Developments in Environmental-Economic Accounting

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Summary

Environmental accounting has emerged as a global response to the shortcomings of the System of National Accounts (SNA) to reflect environmental considerations. Stats NZ is developing environmental-economic accounts to meet widespread needs around understanding the impacts and dependencies of the economy on the environment and develop statistics that show progress beyond that of GDP growth. This paper provides an overview of environmental-economic accounting, including its application to ecosystems and how it may be used to understand the stocks and flows of natural resources in New Zealand, its use in economic analysis, and Stats NZ's work to date and future developments.

Key words

Environmental-economic accounting; SEEA; natural capital

Introduction

Environmental accounting has emerged as a global response to the shortcomings of the System of National Accounts (SNA) to reflect environmental considerations. It can be used to assess whether patterns of economic activity are depleting or degrading our resources; and to show the value of natural resources, who benefits from natural resource use, and what actions are being undertaken to protect the environment.

The System of Environmental-Economic Accounts (SEEA) was endorsed by the United Nations in 2012 as a statistical standard for measuring the interactions between the environment and the economy in a manner consistent with the principles and concepts used in the SNA (a statistical standard since 1958) SEEA uses concepts, definitions, and classifications consistent with those under the SNA to lead to a clearer understanding of environmental-economic trade-offs, and provide a more complete picture of a country's economic and environmental performance.

In February 2018, Stats NZ published Environmental-economic accounts: 2018 which included physical stock accounts for land cover, timber and water, monetary stock accounts for timber, renewable energy and fish, physical flow accounts for greenhouse gas emissions, and environmental activity accounts for environmental taxes and environmental protection expenditure. Also included were estimates of New Zealand's marine economy.

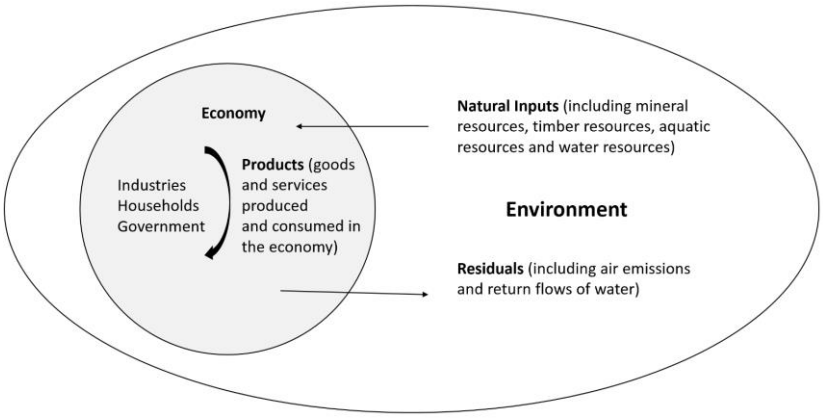
Stats NZ is developing environmental accounts to meet widespread needs around understanding the impacts and dependencies of the economy on the environment. These statistics also feed into the programme to develop wider measures of progress that go beyond standard GDP measures.

This paper provides an overview on recent international developments in environmental-economic accounting, including its application to ecosystems, how it may be used to understand the stocks and flows of natural resources in New Zealand, its use in economic analysis, and Stats NZ's work to date and future developments.

The SEEA framework

The SEEA framework covers: stocks of environmental assets; flows of environmental services within the economy; residuals from economic activity to the environment; and accounts showing the extent of environmentally related economic transactions (figure 1). In doing so, it captures a broad range of interactions between economic agents, natural resources, and ecosystems, across a range of environmental assets and resource inputs and residuals. The SEEA covers both physical and monetary approaches to measuring environmental assets and their services. These are detailed in two manuals: the SEEA central framework and SEEA experimental ecosystem accounting framework. Additional guidance on compiling accounts are available through the SEEA-Water, SEEA-Energy, and SEEA-Agriculture, forestry and fisheries manuals. The extensions and applications manual outlines applications of environmental economic accounting such as decoupling indicators and input-output analysis.

Figure 1



Central framework

There are two main components to the SEEA. The Central Framework, which was endorsed by the United Nations Statistical Commission (UNSC) in 2012 as a statistical standard (the same level of acceptance as the SNA), outlines the measurement of stocks and flows of environmental assets such as land, energy, water, timber, and minerals, and environmental activity accounts such as environmental taxes and protection expenditure. It introduces the principles, concepts, and definitions from the SNA that are to be applied to environmental data to achieve integration. These include: the use of net present value methods for measuring asset values; the production boundary; the principle of valuing at the point of exchange; and the use of consistent

industrial classification systems. Country-level implementation of the accounts depends on respective data needs. The UN Committee of Experts on Environmental-Environmental Accounting have set a target an implementation target for at least 100 countries to have ongoing, well-resourced programmes in SEEA central framework accounting by 2020. By 2017, there were 69 countries with such programs of work.

The outputs consist of a comprehensive set of tables and accounts on the environment and its relationship with the economy. Generally, accounts prepared under the central framework are at the national level for integration with national economic accounting. However, in theory, these could be produced at a local or regional level provided the same concepts, classifications, and definitions have been applied. Many countries produce environmental accounts regularly based on the central framework, including Australia, Canada, the Netherlands, and the United Kingdom. Water, energy, and air emission accounts tend to be usual accounts produced using the central framework.

