should target market opportunities by adding substance and accountability to New Zealand's "clean green" image and adopting recognised environmental performance standards.

ISO 14000 is an international accreditation standard recognising responsible environmental management.

By examining the standard itself, reviewing relevant legislation and exploring market concerns, this report evaluates ISO 14000 in terms of its suitability for on-farm use.

The report finds that ISO 14000 is not an appropriate environmental standard for New Zealand's primary producers to adopt.

- It is primarily an administrative system, with associated high costs.
- It duplicates some statutory functions and may challenge others.
- There appears to be no demonstrated market demand for ISO 14000 accreditation on farms.

Environmental responsibility is important to consumers, however, and some overseas buyers are promoting their own environmental standards.

The report recommends that farmers strengthen their ties with buyers prepared to reward environmental performance, and welcome those who come over here to perform their own on-farm audits.

# Contents

	<b>Page</b>
<b>1.0 Introduction</b>	<b>1</b>
<b>2.0 Resource Management Act</b>	<b>3</b>
<b>3.0 International Trade Regulations</b>	<b>5</b>
<b>4.0 ISO 14000 Environmental Management Standards</b>	<b>6</b>
<b>4.1 Profile of Requirements</b>	<b>6</b>
<b>4.2 Costs of ISO 14000 Accreditation</b>	<b>10</b>
<b>4.3 Potential Benefits</b>	<b>13</b>
<b>5.0 Market Requirements</b>	<b>14</b>
<b>6.0 Evaluation of ISO 14000</b>	<b>16</b>
<b>7.0 Conclusions and Recommendations</b>	<b>19</b>

## 1.0 Introduction

Commitment to the environment, and to the preservation of environmental resources, has long been an integral part of New Zealand's agriculture industry. Farmers recognise the importance of having, for example, stable soils and clean water supplies, and have maintained these resources largely intact over many generations.

Farmer commitment to the environment has been voluntary, self-regulating and very much a matter of exercising personal choice.

Following enactment of the Resource Management Act in 1991 however, and the conclusion of the GATT rounds in 1994, both the domestic legislative background and the international trade regulations affecting New Zealand's agriculture industry have changed.

"The GATT rounds may have opened up trade, but the rules are now being set by quality and environmental factors," says Terry Donaldson of MAF Quality Management, Christchurch (Southerner 2/97). "Overseas requirements are illustrated by the British supermarket chain, Sainsbury, which stipulates that meat comes from certified farms on which animals are happy and well looked after."

Parliamentary Commissioner for the Environment, Dr Morgan Williams, agrees, citing another British supermarket giant, Tesco, who's directors identify personal health (food safety), the environment and animal welfare as the three main areas of concern of an increasingly discerning clientele (Southerner 2/97).

Dr Williams highlights a changing world scene where food and fibre requirements are now dictated by wants, not needs. "Capturing the gains from this trend will require the agricultural community to recognise environmental indicators as quality attributes with marketable value," says Dr Williams. "There is a strong international trend towards environmental responsibility."

He does not believe New Zealand can long maintain its "clean green" image by relying on hearsay. Already New Zealand diplomats have been challenged about our image by their European counterparts. Dr Williams urges farmers to target opportunities by focusing on improving on-farm ecological efficiency and developing environmental quality assurance programmes to meet local and international needs. "If you are in the game of farming and you do not consider your end customer, you are now in the wrong game," he says.

On-farm environmental management systems and accredited quality assurance programmes are a new concept for many New Zealand farmers. External auditing may be a daunting prospect for some, although for many it will simply be a matter of fine-tuning their existing practices, perhaps with a little more attention to the documentation.

ISO 14000 is probably the best-known accreditation standard for environmental management, and the purpose of this report is to evaluate whether this is an appropriate on-farm standard for New Zealand's producers to adopt.

Before examining the concepts, costs and benefits of ISO 14000, the report first takes a look at the relevant legislation and highlights some of the requirements of New Zealand's Resource Management Act and the international trade regulations.

Next, the ISO 14000 standard itself is profiled, including its requirements, costs and benefits. An assessment of market environmental concerns then follows, which looks at environmentally based purchasing trends in overseas countries.

Finally, all this information is brought together and an evaluation of ISO 14000 is made. The report closes with conclusions and recommendations, which restate the salient points.

## **2.0 Resource Management Act**

The purpose of the Resource Management Act is “to promote the sustainable management of natural and physical resources” (Section 5(1)).

Section 5(2) of the Act defines “sustainable management” to mean:

“managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well being and for their health and safety while –

- (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
- (b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and
- (c) Avoiding, remedying or mitigating any adverse effects of activities on the environment.”

