Statistics New Zealand's

Environment Statistics Strategy 2003

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Executive Summary

The Environment Statistics Strategy gives Statistics New Zealand's vision for environment statistics over the next five years and identifies the department's national role in the provision of environment statistics. Statistics New Zealand is a national statistical agency with expertise in the co-ordination, collection, classification, data management and dissemination of a wide range of statistics.

Statistics New Zealand's Environment Statistics priorities are based on the Government's Budget 2000 'green issues' funding package, and the Government's *Sustainable Development for New Zealand Programme of Action*. The strategy's priorities have also been shaped by collaboration between Statistics New Zealand and the Ministry for the Environment (MfE).

Statistics New Zealand's role is primarily the provision of national environment statistics for central government. Statistics New Zealand also has a role in sub-national environment statistics where they relate to national environment statistics and are cost effective to produce.

Statistics New Zealand plans to continue the development and production of national environmental accounts that show what is happening to New Zealand's natural resource base, in physical and economic terms. Statistics New Zealand also plans to continue the development and production of national environmental protection expenditure accounts, residual (waste) accounts and a limited range of key indicators to be developed in partnership with the MfE.

Statistics New Zealand will assess ways of developing environmentally adjusted GDP measures based on experience gained compiling environmental accounts and economic measures, including Gross Domestic Product (GDP). Statistics New Zealand may also have a role in producing decoupling indicators that show whether economic growth is decoupled from environmental impacts, where these indicators can be based on environmental accounts and other environment statistics outputs.

To ensure the continued relevance and reliability of environment statistics produced by Statistics New Zealand, the Environment Statistics User Group has been established to facilitate communication and the strengthening of environment statistics priorities. This group is a continuation of the Environment Statistics Consultation Group, but with more focus on environment statistics users.

Strategic Objectives

Statistics New Zealand's **environment statistics mission** is to:

Provide official national environment statistics, and a limited range of sub-national environment statistics, for analysis and monitoring by government and other users, so that we know:

- whether New Zealand's natural resource base is growing, being sustained or being depleted
- whether we are improving, maintaining or degrading the state of New Zealand's environment
- the nature and degree of interaction between New Zealand's environment, economy, culture and society
- New Zealand's progress towards environmentally sustainable development.

Statistics New Zealand's **environment statistics purpose** is to:

- ensure relevant and reliable national environment statistics are available to support the collective needs of central government
- develop sub-national environment statistics, where practical, to support some of the sub-national information needs of central and local government
- ensure all official environment statistics are publicly available for use by interested parties.

Statistics New Zealand's **environment statistics vision** is to provide relevant and reliable official national environment statistics for government and interested parties, including:

- headline environmental indicators:
    - environmentally adjusted GDP based on Statistics New Zealand's national accounts (including GDP) and environmental accounts
    - decoupling indicators related to Statistics New Zealand's other environment statistics outputs such as environmental accounts
- regular national statistics updates:
    - on New Zealand's natural resource base and environment, through the continued production and development of natural resource accounts
    - on New Zealand's interaction with the environment, through the continued production and development of environmental accounts and the production of a range of environmental indicators with the agreement of MfE

- a limited range of sub-national official environment statistics:
    - related to Statistics New Zealand's national environment statistics outputs, such as environmental accounts and some environmental indicators
    - where it is cost effective and sufficient data is available to compile sub-national figures
    - including, if possible, a limited range of environment statistics for user-defined geographic areas
- promotion of Statistics New Zealand's environment statistics outputs using media releases, web releases and publications including reports and fact sheets.

Guiding Principles

- **Improve data quality**, through an ethic of continuous improvement of coverage, quality and timeliness of environment statistics.
- **Use accepted international principles**, through the application of United Nations Statistics Commission[1] and other internationally recognised principles and practices.
- **Use industry accepted standards**, by using and promoting standard definitions, classifications, and measurement tools across agencies to ensure there are linkages and comparability across data sets.
- **Integration of outputs.** By using common variables, data from Statistics New Zealand and other government agencies can be integrated to add value and analytical usefulness to outputs. Integrated outputs yield detailed information capable of playing a significant role in the development, implementation and monitoring of government's environmental outcomes.
- **Improve data access**, by promoting the Internet as the standard dissemination tool.
- **Promote environment statistics among users**, by continuing to compile and issue newsletters to promote environment statistics to the user community and the media.
- **Strengthen liaison, communication and co-operation between organisations**, by using groups such as the Environment Statistics User Group to determine development priorities. Develop current relationships and establish new partnerships to enhance data access and availability. Invite participation in, and input to, the Environment Statistics Programme.

