

1.1 Background

In 1992, the Centre for Advanced Engineering (CAE) published *Our Waste: Our Responsibility* (CAE, 1992). This book, which became a much-used resource for waste practitioners in New Zealand, resulted from a major CAE project that involved over 120 people and included several international experts.

The book was very much a product of its time. Three of its four main parts covered the then primary areas of debate: what to do with hazardous waste, how to progress from dumps to engineered landfills, and how to prevent contamination of water supplies. The remaining part covered many new and emerging concepts that viewed wastes as resources and focused on the need to prevent, reduce, re-use and recycle them in that order of priority. The term that was used to describe the approaches within this hierarchy was ‘waste minimisation’.

This new publication arises out of a need to update the waste minimisation section (Part 2) of *Our Waste: Our Responsibility*, and is based on the CAE Resource Stewardship: Waste Minimisation (RS:WM) project, which was set up specifically for this purpose. It follows the earlier release, in April 2000, of *Management of Hazardous Waste* and *Landfill Guidelines*, Parts 3 and 4 respectively of the original book, and becomes a companion volume in the CAE series, now subtitled: *Towards a Sustainable New Zealand*. The project has been substantially funded by a grant from the Sustainable Management Fund with further contributions from local and regional councils. The sponsors are acknowledged in the front of this book.

The goal of the CAE RS:WM project is to advance environmental sustainability in NZ by sharing knowledge, experience and tools to improve waste minimisation practices and raise the level of resource stewardship. A strong motivation is the need to ensure that waste management practitioners have access to the latest information. Fulfilling this need is a fundamental part of the journey towards sustainability.

The need for information is also consistent with *The New Zealand Waste Strategy* (MfE/LGNZ, 2002). This document, prepared by the Ministry for the Environment (MfE) and released in March 2002, with its inclusive approach to both wastes and waste management options, has signalled that there is now widespread recognition of the need for a comprehensive, integrated approach to material and resource efficiency at every stage of production and consumption.

Over ten years have now passed since *Our Waste: Our Responsibility* was published by CAE and, to many people, waste minimisation has tended to become synonymous with the lower end of the hierarchy: i.e., re-use and recycling. Much has been achieved in New Zealand by the many groups that have focused on these activities, and it is important for this work to continue, but it is not enough.

Significant benefits lie in encouraging people (and organisations) to consider the comparative advantages of avoiding and minimising the generation of waste in the first place. This is considered a significant issue for New Zealand. The ability to use resources in the most efficient and sustainable manner lies at the very root of the problem, and provides a large part of the solution.

Quite apart from the fundamental underlying issues of sustainability, there is also the important

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fact that New Zealand trades heavily on its 'clean and green' image and cannot afford to place this image at risk. It is clear that, if the perception should change, it may do untold damage to the economy.

In the past decade since *Our Waste: Our Responsibility* was published there has been a growing appetite for change in the way the environment is managed, and this has largely been driven by:

- a change in the political context with respect to wastes of all kinds and waste minimisation;
- an increase in the use of instruments and tools to promote waste minimisation;
- an increase in activities of relevance to waste minimisation, particularly amongst non-governmental organisations (NGOs);
- research into the effectiveness of waste minimisation programmes; and more recently,
- pressure derived from the Kyoto Protocol concerning processes that emit gaseous waste.

These drivers are important because they reflect the context within which any further progress will occur. Context is important because it affects the receptiveness of society to change, and it influences the effectiveness of change programmes (e.g. Eero, Grendstad and Wollebak, 2001). Later chapters will discuss each of these drivers and their relevance to further progress.

Waste minimisation activities are an important part of New Zealand's journey towards sustainability. This book is about whether, how, and to what extent, these activities are really contributing towards this journey.

The book has been divided into three parts.

- Part One provides a background to waste minimisation in New Zealand; particularly how it relates to resource stewardship and an overview of the drivers mentioned above. These include: political context, instruments and tools, the role of non-government organisations, and the results of research into the effectiveness of waste minimisation programmes.
- Part Two provides an insight into the current status of waste minimisation and resource stewardship in New Zealand within seven industry sectors that form a major part of the New Zealand economy: dairy, meat, forestry, building, tourism, retail and plastics.
- Part Three provides a summary and discussion of the key findings, followed by conclusions and recommendations.