Section 6 outlines matters of national importance to be recognised and provided for by those exercising functions and powers under the Act, and Section 7 outlines “other matters” which decision makers need to have particular regard to.

Responsibility for administering the Resource Management Act rests mainly with the Minister for the Environment and, at a regional level, with the regional and district councils (Part 4, RMA).

Decision-making, environmental monitoring and compliance functions are undertaken primarily by local authorities, with provision for matters that cannot be resolved at this level to be decided either by the Environment Court (Part 11, RMA), or by the Minister for the Environment (Section 140).

Once a matter has been determined by the Environment Court, it joins an increasing quantity of information known as “Case Law”, and becomes a source of reference against which any subsequent interpretation of the Resource Management Act may be set.

In this way, Section 5 of the Act is interpreted to require a balance to be struck between providing for the social and economic well being of people and communities, and addressing environmental concerns.

The Act establishes a hierarchy of functions, powers and duties, including “state of the environment” monitoring (Section 35(2)(a)), which is the responsibility of local authorities.

Costs of implementation of the Act are largely met by rate and tax revenue, with a user pays system in place to cover specific costs.



### **3.0 International Trade Regulations**

The World Trade Organisation / General Agreement on Tariff and Trade (WTO/ GATT) regulations prohibit the restriction of international trade on the basis of protectionism and incorporate strongly worded “free trade” principles, designed to prevent arbitrary discrimination.

Attempts to use environmental requirements as barriers to trade have thus prompted concerns in the international community that the free trade principles of the WTO/ GATT regulations are being flaunted.

Confusion arises, however, because the regulations technically apply only to States as subjects of international law. The status of so-called “voluntary” environmental programmes carried out by private organisations is unclear.

In the absence of any ruling from the WTO, private environmental programmes appear to be proliferating. Ostensibly these serve to provide consumer choice, as well as to address environmental concerns, but potentially they exist also as a means for importers to exploit a loophole in the current international trade regulations. After all, most trade is carried out between private organisations rather than between countries.

Technically then, the situation may be in conflict with the WTO/GATT regulations. To the extent that environmental concerns are an expression of market demand, however, it would be a difficult situation to reverse.

## **4.0 ISO 14000 Environmental Management Standards**

ISO 14000 is an internationally recognised environmental management accreditation standard, administered by the International Organisation for Standardisation.

### **4.1 Profile of Requirements**

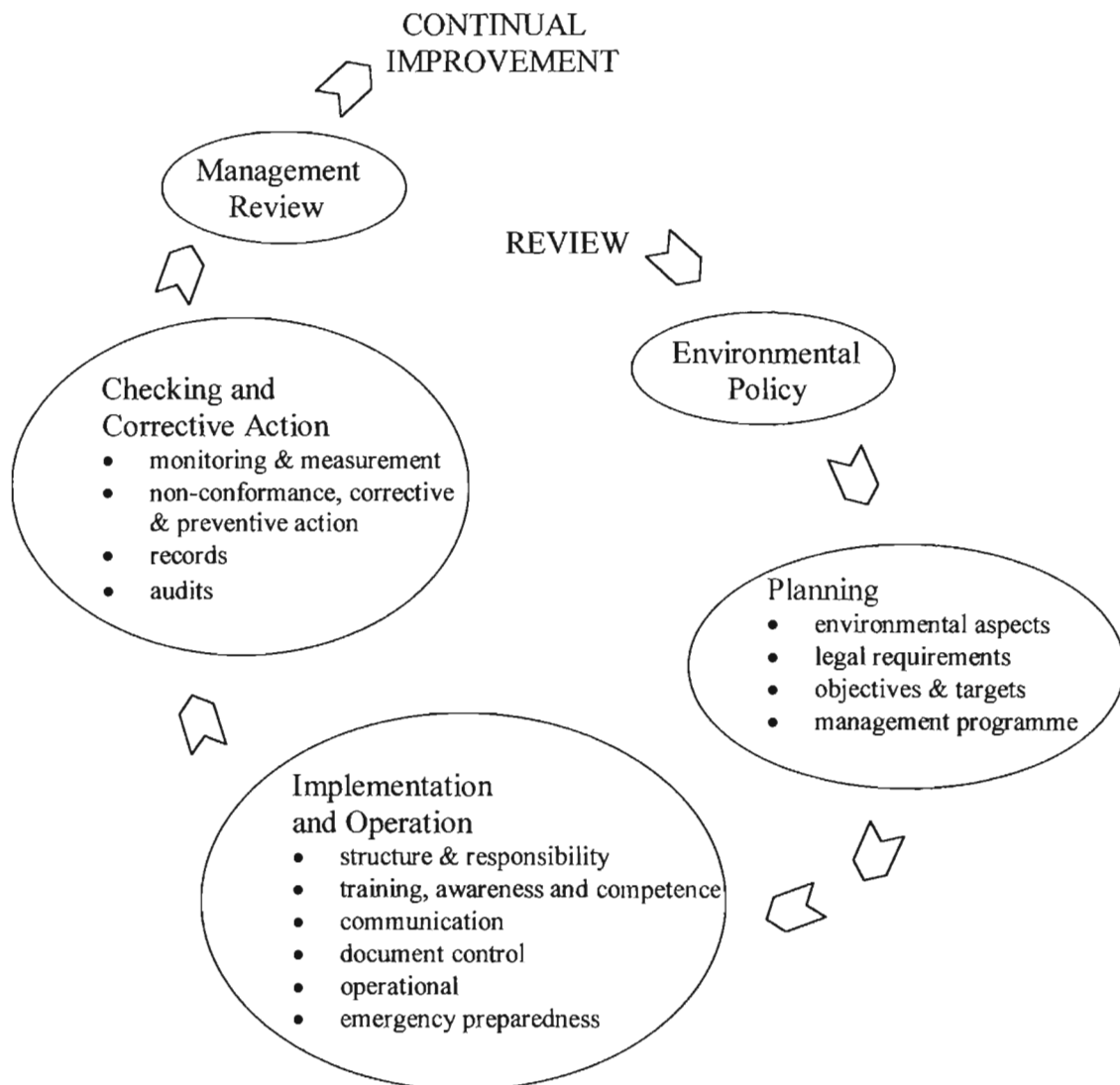
Published in November 1996, ISO 14000 is based on a “Plan – Do – Check – Review” cycle of environmental management.