Ecosystem accounting

The experimental ecosystem accounting framework extends the central framework into the domain of ecosystem condition, extent, and services, and has a holistic view of environmental assets. Like the central framework, its strength is its capacity to integrate environmental information with standard measures of economic activity. Endorsed by the UNSC as international guidance in 2013, it uses the same principles, structure, and accounting approach as the central framework to maintain coherency. Ecosystem assets are the basis upon which the ecosystems function and provide ecosystem service flows. Ecosystem services provide the link between ecosystem assets and the benefits received by society. Ecosystem service flows are classified into three broad categories of provisioning services, regulating services, and cultural services.

- Provisioning services generate the ‘goods’ in ecosystem goods and services. They reflect the material and energy provided by ecosystems, such as timber, fish, or plants that are harvested.
- Regulating services represent the capacity of ecosystems to control the climatic, hydrological, and bio-chemical cycles, as well as biological processes.
- Cultural services are generated from the physical setting, location, and characteristics of ecosystems. They are the emotional, intellectual, and symbolic benefits that people obtain from ecosystems through recreation, knowledge development, relaxation, and spiritual reflection.

Supporting services are not included in the SEEA framework as these are intermediate inputs into final demands. The ecosystem accounting framework has a system rather than individual resource perspective on environmental assets. The central framework assesses environmental assets individually (e.g. timber, water, and fish). In contrast, the ecosystem accounting framework perspective is on a given ecosystem and the range of ecosystem services provided. It assesses how individual environmental assets interact as part of natural processes within a spatial area, to provide a range of services for economic and other human activity. It has a broader scope than the physical asset

boundary of SNA because it focuses on assets that have a contribution to wellbeing whether those benefits are within the scope of the SNA or not.

The ecosystem accounting framework aims to provide information on the capacity of an area or system to provide ecosystem services and how these services change over time. It monitors ecosystem degradation and conveys evidence and data gaps on important services and characteristics. Ecosystem accounting makes extensive use of subnational data and accounts can be compiled at any scale within a nation. The use of the same concepts, classifications, and definitions across geographic scales provides consistency and the ability to aggregate to the national level. Some countries have produced initial ecosystem accounts but none has yet developed a complete set of ecosystem accounts.

SEEA account types

SEEA covers three broad types of account: stocks, flows, and transactions.

Stocks

The economy's use of natural inputs is linked to changes in the stock of environmental assets that generate those inputs. Environmental assets are the naturally occurring living and non-living components of Earth, together constituting the biophysical environment, which provide benefits to humanity. Although they are naturally occurring, many environmental assets are transformed to varying degrees by economic activities. SEEA has two perspectives on environmental assets.

- Central framework focuses on individual components of the environment that provide materials and space to all economic activities, for example, resources such as mineral and energy, timber, water, and land.
- Experimental ecosystem accounting framework focuses on the interactions between individual environmental assets within ecosystems. It looks at the broad set of material and non-material benefits that accrue to the economy and other human activity from flows of ecosystem services. Ecosystems are dynamic communities of plants, animals, and microorganisms interacting with their non-living environments as a functional unit. Examples are terrestrial (eg forests and wetlands) and marine ecosystems. Often, different ecosystems interact at local and global levels.

The two main objectives of a stock account are to measure the absolute level of natural resources at a point in time as an indication of New Zealand's wealth, and to show any change in stock levels over a certain period. The change in stock level is determined by calculating the difference between the opening and closing balances. The stock accounts can also be linked to flow accounts by recording the associated harvest or extraction. Stock accounts can be expressed in either monetary or physical terms.

Flows

Flow accounts use physical units to measure the flows of materials and energy that enter and leave the economy and the flows of materials and energy within the economy. These measures are called physical flows. In broad terms, the flows from

the environment to the economy are recorded as natural inputs (eg flows of minerals, timber, fish, and water). Flows from the economy to the environment are recorded as residuals (e.g. solid waste, air emissions, and return flows of water). For natural inputs, flow accounts can be expressed in both monetary and physical terms.

Transactions

SEEA records the flows of economic activities related to the environment, such as expenditures on environmental protection and resource management, and the production of environmental goods and services.

Records of economic activities undertaken for environmental purposes are called functional accounts. The SEEA framework provides a more complete view of the environmental aspects of the economy by considering environmental transactions such as taxes, subsidies, grants, and rent.

Coverage

SEEA covers a broad range of environmental assets, residuals, and environmentally related economic transactions. Table 1 describes stock and flow accounts, Table 2 covers transaction accounts.

Table 1

SEAA stock and flow accounts				
Account	**Type of account**			**Information it provides**
	Physical stock	**Physical flow**	**Monetary stock and flow**	
Air emissions		x		Generation of air emissions by resident economic units (industry and households) and by substance type.
Ecosystem condition and extent	x			Overall quality of the ecosystem asset and its size.
Ecosystem services	x		x	Provisioning, regulating, and cultural ecosystem services from a specified ecosystem (eg agricultural or forested land, inland waters). Most services are specified in physical terms, although services that are traded are estimated using market prices.
Economy-wide material flow		x		Aggregate overview of the material inputs and outputs of an economy, including inputs from the environment, outputs to the environment, and the physical amounts of imports and exports.
Energy	x	x	x	Energy flows from the initial extraction or capture of energy resources from the environment into the economy, to the flows of energy within the economy in the form of the supply and use of energy by industries and households. Also, the flows of energy back into the environment.
Fish	x	x	x	Total biomass of all species that are subject to harvesting activity or cultivated within the national boundary.
Timber	x	x	x	Volume and value of timber resources at the beginning and end of an accounting period and change in the stock (natural growth and removals) over the accounting period.
Land	x		x	Land use and land cover data, useful for assessing impact of urbanisation, intensity of crop and animal production, and afforestation and deforestation.