Roles

Statistics New Zealand

Statistics New Zealand's statistical responsibilities are defined in the Statistics Act 1975, and include the co-ordination, collection, classification, data management and dissemination of

[1] http://unstats.un.org/unsd/methods/citygroup/londongroup.htm

statistics.[2] Statistics New Zealand's primary focus is on official statistics useful for national information and policy purposes.

Statistics New Zealand's traditional strengths have been in economic and social statistics, especially national accounts (including GDP) and the population census. Statistics New Zealand intends to build on these strengths and utilise available environmental, economic and social data to produce environment statistics.

Statistics New Zealand works in partnership with other government departments, local government and Crown Research Institutes; for example, during the development of national freshwater natural resource stock and flow estimates.

Statistics New Zealand has a role in producing sub-national statistics where they are related to national outputs and are cost-effective to develop; for example, regional figures are a part of the national freshwater natural resource accounts. There can be significant hurdles to the development of sub-national environment statistics, especially where data is only available at a national or industry level or is collected using sample surveys.

Statistics New Zealand works with MfE whenever approaching local government, as MfE has a range of existing programmes and partnerships with local government. Statistics New Zealand does not have a role in making scientific or technical measurements such as taking a stream gauging, but may utilise available scientific data sets where parties agree to Statistics New Zealand's use of the data.

Ministry for the Environment

The Ministry for the Environment's functions under the Environment Act 1986 can be summarised as:

- to advise the Minister for the Environment on all aspects of environmental administration
- to obtain information and conduct and supervise research for the formulation of advice to the government on environmental policies
- to advise government and its agencies and other public authorities on:
    - environmental legislation
    - assessment and monitoring of environmental impacts
    - pollution management and control
    - identification and reduction of natural hazards
    - control of hazardous substances
- to assist in resolving conflict regarding policies and proposals that may affect the environment

[2] Statistics Act 1975. [Online 26/11/2003] http://www.legislation.govt.nz/

- to provide and disseminate information and services to promote environmental policies, including education and mechanisms for promoting participation in environmental planning.

In fulfilling these functions MfE has a pivotal role in environmental reporting, especially environmental indicators.

Environmental Performance Indicators

The MfE, in partnership with central and local government, Mâori, scientific groups and non-government agencies, led the development of the Environmental Performance Indicators (EPI) Programme.[3] The ministry's Environmental Reporting Programme now supersedes the EPI Programme.

The Environmental Reporting Programme marks a shift for MfE from indicator development to indicator reporting. MfE's Environmental Reporting Programme will inform government of the relationship between governance targets and management outcomes and the effectiveness of New Zealand's responses to key and emerging environmental issues.

The ministry and Statistics New Zealand will work closely on any EPIs that Statistics New Zealand may have a role in producing, reflecting the whole-of-government approach under the *Sustainable Development for New Zealand Programme of Action*.[4] Statistics New Zealand will support the production of indicators by the MfE through environmental accounts, which provide data that can be used to form indicators. Statistics New Zealand will work with MfE to establish which environmental performance indicators SNZ might produce. Details of these arrangements are yet to be finalised.

Statistics New Zealand's possible involvement in a limited range of EPIs will not affect the ongoing partnership work between MfE and local government, such as the ministry's partnership agreements with all 16 regional councils and unitary authorities for sharing environmental information.

Parliamentary Commissioner for the Environment

The Parliamentary Commissioner for the Environment (PCE) is an officer of Parliament and statutorily independent from the government. The office of the PCE was established under the Environment Act (1986)[5] and reports on the effectiveness of New Zealand's environmental management systems, policies and processes. The reports and recommendations the PCE presents to Parliament include official national and sub-national environment statistics.

[3] "An indicator can be defined as a parameter or a value derived from parameters, which provides information about a phenomenon (OECD, 1993). Indicators are quantified information which help to explain how things are changing over time or vary spatially" (EEA, 1999). Indicators are a type of statistic.

[4] Department of Prime Minister and Cabinet (DPMC) (2003). *Sustainable Development for New Zealand: Programme of Action*. [Online 26/11/2003] http://www.beehive.govt.nz/hobbs/30199-med-susined-developm.pdf

[5] Environment Act 1986. [Online 26/11/2003] http://www.legislation.govt.nz/

Environment Statistics User Group

The Environment Statistics User Group has the purpose of facilitating communication between Statistics New Zealand and environment statistics users, ensuring Statistics New Zealand's environment statistics meet user needs.

