

**Sustainable development:
three innovative models of public
management**

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Introduction

The purpose of this article is to highlight the variety of practices which are developing as 'public management' principles are embraced globally (Gregory, 1995). Three innovative models of service delivery, in the area of waste management (specifically recycling), illustrate that the concept of sustainability is well served by public management practices.

We begin by briefly outlining some issues involved in solid waste management and recycling. Next we present three innovative public management models which have driven policies of waste management practice. The first example is the operation of the Christchurch Recovered Materials Foundation (RMF) which has been incorporated as a Charitable Trust. Local government, business and environmental interests oversee this initiative with the objective of maintaining a viable local economy. Example two is the Clean Washington Center (CWC) located in the state of Washington. This entrepreneurial structure is supported by both state and federal governments and focuses on the marketing of recovered materials. Our third example is the national Japanese response that moves well beyond recycling as a method for reducing solid waste. The co-operation of citizens, industry and government in a national scheme to change, not just waste disposal practices, but the very design of products and their manufacture has been developed to create an eco-friendly society (FAO, 1997).

Waste Management Policy

From the point of view of sustainable development, waste can be interpreted broadly or narrowly. Broadly it might be construed as including various forms of pollution, ranging from discharges of toxins into the commons, or of emissions into the atmosphere. A narrow interpretation on the other hand, can be characterised as those by-products of production and consumption that are the subject of specific waste control programs. A major part of the latter is the problem of solid waste disposal in landfill (Highfill & McAsey, 1997). Current estimates vary, but industrial countries produce approximately 800-900 kilograms per person of solid waste materials annually much of which ends up in municipal landfill sites. The growth in the volume of residential solid waste is only part of the problem. The estimates of industrial use of municipal landfill sites ranges from 20% to 60% depending on location and waste management policies as reported in such periodicals as *Waste Age*, *Recycling Times* and *BioCycle*. For example, 'clean' industrial waste (excluding hazardous and nuclear) in Iceland was just 10,000 tonnes compared to the 105,000,000 tonnes reported by France in the mid-1990s (OECD, 1998). This continuing growth of solid waste means that the use of landfill as a traditional method of disposal is becoming problematic as landfill sites are filling up faster than expected.

Not only are landfill sites reaching capacity faster, it is getting harder to find new sites (Hiroshi, 1998). Prohibitive cost is a major factor for urban centers. Also as populations become more educated about environmental issues, they are less willing to support public or private initiatives which they believe will harm the environment especially in their own backyard. Many if not most older landfill sites have become a major source of water and soil contamination. Even

though new methods of controlling seepage and air quality, such as lining landfill sites, are now mandatory near most urban centers, fears are not always allayed (Ackerman, 1997). Thus, waste management has become a process fraught with political implications for policy makers.

The debates concerning the reduction of waste materials are usually focused on three topic areas; manufacturer responsibility, consumer responsibility and recycling. One view is that manufacturers should be responsible for waste disposal, not only for the wastes of the production process, but for the packaging as well. For example, in the European Common Market, following the lead of Germany, manufacturers and service providers are responsible for the disposal of all packaging materials (Green Dot, 1998).

On the other hand, most of the research and policy discussions in the US, Australia and New Zealand has focused on consumer responsibility (eg. Beukman & Harfield, 1998; Reschovsky & Stone, 1994). Concerns with the growth of public litter and household waste have drawn debate on ways to prevent a continued increase of both. Most policy makers appear reluctant to limit personal consumption, therefore, the focus of policy initiatives is usually placed on minimizing personal waste. One popular policy is to use higher levels of taxation on household waste, usually in the form of per/bag fees charges. This may have the effect of reducing the amount of waste sent to landfill sights due to compacting even if consumption is not reduced. Another effective practice of waste management is recycling reusable materials. Recycling has been found to be particularly effective in limiting personal solid waste, and is advocated by many as the solution to the problem of industrial and commercial waste as well (Folz, 1995).

Recycling as a Means of Waste Reduction

Although there is an extensive literature on the benefits, costs and long-term consequences of recycling (eg. Ackerman, 1997, Schultz et al, 1995; Hawken, 1993), this article is not advocating that recycling is the only, or even an effective, form of waste reduction. We are using recycling as an example of a public policy which is being implemented in a variety of ways for a variety of reasons in a variety of jurisdictions.

Recycling is the re-use of products and takes many forms, for instance, reselling a pre-loved BMW or reselling second-hand clothing. This re-use of the product in its original form is a traditional option (Hawken, 1993). However, a more recent innovation is to consider 'waste material' as being re-useable in the form of a 'primary' product known as 'recovered materials'. Recovered paper, glass and plastic all now are considered by many as 'primary products' for use in the manufacturing process (Ackerman, 1997). For example, recycled newspaper is used today to manufacture insulation, just as old cloth was once the common 'primary' material in the manufacture of paper (Melosi, 1981).