Minerals	x		x	Quantities and values of stocks and resources and the changes in these over accounting periods. Flows of extraction, depletion, and discoveries provide information on the availability of individual resources.
Waste	x	x	x	Generation of solid waste and management of flows of solid waste to recycling facilities, controlled landfills, or directly to the environment.
Water	x	x	x	Water flows from the initial abstraction of water resources from the environment into the economy, to the water flows within the economy in the form of supply and use by industries and households, and finally flows of water back to the environment.

Table 2

SEAA transaction accounts	
Account	**Information it provides**
Environmental goods and services sector	Considers environmental activities from the supply perspective and presents information on the production of environment goods and services. Assists in understanding the economic response to the challenges of environmental degradation and the depletion of natural resources.
Environmental protection expenditure	Identifies and measures society's response to environmental concerns through the supply of and demand for environmental protection services and through the adoption of production and consumption behaviour aimed at preventing environment degradation.
Environmental taxes	Records the amount of energy, transport, pollution, and resource taxes paid to government for something that has a proven scientific negative impact on the environment.

Economic applications

The broad approach of the SEEA enables it to be used in an ecological economics, environmental economics, or natural resource economics based framework. Hamilton (2004) explores the link between SEEA and sustainability showing how it is consistent with a generalised version of the Hartwick rule (i,e. consumption is sustainable if the value of investment equals the value of rents on extracted resources at each point in time).

The consistency between the SEEA and SNA enables national accounts to be integrated with environmental data, thus methods of analysing national accounts can be extended into an environmental context. This ranges from joint presentations of environmental and economic accounts, (e.g. Input-Output Tables with Ecosystem Services (Obst and Eigenraam, 2016)), derivation of resource productivity or emissions intensity measures (e.g. greenhouse gases per unit of GDP), to more sophisticated techniques such as computable general equilibrium modelling. The SEEA also underpins notions and measures of green growth (as pioneered by the OECD) and several United Nations sustainable development goal indicators.

The SEEA can also be used to provide a 'green' approach to economic statistics such as GDP or multifactor productivity. Brazil, for example, are about to measure green domestic product so that the value of natural ecological capital is considered alongside

economic production, while Australia includes measures of natural capital in estimates of multifactor productivity for the mining industry.

Accounts produced by Stats NZ

Stats NZ's environment team, set up in 2001, was initially funded by the Ministry for the Environment. New Zealand was then the only OECD country that had yet to compile a suite of environmental accounts. From 2001 to 2005, Stats NZ created the natural resource accounts based on the SEEA framework. The focus was to establish stock and flow accounts that are measured in monetary and physical terms.

The accounts did not cover the full range of potential accounts, and data gaps existed in all of them. Most of the accounts provided estimates at the national level, with minimal sectoral or regional breakdown. From 2001 to 2011 Stats NZ produced 18 publications on environmental accounting covering energy, environmental protection expenditure, forestry, fish, the marine economy, minerals, and water. Appendix 1 lists Stats NZ's publications prior to 2018.

The accounts' scope and frequency were reduced after 2009 as focus shifted to reporting on sustainable development and to developing an environmental domain plan. In August 2012, the Cabinet Committee for Economic Growth and Infrastructure concluded that SEEA accounts "need to be produced more frequently to improve the utility of the information".

Development of Stats NZ's environmental accounts began while the SEEA was still experimental. Renewed concerns about understanding well-being 'beyond GDP' (Stiglitz et al, 2009), the need to better account for nature, and the adoption of SEEA as a statistical standard in 2012 led to regular SEEA production worldwide.

In February 2018, Stats NZ published *Environmental-economic accounts: 2018* which included accounts for:

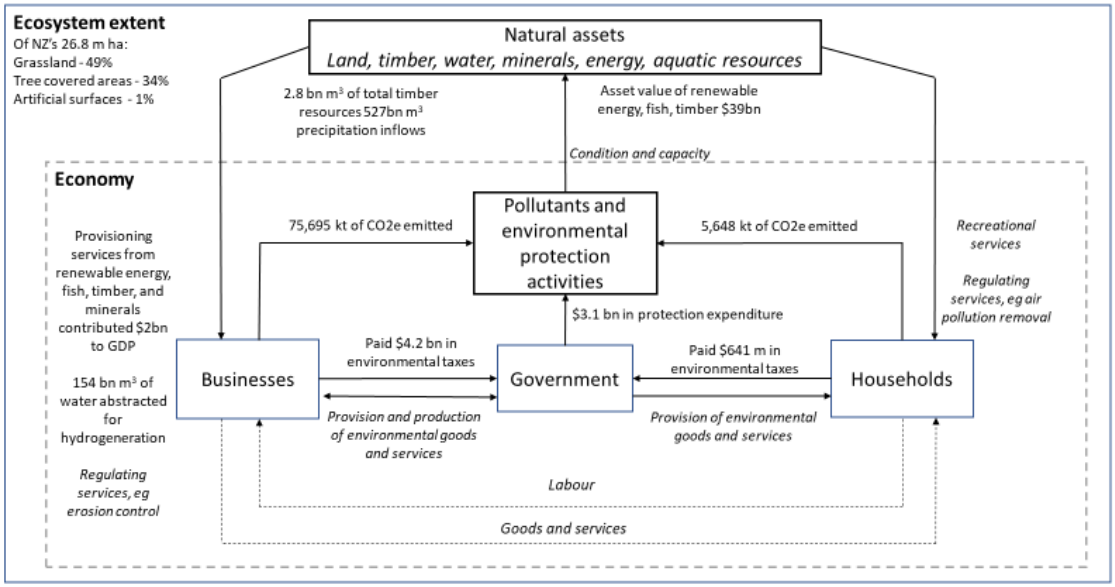
- Land cover
- Water physical stocks
- Timber stocks (physical and monetary)
- Renewable energy monetary stocks
- Fish monetary stocks
- Air emissions
- Environmental taxes
- Environmental protection expenditure
- Marine economy

This release marked the first time Stats NZ's accounts had been consolidated into one output. Prior to this release, accounts were released one at a time. Consolidation of the accounts has allowed a more coherent and integrated view of natural capital and economic responses.