1.2 Why Resource Stewardship?

The term 'resource stewardship' has been used here because it is a fundamentally important facet of the drive towards the goal of a more sustainable future. Clearly, the processes that use resources and create waste have an important part to play in this journey. This section outlines how the term encapsulates the ultimate purpose of waste minimisation, and how it relates to other concepts and approaches.

Resource stewardship reflects recognition of the need to assume greater responsibility for resources. This requirement is implicit in the concept of sustainable development, i.e. the need for society to develop in a way that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCSD, 1987).

Resource stewardship is enshrined in the Resource Management Act 1991 (RMA), the principal purpose of which is to promote the sustainable management of natural and physical resources (s5). It is also implicit in the 'sustainability principles' of the Energy Efficiency and Conservation Act 2000 (EEC Act) (s6).

Resource stewardship is also consistent with the Maori concepts of *kaitiaki* and *kaitiakitanga*. The

NZ Waste Strategy defines *kaitiaki* as “guardians or stewards of resources who promote the integrity of the resource” and *kaitiakitanga* as “guardianship over the land and its resources”. In the RMA, *kaitiakitanga* is similarly defined as “the exercise of guardianship” which, “in relation to a resource, includes the ethic of stewardship based on the nature of the resource itself” (s2). The Maori view is very relevant. There is much that society, in general, can learn from these concepts and, in doing so, gain a better understanding of how people and nature are irrevocably intertwined.

Many times in the past decade, a new concept or approach has been promoted as the ‘one true way’ to achieve sustainability. This often has had more to do with the limited availability of funding for sustainability-related initiatives in New Zealand and the competition that it engenders, than the inherent superiority of any one concept or approach. Its effect, often, is to confuse many of those who would normally be in the target audience for sustainability initiatives, to shut down communication, to minimise the availability of resources, and to limit the learning that can occur when experiences are shared.

Care is thus required to avoid resource stewardship being seen as the next in a long line of concepts that have been applied to waste management over the past 10 - 20 years (e.g. see Figure 1.1). Within this context, resource stewardship could be touted as the new high point in a progression from ‘end-of-pipe’ types of approaches that focus on dealing with wastes once they are generated (e.g. re-directed disposal, treatment, remediation), to ‘up-the-pipe’ types of approaches that focus on dealing with the sources of waste (e.g. cleaner production, pollution prevention). Such a framework, however, would not be helpful.

The diagram in Figure 1.1 implies that initiatives lower down the list are inferior. This is unfair and unhelpful. There are many examples in New Zealand where people have worked hard to reduce the effects of wastes on the environment, and to reduce wastage by having resources removed from the waste stream and re-used or recycled. All of these are important roles that contribute in one way or another towards a more sustainable society.

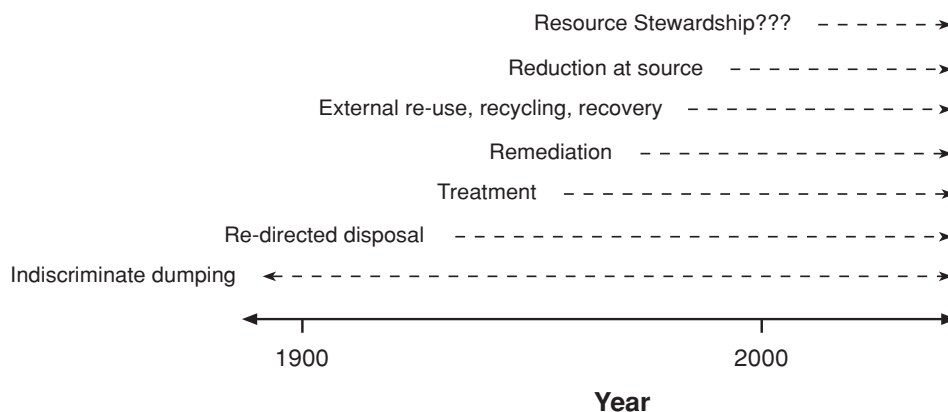


Figure 1.1: Resource stewardship presented as the latest in a succession of waste-related concepts and approaches

Bringing the term ‘resource stewardship’ into the waste management lexicon requires, for many people, a shift in the way they think about waste. It is unlike the other concepts that are identified in Figure 1.1, because it is heavily value-laden. Efforts to change from ‘end-of-pipe’ to ‘up-the-pipe’ approaches, represent a progression from total disregard or lack of responsibility for wastes and their effects, to acceptance of responsibility. In this respect, resource stewardship should not be viewed as the next in a long line of concepts or approaches (as presented in Figure 1.1), but rather the rationale behind and the ultimate aim of all the approaches (as presented in Figure 1.2).