Sustainable Development in Practice

The acceptance of recycling as integral to sustainable development (Hawken 1993) coincides with governments 'reinventing' themselves (Osborne & Gaebler, 1992). Governmental focus on efficiency and competitiveness in industry development (Carew-Reid et al, 1994) as well as government function, has become a principle factor in waste management policy at all levels of government. Thus, Alford's concept of 'co-production of value' is most useful when discussing recycling and waste reduction. In an effort to reconcile opposing views of public management, Alford (1993) advocates the concept of a 'public production process' in which public managers

harness, deploy, balance and adjust a mix of resources in such a way as to 'maximize value'. However, production of value is more than just a commercial return on government investment as suggested by some advocates of public management (Metcalf, 1993). Alford recognizes that the successful implementation of policies is based on the interdependency of government, private enterprise and citizens. Acknowledgement that public policy implementation is fundamentally a co-operative process, is especially useful when attempting to evaluate policy which involves non-government partners in the 'production of value'.

Recycling policies and practices are based on the view that consumers, industry, and government work together. This 'co-production' is evident in the wide range of government initiatives. We describe three examples of the production of value in which public managers have created innovative structures to implement recycling schemes. These forms of 'co-production' are not presented as prescriptions, but as examples of the innovative possibilities which public management affords.

Christchurch, a local initiative:

As part of the government restructuring process in New Zealand (Boston et al, 1996) amendments were made in 1989 to the Local Government Act which require local governments to separate their roles as policy makers from their roles as service providers. Local council debates revolved around two questions: firstly should the council be in the business of providing a specific service, and secondly, how would that service be provided. The question for local councils became how to efficiently and effectively provide a service.

By 1993, four clearly defined types of providers had emerged for local government service delivery. External providers included LATEs and the private sector; in-house providers included business units and council departments operating within the council's organization. (Domberger & Hall 1997, p. 141)

The option to provide in-house services was more often than not an administrative re-configuring rather than opting out of service provision. Contracting out to the private sector was usually reserved for large capital projects which required specialist expertise. The option which was expected to be used most often, Local Authority Trading Enterprise (LATE) to date has been little used. LATEs were to be the vehicle for a new type of service provision; creation of a new corporate entity involving a partnership with private enterprise (Domberger & Hall, 1997).

However, a fourth option has become popular with local government; the formation of independent trusts. The Waste Management Committee of the Christchurch City Council (CCC) in attempting to minimize the need for landfill commissioned the Sustainable Cities Trust (SCT) to carry out a study on glass recycling in 1996. The SCT report moved beyond the original brief to recommend the development of an infrastructure to aid in the construction of a sustainable recycling enterprise within the Canterbury region. Taking sustainability as its core objective the Committee proposed the development of an organization which would encompass both the public and private sectors as well as special interest groups.

The interested parties devised a cooperative approach and The Recovered Materials Foundation (RMF) has evolved as a Charitable Trust. The RMF which is responsible to, but not controlled by, the CCC has a board of governors which brings together government, industry, and

environmentalists. What Alford (1993) calls the 'archetype' of managerialism, the separation of politics and administration is not evident in the RMF (RMF, 1997).

The brief of the RMF is to support the creation of local enterprises based on the practices of sustainable development. The first concrete act of the RMF in this direction was the organization and implementation of a residential recycling scheme. The CCC launched a city-wide curbside solid waste materials collection programme in May 1998. The scheme was organized in conjunction with a private garbage company (Domberger & Hall, 1997) which worked closely with the RMF to design equipment, as well as procedures and processes for the recycling scheme. Market research suggested that about 40% of households would take part in the voluntary recycling scheme (Schultz et al, 1995). Educational and advertising programmes helped to move the level of use of the 'service' to 85% by time the programme had been in place for three months. Reporting the success of the scheme in the local newspapers is part of the ongoing agenda to raise awareness of sustainability issues and economic community growth.

Early economic growth was evident in a number of areas, but especially in the expansion of a number of small business, which make up the bulk of the New Zealand business community. The private company which has the contract for curbside recycling has had to expand staff. The recovered material are being removed from the solid waste stream and finding their way into the local economy. Early examples of new business ventures are the washing of reusable bottles and the processing of plastics. Growth is also evident in the RMF which has a number of working units to oversee the use of recovered materials.

This local initiative is not part of a national scheme driven by central government agendas of waste reduction, recycling or sustainable development. And although some businesses are interested and supportive of the scheme, at present recycling is restricted to residential curbside pickup. In Christchurch, no laws require either the Council or citizens to embark on the road to sustainability, it is voluntary and localized as most other New Zealand cities still claim recycling is too expensive to implement. The formation of an independent trust which incorporates the altruistic values of some environmentalists and the sound business practices of a private enterprise seems to be one organisational structure which embodies public management.

