

STANDING COMMITTEE ON ENVIRONMENT, COMMUNICATIONS AND THE ARTS: INQUIRY INTO THE MANAGEMENT OF AUSTRALIA'S WASTE STREAMS AND THE DRINK CONTAINER RECYCLING BILL 2008

**SUBMISSION BY THE AUSTRALIAN BUREAU OF STATISTICS
May 2008**

Introduction

According to the Productivity Commission's 2006 Report into Waste Management, Australia generated over 32 million tonnes of solid waste in 2002-03, generating an average of 1,639 kilograms of waste per capita in that year (1). While on the surface this appears like a straightforward number, the compilation of this single statistic is a complicated task. Currently there is no comprehensive, reliable and on-going source of waste information for Australia.

Quantifying waste data, and trends in waste production, requires compiling information from throughout the economy, from the originating sources of the waste, to the organisations and government agencies that manage the waste once it leaves the point of production, and potentially to the end users of the waste or associated by-products. The flow of waste involves individuals, industry, not-for-profit organisations and all levels of government. Currently waste data sources are many and varied, as is the quality and frequency of availability of the data. The 2006 Productivity Commission Report stated that "Each state and territory collects and reports data differently, and there are gaps in the coverage of regions, waste streams and materials".

The Australian Bureau of Statistics (ABS) is Australia's official national statistical agency. It provides statistics on a wide range of economic, social and environmental matters, and covers government, business and the population. The ABS is only one of a number of Australian, state and local government agencies that contribute to the overall pool of information. Industry associations and individual companies also contribute.

Whilst the scope of the inquiry is wide ranging, this submission will focus on highlighting the role of the ABS in waste statistics, both past and present, and how the ABS could potentially contribute to the terms of reference for this Inquiry.

History of ABS waste-related collections and data

The ABS has conducted a number of waste-related surveys. These surveys have involved a number of different approaches; however, they largely revolve around measuring the supply and demand of waste services within the various sectors of the economy. The surveys have consisted of collecting data from:

- businesses and government agencies within the waste industry, ie organisations supplying waste-management services;
- businesses as waste producers and users of waste services, ie how much businesses spend on waste services;
- governments as waste producers and users of waste services, ie how much governments spend on waste; and
- households as waste producers, ie users of waste-management services and the activities undertaken within households to minimise the need for waste services (eg recycling and reuse).

A brief outline of the specific ABS Waste Surveys undertaken to date is outlined below:

Waste management services surveys

The ABS has conducted two waste management services surveys: the first in respect of 1996-97 and the second for 2002-03. These periodic surveys provide details of the performance and structure of organisations providing waste management services operating in Australia. The main focus of these surveys was to understand the nature of waste management activities, the composition of income generated, expenses incurred and the nature and volume of waste quantities. Volumetric data on waste going to landfill has been collected for a limited number of broad categories for some states and territories.

The scope of the waste management services surveys included all employing private and public sector businesses that generated income predominantly from waste management services. Waste management services include the collection, transport and/or disposal of refuse (except through sewerage systems). The scope included the waste management activities of both government and private businesses, but excluded information on recyclables. Currently there are no plans to repeat this survey.

For further descriptions of these surveys and the resulting outputs see ABS catalogue no. 8698.0 *Waste Management Services, Australia*.

Household waste surveys

The ABS household survey program collects limited information on the environmental behaviours and practices of households and individuals in Australia. Each year in March, the supplementary topic to the Labour Force Survey contains one of a set of rotating environmental topics, of which waste management is one. The waste topic has been included in the surveys conducted in 1996, 2000, 2003 and 2006.

The waste management topic focuses on the waste management activities undertaken by households, rather than volumes of physical waste produced. It provides information on the percentage of households that are recycling waste, the type of waste recycled, methods of recycling, and reasons for not recycling. Estimates are available at both Australian and state/territory levels. The next survey will be conducted in 2009.

For further descriptions of these surveys and the resulting outputs see ABS catalogue no. 4602.0 *Environmental Issues: Peoples Views and Practices, Australia*.