When combined, these accounts can provide insight into the interactions between the environment and the economy despite significant gaps being present in the accounts. Figure 2 below shows how SEEA can track the resources available for economic production, the flow of services for production and well-being, intra-economy flows

related to the environment, and the residuals going back into the environment as well as economic responses to protection environmental assets.

Figure 2



Data are for the latest available year: monetary data (2016), emissions (2015), water stocks (2014), land cover (2012)

The following sections summarise the key findings from these accounts. Further findings and detail can be found in Stats NZ (2018a). Information on methods and concepts used to derive the accounts can be found in Stats NZ (2018b).

Natural capital: physical estimates

The physical stock accounts provide an insight into the extent of some of New Zealand's key natural resources and how these are changing over time. The land cover account shows how (and where) land cover has shifted from grassland to tree-covered areas, with the resultant increase in timber volumes observable in the timber account.

Of New Zealand's 26.8 million hectares, grassland accounted for 49.1 percent of New Zealand's land cover, and tree-covered areas a further 33.9 percent in 2012. Shrub-covered areas accounted for 8 percent, and artificial surfaces areas a further 1 percent.

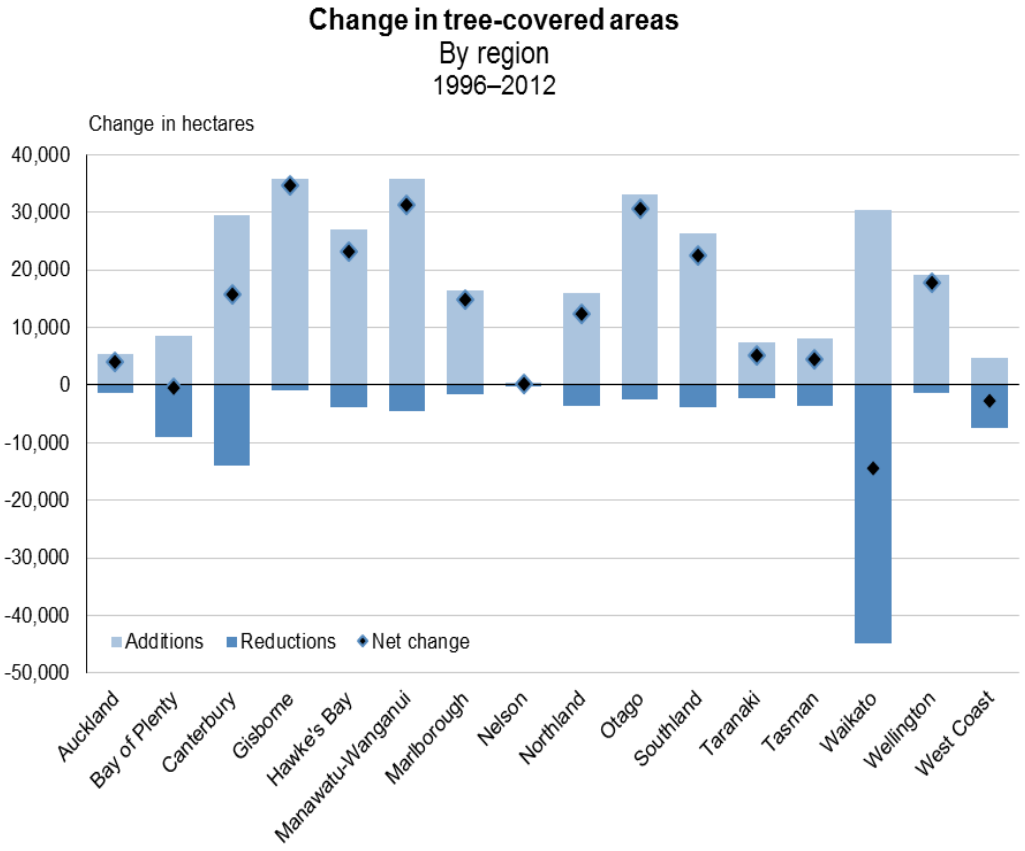
From 1996 to 2012, 2.3 percent of New Zealand's land cover changed classes. Land cover increased for tree-covered areas (2.2 percent, 199,547 hectares), woody crops (51.9 percent, 35,395 hectares) and artificial surfaces (10.9 percent, 24,220 hectares). Land cover decreased for grassland (1.6 percent, 214,581 hectares), and shrubland (2.4 percent, 50,206 hectares).

The change in tree-covered areas was driven by changes from grassland to trees. Of the net 199,547 hectares that changed to tree-covered areas, 163,150 (or 82 percent) were classed as grassland in 1996 while a further 39,153 (20 percent) hectares were classed as shrub-covered areas.

Most regions recorded an increase in land covered by tree-covered areas, except for Bay of Plenty, Waikato, and the West Coast. Net change in tree-covered areas was greatest for Gisborne, followed by Manawatu-Wanganui, and Otago (figure 3).