Incremental gains made at each stage in the process lead to ongoing improvements in environmental performance, and it is this commitment to continual improvement that is central to the ISO 14000 philosophy.

Figure 1, reproduced from the ISO 14001 “Specifications and Guidance for Use” manual, illustrates the accreditation requirements.

Accreditation begins with the formulation of an environmental policy, which needs to include specific commitments to complying with the law, making continual improvements and preventing pollution. It has to be appropriate to the environmental impacts of the organisation and must provide a framework for environmental objectives and targets to be set and reviewed. The policy must be written down, communicated and implemented throughout the organisation and must also be publicly available.

Figure 1. ISO 14000 Accreditation Model.



The planning requirements of ISO 14000 accreditation include procedures to identify the effects that the organisation's activities have on the environment, and the scale and significance of these effects.

Legal and other obligations, such as industry codes of practice, must also be considered.

The organisation must then set its own environmental objectives and targets, taking into account legal and other obligations, the significant environmental effects of their activities, the views of interested parties, and practical business requirements.

These objectives and targets must be written down and kept up to date.

A formal, documented management programme is also required and this will set out how the objectives and targets are to be achieved.

Implementation of the environmental management programme requires that the organisation identify a management representative with overall responsibility for the environmental management system.

Sufficient resources must be provided for implementation of the system, and people doing activities that could affect the environment must be competent.

Training needs must be identified and “a high level of basic environmental training” provided throughout the organisation.

Procedures are required for communicating internally and externally about the organisation’s environmental management system, and about the environmental aspects of its activities.

There must be formal procedures for producing and controlling all documents involved in the environmental management system.

Operations and activities with significant environmental effects must be closely managed.

Potential emergency situations must be identified, and formal procedures are required for responding to them. These procedures must be tested and reviewed, and should focus on avoiding or mitigating adverse effects.

Operational processes, progress towards objectives and targets, and compliance with the law must all be regularly monitored and recorded.

Non-conformance, corrective and preventive actions must also be addressed.

Procedures need to cover how problems are to be investigated, resolved and prevented from recurring. Non-conformance incidents must be documented and assessed.

Auditing is central to any accreditation programme, and regular internal audits need to be performed. All elements of the environmental management system must be included and addressed.

The suitability and effectiveness of the whole environmental management system must also be reviewed and any opportunity for improved performance identified.

## **4.2 Costs of ISO 14000 Accreditation**

The costs of accreditation begin with the purchase of a set of ISO 14000 standards, which are available from any of the four certified accreditation bodies in New Zealand. The largest of these accreditation bodies is Telarc New Zealand and, for the purpose of this cost analysis, all costs quoted exclude GST, and are as supplied by Telarc.