Environment Statistics Drivers

Primary drivers behind Statistics New Zealand's Environment Statistics Strategy include the Budget 2000 'green issues' funding and the Government's *Sustainable Development for New Zealand Programme of Action*.[4] Legislation such as the Resource Management Act (1991), and the Local Government Act (2002) are secondary drivers.

Budget 2000 'green issues' funding

In the Budget 2000, the Government funded Statistics New Zealand, through MfE, to develop national environmental accounts.

The purpose of the proposed work on national environmental accounts is to enhance New Zealand's national accounts system to take better account of the environmental effects of economic activity, and to more clearly identify sustainable national income.

Government proposed that environmental accounts include natural resource accounts, stock and flow accounts, environmental protection expenditure accounts, and accounts for energy, land and water. Government also proposed that different approaches to calculating environmentally adjusted GDP be assessed, and based upon the outcomes of this work, environmentally adjusted GDP estimates be prepared. Note that measures of environmentally adjusted GDP complement rather than replace standard measures of GDP.

Sustainable development: Programme of action

The Government's *Sustainable Development for New Zealand Programme of Action* highlights water, energy, sustainable cities, and investing in child and youth development as being areas of particular significance for New Zealand's sustainable development.

The programme also recommends several types of indicators and environment related statistics. "These include:

- individual social, economic and environmental indicators and statistics
- composite sustainability indicators that integrate economic, social and environmental data to measure overall progress towards sustainable development goals
- indicators that show the extent to which growth is 'decoupled' from environmental impacts and whether activities are becoming more ecologically sustainable
- environmental accounts that track change in stocks and flows of key natural resources."[6]

[6] DPMC (2003). *ibid,* page 27.

Legislation

The Resource Management Act (1991) and Local Government Act (2002) are secondary drivers. These Acts have created a statutory requirement on local government to monitor the state of the environment within their jurisdiction, the environmental performance or effectiveness of methods they employ to address issues, and to report progress towards outcomes or community well-being.

Local government, therefore, is likely to capture data that if standardised across New Zealand, may be aggregated into regional and national environmental statistics. Conversely, Statistics New Zealand may gather information which could be disaggregated for analysis of local areas and be of use to both central and local government. This will only be possible when Statistics New Zealand's national level environment statistics are derived from regional estimates, or when developing or continuing sub-national statistical outputs is not prohibitively expensive.

Development Path

The development path for Statistics New Zealand's Environment Statistics has a number of facets:

- natural resource statistics
- environmental protection expenditure
- residuals (wastes)
- indicators
- support for sustainable development reporting
- other environment statistics developments.

Natural resource statistics

The natural resources work will focus on environmental accounts, in particular natural resource accounts that show natural resource stocks and flows; as well as product accounts that show the flow of products produced from natural resources. Environmental accounts will be developed using the internationally recognised System of Environmental and Economic Accounting (SEEA).[7] Environmental accounts "track the changes in stocks and flows of key resources such as freshwater and energy."[8]

Energy and freshwater, as well as fish, forests, land and minerals, constitute key natural resources. They have been a part of New Zealand's economy since people arrived in New Zealand. These natural resources continue to be used for economic gains and are of long term interest to New Zealand's economy.

[7] SEEA [Online 26/11/2003] http://unstats.un.org/unsd/environment/seea2003.htm

[8] DPMC (2003). *ibid,* page 27.

The development path for natural resource statistics includes:

- continuing the production and development of natural resource and product flow accounts in the areas of energy, water, fish, forests, land (including ecosystems), and minerals
- promoting natural resource and product flow accounts to government and other interested parties
- producing ongoing natural resource accounts
- disseminating accounts to users via the Internet, email, and hardcopy
- expanding and improving data sources and methods so that the quality and coverage of natural resource accounts improves
- developing regional material and energy flow accounts as regional input-output tables become available (Note: Statistics New Zealand's Regional Statistics team is seeking funding for work on regional input-output tables).

Environmental protection expenditure

Environmental protection expenditure (EPE) accounts "… aim to measure what is being done to protect the environment, in terms of environmental protection and management activities, products to protect the environment and expenditure on these goods and services."[9] Environmental protection expenditure accounts show the expenditure on such goods and services.