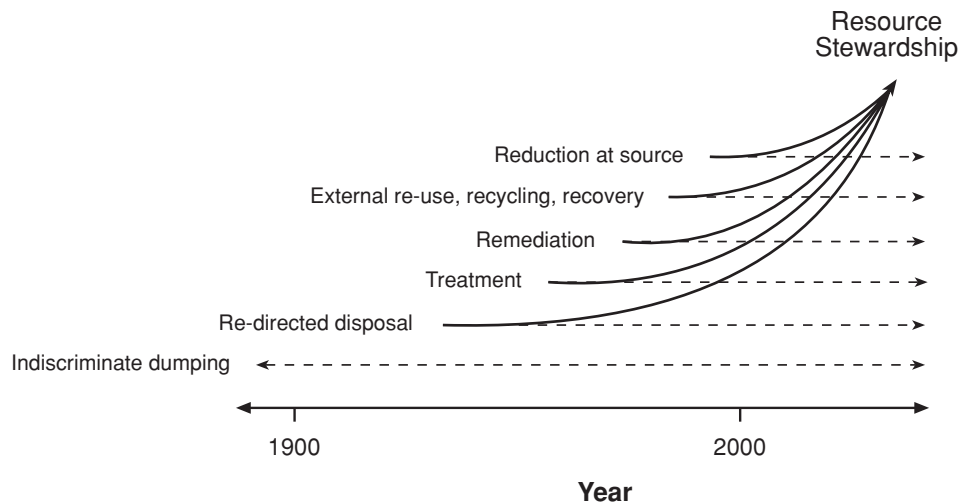


Figure 1.2: Resource stewardship presented as the ultimate aim of all concepts and approaches

As such, resource stewardship can provide an *integrating* mechanism for the waste management industry. The progression shown in Figure 1.1 occurred as a result of a sequence of people standing up and arguing for a switch to an alternative approach: from dumps to landfills, from landfills to recycling, from recycling to reduction at source, etc. One outcome of this was the ‘waste management hierarchy’, which has found its way into much of the rhetoric of the past decade (and even into law²).

The waste hierarchy was essentially based on the need to bring about a change in values. However, it tended to create something of an ‘us-and-them’ culture wherein the achievements in the ‘upper’ levels had more status than those in the ‘lower’ levels. An obvious example can be found in external recycling initiatives. They are ‘lower’ in the hierarchy, but they are often very successful in terms of public participation. They can also result (relatively easily) in what is essentially a huge switch in values: from one where wastes are simply dumped to one where they are viewed as resources worth conserving. The hierarchical approach not only de-values these types of initiatives, but de-values the often considerable passion that those who work towards them have for the environment.

The ultimate aim is to place greater focus on resource stewardship, which requires a shift in values from irresponsibility to responsibility, and to evaluate ANY initiatives in terms of the contribution they are making towards that shift, rather than their level within the hierarchy.

1.3 References

CAE, 1992. *Our Waste, Our Responsibility: Towards Sustainable Waste Management in New Zealand*, Centre for Advanced Engineering, University of Canterbury, Christchurch.

Eero, O, Grendstad, G and Wollebak, D, 2001. “Correlates of environmental behaviours: bringing back social context”, *Environment and Behaviour* 33: 181-208.

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RMA, 1991. New Zealand Resource Management Act, 1991

WCSD, 1987. *Our Common Future: Report of the World Commission on Sustainable Development*, Oxford University Press, Oxford.

² The Local Government Act 1974 was amended in 1996 to include a requirement for local authorities to develop waste management plans that incorporate the waste management hierarchy.