In addition, the 2008-09 ABS Multi Purpose Household Survey will collect information on behaviours and attitudes of households towards the environment, including availability and frequency of waste collection and disposal, and satisfaction with services.

Environment protection expenditure (EPE) surveys

In general, the past ABS approaches to compiling waste related data have centred on environment protection expenditures and income data for a number of reasons:

- they are indicative of the response of various sectors to environment protection regulations and policies;
- they provide some indication of the demand for goods and services provided by the environment management industry;
- they form part of environment 'satellite' accounts designed to augment the core system of national accounts;
- they estimate the financial burden borne, by industry and sector, on environmental protection, including waste management; and
- they are understood by respondents and involve minimal reporting burden.

In the early 1990s the ABS developed surveys aimed at providing an estimate of the expenditure on protecting the environment. Specifically, the EPE surveys covered current environment protection expenditure, environment protection capital expenditure and income from environment protection activities, collected by the following environmental domains:

- solid waste management;
- liquid waste management;
- management of air emissions;
- mine-site rehabilitation; and
- other environment management activities including protection of soil resources, protection of biodiversity and habitat, noise and vibration abatement.

Waste management is one of the main activities covered in the EPE surveys. The surveys also covered the activities of Australian governments, businesses and households. The first EPE survey was in respect of 1991-92, with subsequent collections in respect of each financial year until 1996-97.

Since the last economy-wide EPE was conducted in respect of 1996-97, the ABS has conducted sector-specific EPE surveys including: the local government EPE surveys in respect of 1997-98 and each subsequent year until 2002-03 (with the exception of 2001-02); and the Mining and Manufacturing Industries EPE in 2000-01. The range of industries covered

was limited to the mining and manufacturing industries as these are typically the largest consumers of environment protection goods and services.

The EPE surveys typically only collect financial data, that is, no physical or volumetric data is collected. However, the 2000-01 Mining and Manufacturing EPE survey collected, for the first time, information on:

- measures implemented to minimise energy, water, material inputs and waste;
- eco-efficiency savings; and
- environment plans.

For further descriptions of these surveys and the resulting outputs see:

ABS catalogue no. 4603.0 *Environment Protection Expenditure, Australia*

ABS catalogue no. 4611.0 *Environment Expenditure Local Government, Australia*

ABS catalogue no. 4603.0 *Environment Protection Mining and Manufacturing Industries, Australia.*

The collection of physical and other waste data

Typically, ABS industry surveys have a primary objective of collecting structural information about the industry, ie financial status, employment, commodities produced, etc. The resulting industry data is primarily used for compiling the national accounts, as well as for analysis or understanding specific industries. The data collected is largely financial and the addition of any ancillary data, such as the amount and types of waste produced, has proven problematic and is not the primary focus of the survey.

In recent years, however, the ABS has developed an industry collection strategy with the aim of providing annual outputs that remain relevant to priority policy needs. This includes providing a flexible component to the collection cycle, which provides the opportunity to produce detailed financial data and some combination of product data, detailed demographic data, activity data and a limited amount of characteristics data. Hence, the infrastructure is available to accommodate ancillary data needs, either financial or other.

Waste within environmental frameworks

The basis for most of the environmental collections within the ABS revolve around developing an approach that allows data to be collected or compiled for both immediate needs, such as policy requirements, as well as for longer term and possible future needs, such as long term analysis and associated impacts. Consequently, the survey standards and methodologies employed need to be statistically sound and repeatable, especially if the survey results are to be used to assess and monitor change. A major element of this involves using the methodologies and frameworks described within the *System of Environmental and Economic*

Accounting (SEEA), 2003 (2). Put simply, SEEA is a framework that describes how a set of accounts (typically physical rather than financial) can be compiled that will allow analysis of the interactions within and between the economy and the environment.

SEEA describes all solid, liquid and gaseous wastes as 'residuals'. Residuals are defined as the incidental and undesirable outputs from production and consumption processes within the economy. Consequently, within SEEA, the residuals can be measured by looking at their flow, ie the flow of residuals from the source, such as the manufacturing process to their ultimate sink: land, air or water. Thus, to measure waste, it is possible to develop a set of physical supply and use tables. For residuals (or waste), the physical supply tables would look at the substances by origin, and the use tables would look at the destination of the waste flows.