The development path for EPE accounts includes:

- updating public sector EPE accounts
- monitoring developments in defining the environment industry, such as the work the Ministry of Economic Development is currently doing
- assessing the potential for the development of private sector EPE accounts.

Residuals (wastes)

"Residuals are the incidental and undesirable outputs from the economy, which generally have no economic value and may be recycled, stored in the economy or (more usually at present) discharged into the environment. 'Residuals' is the single word used to cover solid, liquid and gaseous wastes."[10] Residual accounts show the flow of residuals, which industries are generating them and where they are going.

[9] SEEA (2003). *Handbook of National Accounting, Integrated Environmental and Economic Accounting 2003*, page 48. [Online 5/12/2003] http://unstats.un.org/unsd/environment/seea2003.htm

[10] SEEA (2003). *ibid,* page 30.

The development path for residual accounts includes:

- developing energy greenhouse gas emissions accounts that complement energy natural resource accounts and the work already done by the Ministry of Economic Development in this area,
- assessing the potential for general residual accounts for:
    - wastes to land
    - wastes to water
    - wastes to air
    - hazardous wastes.

Indicators

"An indicator can be defined as a parameter or a value derived from parameters, which provides information about a phenomenon (OECD, 1993). Indicators are quantified information which help to explain how things are changing over time or vary spatially." (EEA, 1999)

Statistics New Zealand has a limited role in the production of environmental indicators as indicated in the Roles section of this strategy document. (refer to 'Environmental Performance Indicators'.)

The development path for environmental indicators includes:

- continuing the production of socio-economic indicators for the environment that complement MfE's environmental performance indicators
- confirming with MfE which environmental performance indicators (EPIs) Statistics New Zealand might produce
- establishing data management and production systems for any EPIs MfE wants Statistics New Zealand to produce
- disseminating indicators to users via the Internet, email, newsletter and hardcopy
- promoting indicators within central and local government and to the user community outside government.

Supporting sustainable development reporting

The World Commission on Environment and Development defined sustainable development as, "development which meets the needs of the present without compromising the ability of future generations to meet their own needs".[11] The New Zealand Government has adopted this definition and incorporated it into a programme of action intended to strengthen the way central government operates. Central government also required local government to take a

[11] World Commission on Environment and Development (WCED) (1987). *Our Common Future,* Oxford University Press, Oxford, page 43.

sustainable development approach in choosing which goods and services to provide to local communities, and in how it delivers these, as prescribed within the Local Government Act (2002). Local authorities are also required to facilitate the development of local visions for the future (outcomes) and to report progress towards achieving these.

To support sustainable development reporting, Statistics New Zealand's Environment Statistics section intends to:

- investigate and if practicable, develop a measure of environmentally adjusted GDP for New Zealand which will utilise both the natural resource accounts, identified above, as well as National Accounts' work on GDP and stocks of fixed capital
- produce decoupling indicators for the environment which will integrate economic and environmental data to show the extent to which activities are becoming more ecologically sustainable
- provide EPIs and composite indicators that can be used by agencies such as MfE to report on the environment as a part of government's sustainable development reporting framework
- support future Statistics New Zealand work monitoring progress towards sustainable development.

Other environment statistics developments

Spatial and socio-environment statistics

Geographic Information Systems (GIS) provide significant opportunities for integrating social and environmental information to produce regional and local level environment statistics. Statistics New Zealand intends to increase its GIS capability through work on natural resource accounts for forestry and land, as well as by exploring the potential for the development of other environment statistics, possibly linking with social statistics such as geographically referenced census data.

Arguably, the most important direct influences between society and the environment are the life-supporting functions of the environment. These include the provision of oxygen, warmth, water, and other services such as protection from ultraviolet radiation by the ozone layer. These life support functions are ecosystem inputs, which can be assessed using ecosystem-input accounts that are similar to natural resource accounts. Statistics New Zealand will investigate the feasibility and value of developing ecosystem accounts where they relate to work already underway, such as energy or residuals (waste) accounts.

Māori environment statistics

As part of its strategic intent, Statistics New Zealand is committed to working to ensure that the statistical needs of Māori can be identified and progressively met. The department has prepared the discussion document *Towards a Māori Statistics Framework* which outlines its conceptual approach to measuring dimensions of Māori wellbeing and development.