This public management initiative has not been the model for widespread duplication. Gregory (1995) wonders if there is 'any single theoretical template for all types of public organization'? Although New Zealand has since 1984 dramatically restructured both inside and outside of government to meet conditions of a globalizing economy, other countries do not appear to have moved so far (OECD, 1995). However, the state of Washington legislature consciously attempted to find a new type of public organization, at least in the area of recycling.

Washington, a regional initiative:

Washington State, in the northwest corner of the US, is noted for taking environmental concerns seriously. It was an early mover in the area of waste reduction management. In 1989 the Waste Not Washington Act was passed in which the state set a target of waste reduction by 50%. Local residential recycling schemes were implemented to meet state requirements. However, by 1990 there was an excessive supply of recovered materials, and only sporadic demand by industry for the use of these materials.

The Clean Washington Center (CWC) was created in 1990 by the state legislature primarily to provide technical assistance and information for businesses concerning recovered materials. In tandem, the Center was to serve as a catalyst the development of markets in recycled material, initially within the state, but eventually nationally and then internationally. A third important task was to influence policy for state regulations and government procurement, taking into account the possibility of the use of recycled materials as part of a move towards sustainable development. For example, recycled oil for state vehicles or recycled paper for government publications.

The CWC is predicated upon a 'market model' rather than a 'regulatory model', that is the desire to create a market for recovered materials rather than regulating quotes for recycling. The CWC is a division of the State Department of Community, Trade and Economic Development, which places it within a commercial milieu. The bill (Senate Bill 5591) which brought CWC into being also outlined the mission statement, service delivery objectives, priorities for clients and priorities of commodities. This narrow definition was based on the view that 'a market driven strategy on business assistance' was the most appropriate for creating recycled materials markets as part of a sustainable development agenda (CWC, 1999).

Strategic business plans for the Center were developed with input from business, government and other interested parties. The government employees were chosen for their experience with business and were expected from the beginning to create cooperative production of value with industry, all levels of government, academia and interest groups (Alford, 1993). The entrepreneurial skills and legislated strategies helped to create individual working relationships with business owners and managers. The mandate of the organization was to aggressively market the 'product' of the CWC, and implement aspects of the government agenda for waste reduction and sustainable development.

It is clear that CWC is part of a new public management paradigm (Kettl, 1997). The organization obviously does provide services which are of general public value, in as much as the policy of waste reduction via recycling is a major route to waste reduction. It also creates opportunities for industry development which may in the long term be a public good. The mandate of the organization was not to be a disinterested organization, but to aggressively market the 'product' of the CWC, and move the government agenda for waste reduction along.

The CWC is an excellent example in which public managers 'harness, deploy, balance and adjust a mix of resources' (Alford, 1993). By any standards, the CWC recycling promotion/stimulation programme was successful. Since its inception the CWC takes credit for attracting \$1.4 billion in industrial investment to the state and the creation of 14,000 new jobs in recycling related industries. The demand side of recovered materials is such that Washington is now an importer of recycled materials. The bold and supportive government leadership could be said to be a prime example of public management as it was envisaged by policy makers. Although the distinction between 'outputs' and 'outcomes' remains unclear, public managers in the CWC appear to have harnessed, deployed, balanced and adjusted a 'mix of resources' in such a way as to 'maximize value' (Alford, 1993).

The commercial viability of this venture was only possible because government, state and federal, incentives and initiatives provided an authoritative organization through which risky

business ventures and innovative legislation could be channelled. It is very likely that the private sector could do the same. However, experience has shown that private industry will not take the risk involved in developing recovered material markets (Ackerman, 1997). Businesses are willing to invest in recycling after viable markets have been created (Hawken, 1993), but as in many risky ventures in the past (eg transcontinental railways) governments are expected to carry the risk. This form of government leadership in policy development and implementation is also evident in Japan. However, the Japanese model seems to have moved beyond the view that waste reduction is post-production requirement, and sees recycling as an essential part of the original design of any product!

Japan, a national initiative:

Not all industrialized countries have environmental policies which set quotas for waste reduction, for instance New Zealand, specifically the use of recycling schemes (Beukman & Harfield, 1997). The New Zealand government policy continues to be based on the view that 'the market will provide' (Boston et al, 1996) even though experience in Washington state has proven otherwise. The Japanese government on the other hand, has taken the lead in developing initiatives in the area of waste management far beyond recycling.