While SEEA is presented as a methodology for integrating environmental accounts, the ability to apply it to any country is dependant on having good data. Since most of the interactions between the environment and the economy have a physical basis, the underlying need is for a good set of physical accounts. Once the physical data have been compiled, the next stage would be to complement the physical accounts with economic data, thus adding an economic context to the physical measures.

Waste is a part of the SEEA framework and understanding the waste, environment and economy interactions requires a solid understanding of the waste flows. Understanding and measuring waste flows is a large and ongoing task. Waste, by its very nature, is an undesirable by-product of production, and as production increases so does the amount of waste. While the overall production process is usually well measured and recorded, the indirect outcomes, such as waste, are typically poorly reported, thus making data collection difficult.

Material Flow Accounts

Both the UN and the OECD support and promote material flow accounting. Country level Material Flow Accounts (MFAccs) are often used as indicators of environmental pressure and in the assessment of resource productivity. While the ABS can appreciate international agency approval of, and support for, such high level indicators, Australian data analysts and the ABS are generally not strong supporters of highly aggregated economy-wide MFAccs being used as environmental impact indicators.

Unfortunately, the material flow approach often over simplifies the situation and the real impact on the environment. This occurs for a number of reasons, and is principally due to the need to use a common unit of measurement. For example, adding a tonne of nuclear waste to a tonne of lawn clippings, to get two tonnes of waste is not sensible. The dramatically different impacts these two wastes have on the environment means that the costs of managing these two wastes are also very different. For example, nuclear waste would not be dumped in backyards, nor would a waste dump be specifically built for lawn clippings.

Lower level substance or sector specific MFACcs are far more valuable tools in helping to understand impacts and direct policy. The ABS believes that to maximise the understanding of the flow and impacts of waste, both in the economy and environment, any future waste data analysis needs to be disaggregated so that the individual waste streams or waste types can be measured, monitored and analysed.

Whilst the ABS is not a supporter of highly aggregated economy-wide MFACcs, there would be value in understanding the flow of certain materials throughout the economy. Understanding the flow of specific materials would assist those undertaking resource efficiency and product lifecycle analyses. The ABS trade data would be a starting point for trying to develop flows of specific materials ie what is coming into the country. However, once the goods are in the country no attempt is made to monitor their final consumptive destination.

Future requirements and directions for waste data and information

The ABS acknowledges that there is a pressing need for detailed, robust and on-going statistical information on the environment, including information on household, consumer, commercial, industrial and government waste streams.—

The ABS, as the official statistical agency in Australia, is committed to improving environmental statistics including information on waste streams, as well as providing information on the economic, environmental and social benefits and costs of strategies to reduce, recover or reuse waste.

With the appropriate resources, the ABS, with its data collection infrastructure and ability to integrate with existing economic and social datasets, is well positioned to fill data gaps in this field.

If provided with the necessary funding, ABS' activities could involve:

- repeating existing surveys, including redeveloping the surveys to better align with current requirements;
- developing new collections or indicators. This would require capturing user requirements to fully understand actual needs and proposed uses of any new data;
- assisting others in collecting/collating better waste data, thus providing a statistical leadership role; and
- developing and producing waste accounts. It is expected that developing a waste account (especially for individual waste streams) would most likely highlight data gaps and deficiencies rather than initially producing usable accounts. However, as data gaps and deficiencies are addressed, these accounts would improve and deliver information on waste streams.

Should the Inquiry recommend that the ABS take action on some or all of these issues, the ABS would need to seek resource commitments from government and/or industry sources.

Gemma Van Halderen, Assistant Statistician, Environment and Agriculture Statistics Branch (phone 02 6252 6977 or email g.vanhalderen@abs.gov.au) is the ABS contact for these issues. Gemma would be happy to discuss these matters further with the Standing Committee.

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References

1. Productivity Commission 2006, *Waste Management*, Final Report, Canberra.
2. UN 2003 *Integrated Environmental and Economic Accounting*: final draft.