Despite the net reduction for Waikato, the region had the fourth-highest increase in tree-covered areas from 1996 to 2012. Canterbury had the fifth-highest increase in tree-covered areas, but the second-largest reduction.

Figure 3

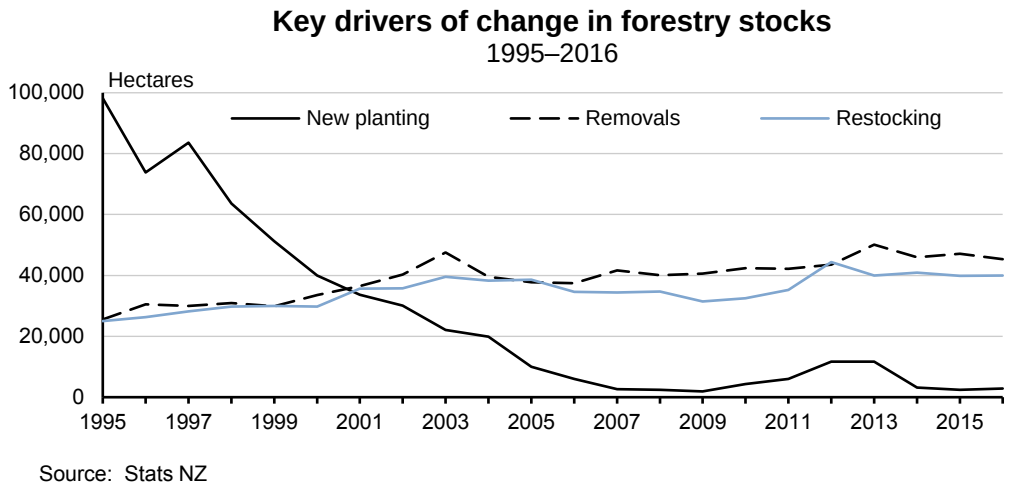


Source: Stats NZ using data from Landcare Research

While growth in tree covered areas and timber stocks led to a significant increase in the stock value of timber, and the receipt of substantial resource rents and greater stocks of carbon, the imminent maturity (and harvesting) of forests planted in the early-to-mid 1990s and fall in new plantings poses a challenge for future reductions of net greenhouse gas emissions.

Natural growth and harvesting are identified in the timber stock account as major components of change in commercial forests. New planting is not included in the timber stock account as planting itself does not increase the timber stock, but natural growth does so after planting has occurred. After significant new planting of 98,000 hectares of timber in 1995, new planting continued but at a decreasing rate (figure 4).

Figure 4

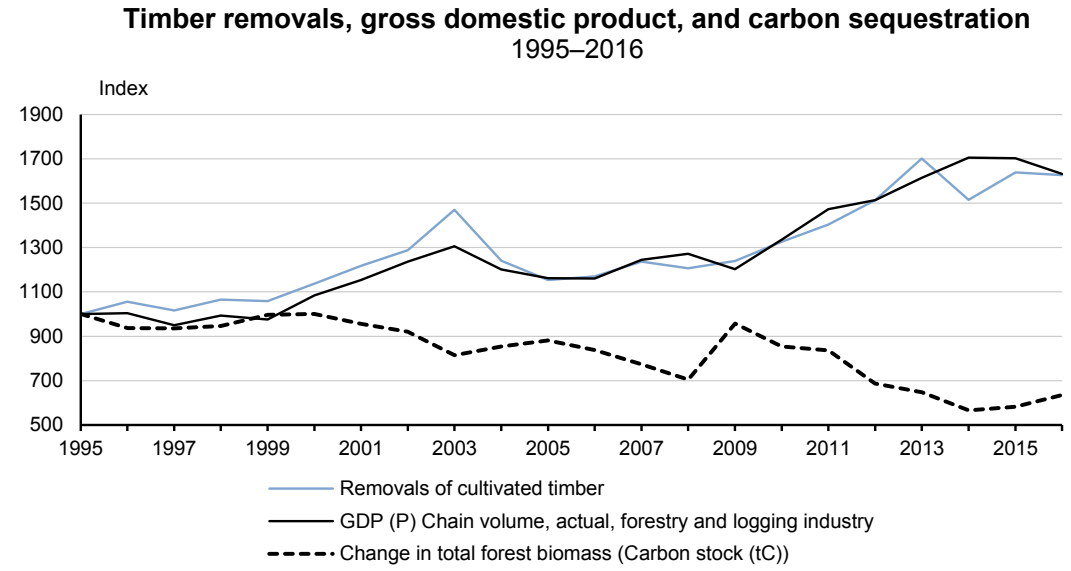


Source: Stats NZ

New planting (planting of trees on land that has not previously been used for growing production forests), and restocking (replanting planted production forest that has been harvested) combined was larger than removals until 2007. Hectares of cultivated timber available for wood supply peaked in 2003, and then generally declined over the next 10 years as planting and restocking no longer exceeded removals. The value of timber stocks in cubic metres continued to increase as the existing forests planted continued to grow and increase the value of timber (per hectare of forest) as they matured.

Total removals of cultivated timber and GDP in real terms (which has the effects of price change removed) for the forestry and logging industry are closely related (figure 5). Therefore, future removal rates are expected to be closely linked to future GDP. As forestry plantations cultivated in the 1980s and 1990s mature and are removed, it is reasonable to expect GDP for the forestry and logging industry to increase substantially. This increase will include flow-on effects to industries providing services to the forestry and logging industry, and with positive impacts on other measures of welfare, such as employment in the forestry and logging industry. Carbon sequestration, however, is expected to decrease as the harvested forests will no longer provide the service.