The department intends to progress this work by discussing the draft framework with key Māori stakeholders. This includes matters relating to environment statistics. The Māori Statistics Unit and Environment Statistics will assess which environment statistics developments might be furthered to meet core Māori environment statistics needs, following stakeholder discussions.

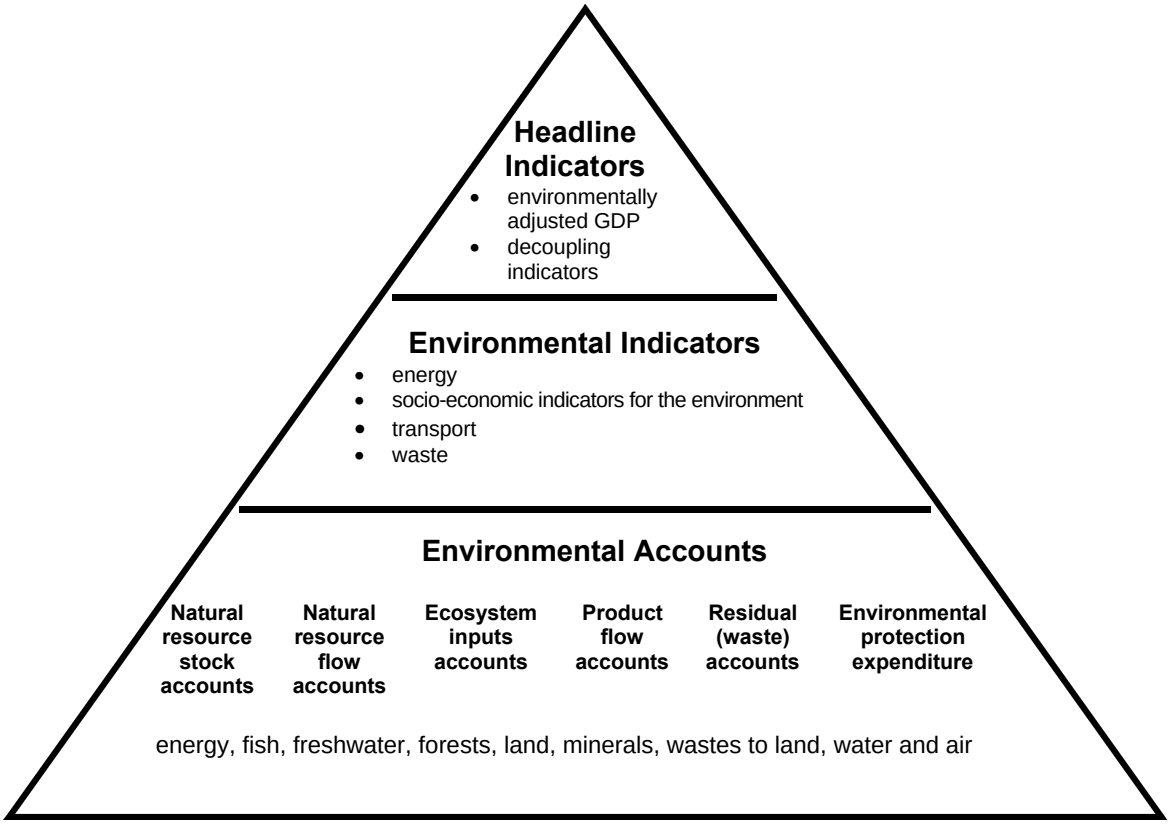
Classifications, standards and metadata

Statistics New Zealand will provide classifications, standards and metadata related to Statistics New Zealand's environment statistics outputs. Statistics New Zealand will also ensure metadata related to environment statistics conforms to New Zealand Government (e-government) standards.

During consultation on the Environment Statistics Strategy a range of organisations stated a need for a centralised environmental metadata database. This need has been identified previously by MfE.[12, 13] The work is being co-ordinated by Land Information New Zealand with other relevant parties including Statistics New Zealand, the e-government unit, MfE, Crown Research Institutes and local government.

Statistics New Zealand will promote the use of standard classifications maintained by Statistics New Zealand when government and other organisations collect economic or social information related to the environment. This will facilitate the integration of, and add value to, each data set as data can be used for a greater range of purposes.

Statistics New Zealand's environment statistics framework.



[12] MfE (1998). *Issues and options for a national state of the environment reporting system*.

[13] MfE (1998). *The Needs Analysis: Final Report*. UNEP/GRID Information Plan.