The ISO “Specifications and Guidance for Use” manual (ISO 14001) costs \$36.00.

The “General Guidelines on Principles, Systems and Supporting Techniques” manual (ISO 14004 - recommended to help people get started on the path to ISO 14001 accreditation) costs another \$50.00. Then there are three manuals containing guidelines for environmental auditing.

The full set of five ISO 14000 Environmental Management Standards costs \$128.00.

There is an initial application fee for organisations seeking ISO accreditation, which is \$800.00. A further \$800.00 is payable on receiving accreditation, and there is an annual registration fee of another \$800.00, due for payment on each anniversary of the date of initial accreditation.

Becoming accredited can be a lengthy process and will usually involve additional costs to the organisation in terms of time and resources committed to developing the necessary environmental policy, objectives, targets and management guidelines.

Depending on priorities and expertise, consultants may be hired to prepare the necessary documentation and to co-ordinate implementation of the system.

Multi-day training courses are also available to those seeking to learn the skills needed to develop and implement an accredited environmental management system, and to meet the ISO 14000 requirements for “a high level of basic environmental training”.

The New Zealand Quality College (a division of Telarc) offers a three-day course on Environmental Management Skills, based in Auckland. The course costs \$840.00 and gives participants an introduction to:

- world trends in environmental management;
- the requirements of ISO 14001;
- requirements under the Resource Management Act;
- undertaking an initial review;
- developing and implementing an environmental management system; and
- understanding and preparing for the environmental management system certification process.

The certification process itself requires an organisation’s ISO 14000 environmental management system to be assessed by the representatives of an accreditation body, such as Telarc, to ascertain that it does meet the standards and is being implemented effectively.

The first phase of the certification process is a pre-assessment visit, which typically takes one day to complete. The second phase is a review of the documents that describe the environmental management system, and the third phase is an on-site visit.

This takes place after the environmental management system has been fully implemented, to check that it is working correctly.

Costs of visits and other assessment activities are based on an hourly rate of \$125.00, plus direct expenses. That's \$1000.00 for an eight-hour day, of which three days, or \$3000.00, will typically be involved. Travel and other expenses are charged at cost.

Prior to certification, an application will also be peer reviewed by one or more members of Telarc's independent Certified Environmental Management Systems Peer Review Panel, who will each make their own independent recommendation on the award of certification.

As part of the ISO 14000 accreditation programme, Telarc also carry out a monitoring and review programme consisting of review visits to the accredited organisation every six months and a complete reassessment every three years.

Again, costs of reassessment and review are charged at \$125.00 per hour, plus direct costs, and this is on top of the annual registration fee of \$800.00.

Financial commitment to ISO 14000 is thus very much a significant and ongoing expense for any organisation which aspires to gain accreditation.



### **4.3 Potential Benefits**

The main benefit of accreditation to ISO 14000 appears to be the degree of recognition which it affords to an accredited organisation for its commitment to responsible environmental management.

According to Telarc, the certificate of registration, “is a tangible reward for management and staff who have worked hard to ensure your business is environmentally responsible.” The award can be included on business stationery and promotional material, and is, “powerful proof which you can use to gain a valuable marketing advantage.”

It is one thing to subscribe to an internationally recognised accreditation scheme, however, and quite another to expect consumers to reward those who choose to do so.

Before committing to ISO 14000, producers will need reassurance from the market that such verification of their environmental practices will, in fact, be recognised and rewarded by the end consumer.

## **5.0 Market Requirements**

Returning to the UK supermarkets, whose requirements were cited in the introduction to this report, the New Zealand Trade Development Board, Tradenz, reports that Sainsbury, Tesco and Marks and Spencer all prefer to promote their own environmental standards rather than to recognise ISO 14000 (M. Gould, pers. comm.).

These retailers are currently developing their own “partnership” arrangements with preferred suppliers, which include agreements on environmental, animal welfare and food safety issues. The supermarkets themselves audit these standards, which ensures that the costs of the audits are passed on to end consumers.

Sainsbury, for example, have over 9000 beef, lamb and pork production units covered by their “Partnership in Livestock” programme in the UK and Eire, and are now seeking to extend the principles of their programme to New Zealand lamb suppliers (Sainsbury 1996 Environment Report). The programme involves having trained Sainsbury personnel visit all abattoirs, and randomly selected farms, to monitor that the agreed standards are being maintained.

Marks and Spencer and Tesco supermarkets run similar partnership programmes, and it is expected that UK retail representatives will be auditing on-farm in New Zealand within the next three to four years (M. Gould, pers. comm.).