Japan has taken the lead in a co-operative production of value in the area of waste management. If as Alford (1993) claims, implementation of government policies is based on the interdependency of government, private enterprise and citizens, then the waste management scheme in Japan is an excellent example. For almost 30 years Japan evolved waste management as a fundamentally a co-operative process. As early as 1970 the Waste Disposal and Public Cleansing Law (Waste Treatment Law) designated two categories of waste. General waste as generated by households was the responsibility of local government. Industrial waste became the responsibility of the enterprise which generated it. Allocating responsibility however, did not stop the growth of the volume of solid waste sent to landfill sites. This method of disposal, as in other countries was becoming unacceptable, as issues of health and safety became of concern to government policy-makers. At the same time the predictions for landfill space were woefully inaccurate and the problems which beset other jurisdictions loomed on the horizon (Hiroshi, 1998).

Thus, in 1991, the passage of the Recycling Law began a shift in direction of government policy, from the management of waste to the elimination of waste. All levels of society have developed, or had developed for them, a role in the recycling of waste materials. This partnership of government, business, and consumers is given guidelines by an advisory organization (Subcommittee on Waste Treatment and Recycling of the Industrial Structure Council) to the Department of International Trade and Industry. The allocation of responsibility is located within a national sustainable development policy (Fujitsu, 1997).

Co-production of value between local governments and citizens is also evident (Schultz et al, 1995). The creation of value does appear to be both economic and procedural. There has been a rapid increase in the number of recycling centers which are part of the sorting system for the recycled materials. The goodwill of individual consumers in their capacity as citizens is required to meet recycling quotas set by public managers. All industry sectors have instituted educational campaigns to ensure that individuals are taking seriously their role in the scheme; over 70% of steel and aluminum cans were being recycled by 1995 (Hiroshi, 1998).

However, the Japanese model moves well beyond consumer or manufacture responsibility to a policy of re-designing the entire production/consumption cycle (Hawken, 1993). The Japanese innovation involves defining personal and collective responsibility at each stage in the life-cycle of a product; this ensures that 'somebody' is responsible for every kind of waste and its disposal. In response to government initiatives industries have designed a product assessment system which measures the 'environmental burden' at each stage of the life-cycle from extraction of the raw materials through product manufacture, use, disposal and recycling (Powell et al, 1996).

In addition to monitoring the life-cycle of products, industry and government are working towards a 'zero emission' concept in which industries cooperate to use waste as 'primary' products. For example, Fujitsu Industries have a target of 90% recycling within its production facilities by the year 2000 (Fujitsu, 1997). Industry associations, such as the Association for Electronic Home Appliances (AEHA), are also investing in R& D to devise ways to create and use recycled products (Kriwet et al, 1995). Kijima Yasunori, the general manager of AEHA says that industries are working not just to increase the amount of recycled materials, but to actually design and manufacture products which may be more easily recycled. He suggests that

[i]t might amount to a revolution, ... but in all cases recycling would be the same everywhere. ... It will be more than that. Japan is on the threshold of a new age. The industrial structure will be changing. (Hiroshi, 1998, p.12).

Although not all businesses or all industries have totally changed their production processes to date, the businesses which have suggest a new model of sustainable development. The Japanese experiment might be heralding the model in which public managers, private enterprise and consumers work together to develop new systems and organizations which produce public value as well as private good. Waste reduction in Japan appears to be one area in which progress is being made in advancing towards the ideal of sustainable development (Hawken, 1993).

The implementation of the waste management policy has obviously been designed to be a co-operative process. The 'production of value' by all concerned is based on both ideals of sustainability and moves towards new models of public management. Japan's lack of natural resources and continued trade imbalance may be two of the important factors which support the structural change to ensure sustainable development. Whatever the need, the innovative Japanese response to waste reduction through recycling has moved beyond all other perceptions of sustainable development. As Carew-Reid et al (1994) argue, a strong government policy is necessary for changes. In this case the ideals of 'creating value' which are the basis of the new public management practice, appear to be effective.

Conclusion

In 1984 New Zealand 'led' the world in the restructuring of social, political and economic institutions. The 'market model' remains at the centre of the public management changes. The RMF trust however, appears to be a blending of public and private models. Although, managerialism might be thought to have originated in the US, public management was a late mover as the theoretical foundation for government agency practice. The example of the CWC exhibits that a new 'entrepreneurial spirit' rather than prescriptive managerialism is possible for the implementation of public policy. Japan could be seen as still being locked into a bureaucratic

system with well defined boundaries between public and private concerns. And yet the far reaching vision of a policy for an eco-friendly society implies dramatic structural changes in the relationships among producers, consumers and administrators as they co-produce public value.

The growing acceptance of recycling and use of recovered materials in both Washington and Japan indicates that sustainable waste management practices are becoming one way 'to do business' whether policy is defined by a 'market' or a 'regulatory' model. These changes in the 'way we do business' appear to have coincided with movement of governments 'reinventing themselves'. This paper illustrates that reinvention is not a unitary concept or practice, but that in different jurisdictions, different forms are evolving. In part this is because public management it is not a matter of 'definitions', but of 'practices' embedded within specific social and cultural contexts.

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