Figure 5



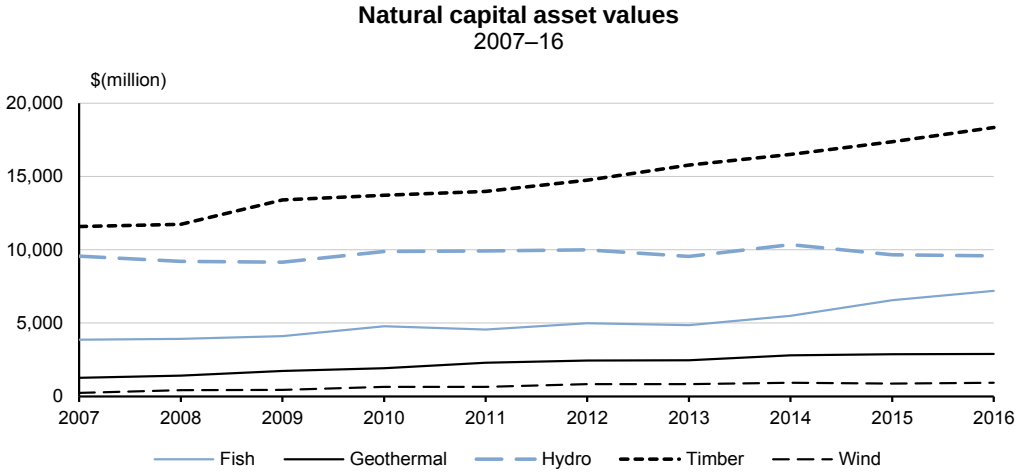
Note: Removals data is year ended 1 April, GDP data is year ended March, and carbon stock data is year ended December. The carbon stock data has been converted to the closest possible March year i.e. December 2010 becomes March 2011. GDP is provisional (P)

Source: Stats NZ

Natural capital: monetary estimates

The accounts for natural capital in monetary terms illustrate the extent to which production is dependent on natural resources in the form of resource rents from the use of natural resources. Rents, the monetary return of natural capital used in production, reflect the income attributable to the natural resource over extraction costs. Resource rents accounted for 53 percent of forestry and logging GDP and 28 percent of electricity, gas, water, and waste, services GDP in 2016. These accounts also provide estimates for the monetary value of the natural resource stock. Asset values are a function of the resource rent, the discount rate, and information on the lifespan of the asset. Our estimates of the asset values of natural resources are currently partial as significant natural resources, such as land, are not yet measured in the environmental-economic accounts. The asset value of natural resources estimated to date amounted to $38.9 billion in 2016 (see figure 6). Timber stocks accounted for nearly half of this value ($18.3 billion), followed by hydro ($9.6 billion) and fish ($7.2 billion). The declining discount rate (i.e. preference for future consumption), along with prices, has driven the increase in the value of the fish stock in the last five years. As the measurement of natural asset values is further developed, these values could be incorporated into the national balance sheets to develop a more comprehensive estimate of national wealth.

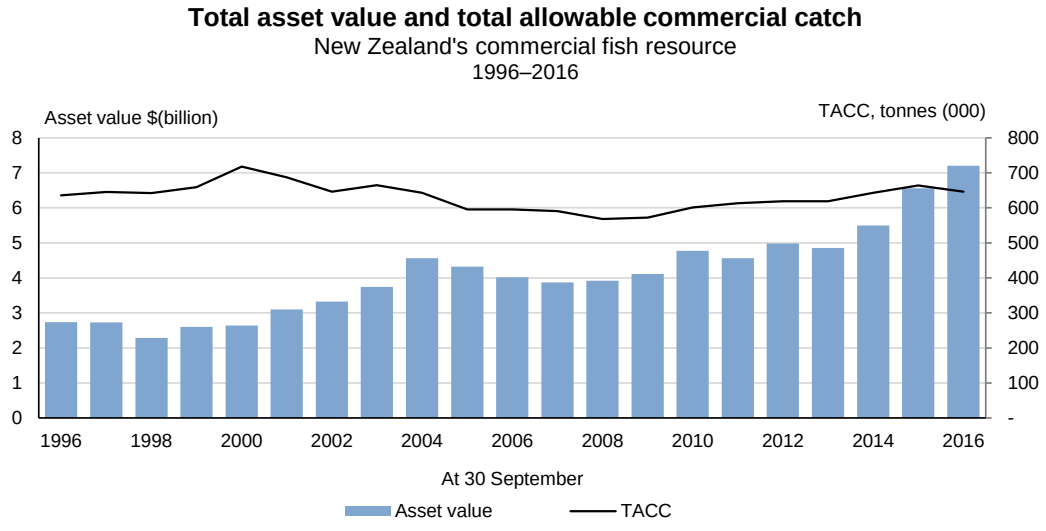
Figure 6



Source: Stats NZ

In the year ended September 2016, the total asset value of New Zealand's commercial fish resource under the QMS was $7.2 billion, a 10 percent increase from the 2015 value of $6.6 billion (figure 7). The total asset value has been increasing steadily since 2013, driven by increases in the value of rock lobster and, to a lesser degree, hoki. The total asset value has now increased 163 percent in the 20 years from 1996 to 2016, or at an annual average growth rate of 5 percent per year. Most fish stocks have a 1 October to 30 September fishing year but some have a year ending in February or April. All fish stocks with a year ending in any given calendar year are counted towards that year's total.