In other overseas markets, only the European Union appears interested in promoting ISO 14000 accreditation. North American and Asian countries do not officially recognise the ISO standards, and current Tradenz advice is that New Zealand

producers need not adopt this expensive international environmental standard to meet market requirements.

Tradenz does recommend that farmers look critically at their on-farm practices, however, and consider how they might measure up to potential market demands. They recommend forging stronger ties throughout the marketing chain, so that producers can respond more effectively to the evolving expectations of consumers.

Such expectations, and environmental sensitivities, extend far beyond the farm gate. Increasingly, entire product life-cycles are coming under scrutiny, with consumers being especially concerned about the amounts of non-renewable resources being used up in transporting food over large distances (Sainsbury 1996 Environment Report).

Discrimination against suppliers in distant countries can only disadvantage New Zealand's agricultural export industry, and another difficulty is that most Western producers receive generous grants for adopting environmentally sound management practices. New Zealand producers receive no such incentives.

Given these inequalities, it becomes imperative that New Zealand producers prove to their markets that they can hold their own in terms of on-farm environmental responsibility. Failure to verify our "clean green" image might mean that New Zealand produce is, in the future, discounted in the market place.

## **6.0 Evaluation of ISO 14000**

The ISO 14000 model of “Plan – Do – Check – Review” is certainly a robust model for any on-farm environmental management standard to use.

Its essential elements, an environmental policy, a series of specific environmental objectives and targets, and a parallel series of management guidelines, are sound business tools.

Its focus on a philosophy of continuing improvement, rather than on some arbitrary pass-fail threshold, is also an appropriate incentive to farmers, to encourage rather than discourage them to meet the challenge of environmental responsibility towards the land.

The biggest drawback of ISO 14000 accreditation is the cost: the financial commitment is simply too high for most individual farmers to contemplate.

In terms of domestic environmental legislation, the Resource Management Act requires that environmental concerns be balanced with social and economic considerations. It also provides for local authorities to monitor the state of the environment and for this to be funded via existing taxes and rates.

To the extent that external environmental accreditation may duplicate local authority effort, the need for ISO 14000 in New Zealand’s primary production industry is open to question. In terms of the cost of accreditation, it may even compromise economic well being.

The main reason for imposing these high costs, of course, is that they have to support the accreditation industry itself, a whole additional industry tier which is external to and independent of the direct market forces of supply and demand.

The accreditation industry will benefit from farmer uptake of ISO 14000, but it is the market that determines whether accreditation will translate into tangible, financial rewards for accredited farmers.

Certainty of consumer reward usually requires that a scheme is market driven rather than producer driven. The outcomes of adopting ISO 14000 as a producer initiative are thus inherently uncertain.

Of course there may be an advantage for those who adopt ISO 14000, if purchasers can be persuaded that they are receiving something worth paying extra for.

On the other hand, there may be no such advantage.

Alternatively, there may be financial benefits only for those who first adopt the standard. Then, as others follow suit, what was a market advantage may simply become a condition of market entry.

It is this uncertainty of outcome, combined with the relatively high costs of ISO 14000 entry and upkeep that conspires to make accreditation to this standard an expensive and unattractive initiative for those on the land.

In terms of the WTO/GATT trade regulations, States are prohibited from using environmental grounds as a basis for discriminating against imports from other countries, so there may be no real demand for environmental accreditation at all.

Private organisations are currently outside the influence of these regulations, however, and are free to impose whatever contractual obligations they choose. Technically, this situation may be in conflict with the intentions of GATT, but appears to be widely accepted and likely to endure. It is, after all, an expression of market demand.

Indeed, if organisations within the market chain are willing to come over here and perform valuable audits, why not make the most of the opportunity?

There may be a cost to producers in the form of customer loyalty, but the alternative could be a discounted price for a product nobody wants.

## **7.0 Conclusions and Recommendations**

There is no compelling reason for New Zealand producers to adopt the ISO 14000 environmental management standard.

- It is primarily an administrative system, with associated high costs.
- It duplicates some statutory functions and may challenge others.
- There appears to be no demonstrated market demand for ISO 14000 accreditation on farms.

Environmental responsibility is important to consumers, however, and New Zealand will need to maintain its “clean green” image in the face of increasing scrutiny.

Accordingly, this report recommends that farmers practice the highest standards of environmental management, capable of withstanding external audit. Producers should welcome overseas buyers who come over here to perform farm audits, and should seek to strengthen market ties with those who are prepared to reward environmentally responsible farm management.