Figure 7



Source: Stats NZ using data from Fishserve

Greenhouse gas emissions by industry

The air emissions account shows the physical flow of greenhouse gases from economic activities. Different greenhouse gases have different effects on warming Earth, through how long they stay in the atmosphere (their 'lifetime') and their ability to absorb energy or trap heat. Carbon dioxide equivalent is a measure used to compare the emissions from various greenhouse gases based upon their global warming potential. Carbon dioxide equivalent emissions from primary industries accounted for 57.1 percent of emissions in 2015, down from 62.0 percent in 1990. Goods-producing industries accounted for 24.8 percent, and service industries 11.1 percent. The service industries contribution, up from 8.1 percent in 1990, reflects the stronger growth in emissions (up 2.2 percent a year) compared with those from primary and goods-producing industries (up 0.5 percent and 1.2 a year, respectively). Households accounted for 6.9 percent of total emissions in 2015, increasing at a rate of 1.1 percent a year from 1990 to 2015.

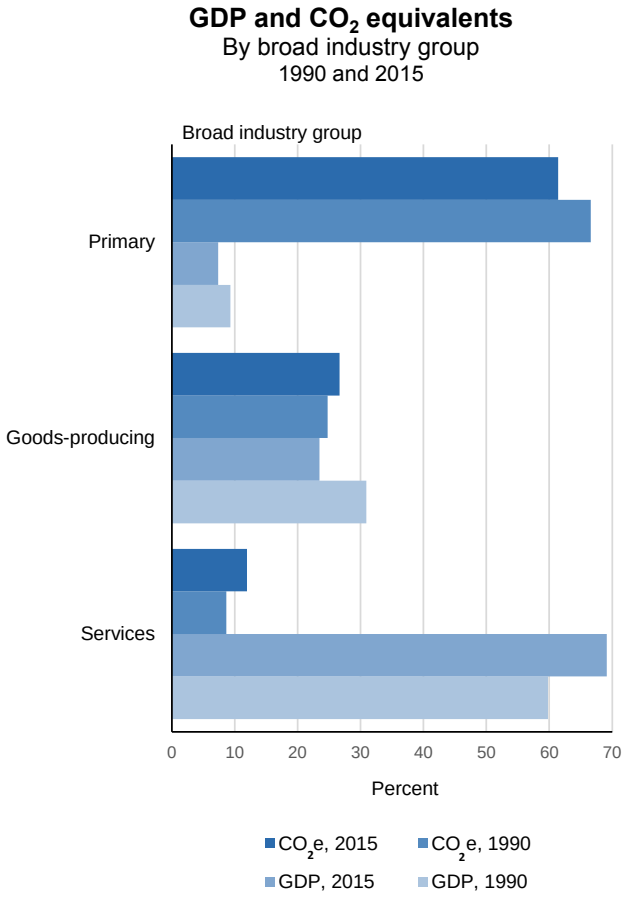
Since 1990, the contribution of service industries to the economy increased from 59.8 percent to 69.1 percent while its contribution to emissions increased less proportionately, from 8.7 percent to 11.9 percent (figure 8). The contribution of the goods-producing sector to the economy decreased from 30.9 percent to 23.5 percent, but its contribution to emissions increased slightly from 24.8 percent to 26.7 percent.

Summary results are presented in figure 9, which compares average growth in carbon dioxide equivalents to average real GDP growth. The size of the bubble indicates the relative contribution to carbon dioxide equivalent emissions in 2015. Industries to the left of the 45-degree line have either decoupled (i.e changed at a different rate) emissions from GDP growth in relative or absolute terms.

The agriculture industry's carbon dioxide equivalent emissions increased 0.6 percent a year, while it's GDP increased by 1.4 percent a year, suggesting relative decoupling. From 1990-2015, five industries recorded a decrease in emissions, three of which did so while increasing economic output, thus showing absolute decoupling. These were: fishing; mining; and transport equipment, machinery and equipment manufacturing.

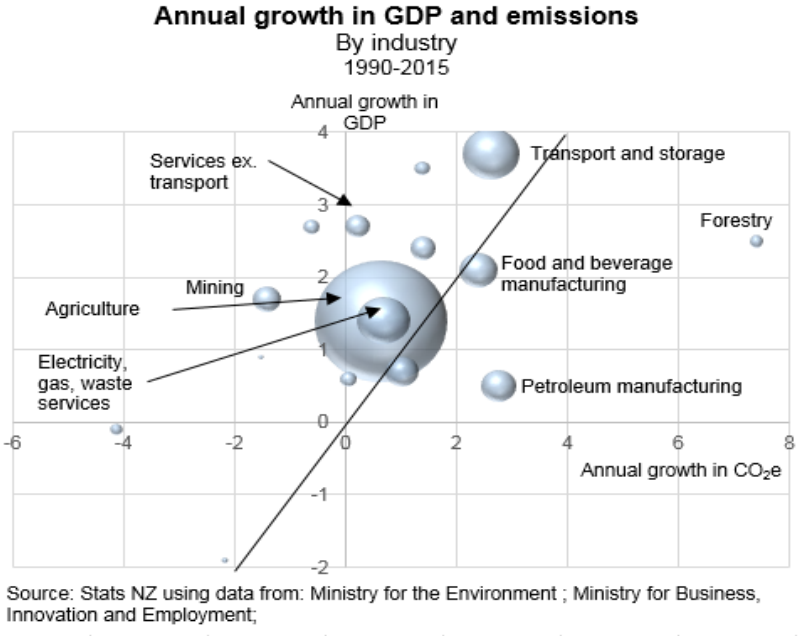
Emissions for industries to the right of the 45-degree line have increased at a faster rate than GDP. These industries include: forestry; food, beverage, and tobacco product manufacturing; petroleum, chemical, polymer, and rubber product manufacturing; metal product manufacturing, and total manufacturing.

Figure 8



Source: Stats NZ using data from Ministry for the Environment and Ministry for Business, Innovation and Employment

Figure 9



Source: Stats NZ using data from: Ministry for the Environment ; Ministry for Business, Innovation and Employment;

Environmental activity accounts

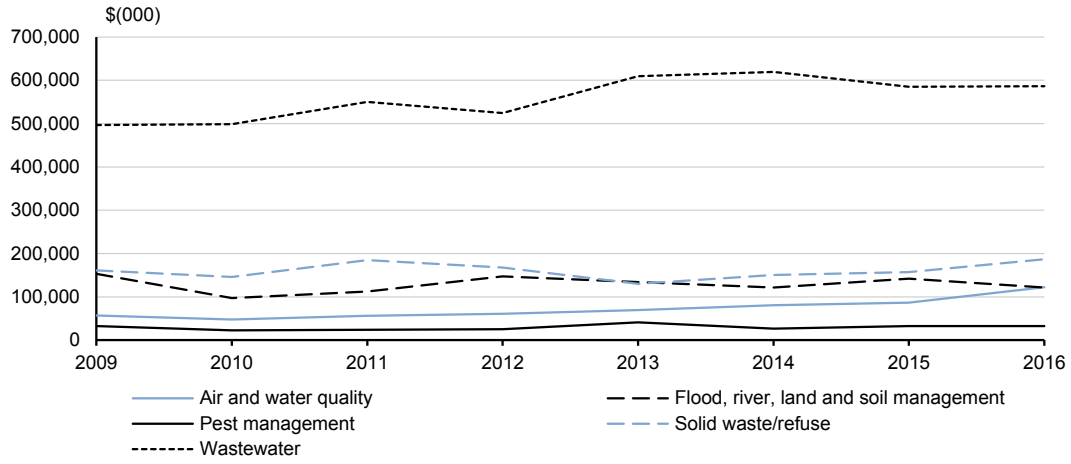
The environmental-economic accounts illustrate the impacts and dependencies of the economy on the environment, but also the government's role in providing goods and services that protect the environment or incentivise agents to minimise environmentally damaging behaviour. The environmental protection expenditure and environmental tax accounts illustrate the extent to which these fiscal instruments are used in New Zealand. Tipper and Harkness (2018), using data from the OECD, show current environmental expenditure and taxation exhibit a significant empirical relationship. Final consumption expenditure on environmental protection by general (i.e central and local) government reached $2.1 billion in 2016, while its environmental investment reached $970 million. In 2016, the total amount of environmental taxes was $4.9 billion, accounting for 6.2 percent of all taxation received by general government.

Central government final consumption expenditure on environmental protection increased 18 percent (or 2.4 percent a year) from 2009 to 2016 reaching $1.0 billion in 2016. Local government environmental protection final consumption expenditure on air and water quality, wastewater, pest management, solid waste and refuse, and flood, river, land, and soil management reached $1.1 billion in 2016 (figure 10), up 17 percent from $901 million in 2009 (a rate of 2.2 percent a year). Wastewater management accounted for 56 percent ($586 million) of local government environmental protection final consumption expenditure, while pest management accounted for 3 percent ($33 million) in 2016.

The share of final consumption expenditure for both central and local government remained relatively constant, with environmental protection expenditure accounting for around 19–21 percent of total final consumption expenditure for local government and 2–3 percent for central government.

Figure 10

Local government final consumption expenditure,
by type of environmental protection expenditure
2009–16



Source: Stats NZ

Summary

The UN System of Environmental-Economic Accounts provide a framework for addressing the shortcomings of the System of National Accounts in addressing environmental concerns. While more development work is needed to compile a complete set of accounts for New Zealand, initial estimates are starting to show the value of natural resources per se to New Zealand's economy, how various economic sectors are contributing to greenhouse gas emissions, and the extent to which fiscal instruments are used to address environmental concerns.

Stats NZ will continue to develop its set of environmental accounts, with plans to measure water, land, and timber use by industry, and begin to develop ecosystem (extent, condition, and service) accounts. Subsequent developments will be incorporated in future releases of the accounts.

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Appendix

Stats NZ's environmental-economic accounting publications

2018	Environmental-economic accounts: 2018
	Environmental-economic accounts: Sources and methods
2017	Asset value of water and other renewables for electricity generation: 2007–15
2016	New Zealand's marine economy: 2007-13

2011	Water physical stock account: 1995-2010
2005	Energy, economy and emissions: 1997-2003
2004	Mineral monetary and physical stock account: 1994-2000
2004	Water monetary stock report: 2003
2003	Environmental protection expenditure account for the public sector, years ended June 2001-June 2003
2003	Physical flow account for fish resources in New Zealand: 1998-2001
2003	Monetary flow account for forestry resources in New Zealand 1996–1999
2002	Physical flow account for forestry resources in New Zealand 1995–2000
2002	Physical stock account for fish resources in New Zealand: 1996-2000
2002	Physical stock account for forestry resources in New Zealand 1995-2000
2002	Environmental protection expenditure account for the public sector, years ended June 2001
2002	Forestry monetary stock account: 1995–2000
2002	Natural resource accounts for New Zealand: Overview Document