



HOUSEHOLD CONSUMPTION

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“Our lifestyles – including the goods and services we use – can affect the environment.”





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HOUSEHOLD CONSUMPTION



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At a glance

Household consumption

Consumption by households affects the environment. Our lifestyle choices, the goods and services we consume, and how these are produced and disposed of all affect the extent and manner of our impact on the environment.

Household purchasing of goods and services is an approximate measure of the pressure households place on the environment through consumption. Therefore, it can be a useful indicator of the impact our lifestyles have on the environment.

Purchasing patterns can change over time. They are influenced by a range of factors such as population size, income, the availability and affordability of goods and services, economic trends, and consumer preferences.

Trends in household consumption expenditure

New Zealand households spent more in 2006 than they spent in 1997. Between 1997 and 2006, real total household consumption expenditure (that is, expenditure adjusted for inflation) increased by \$21,532 million (39 per cent). Over the same period, real per capita household consumption expenditure increased by nearly \$4,000 (26 per cent), and real per household consumption expenditure by just over \$8,700 (20 per cent).

The 39 per cent increase in real total household consumption expenditure compares to an increase in New Zealand's population of around 11 per cent and in real gross domestic product of just over 30 per cent for the same period.

Trends in household expenditure across consumption categories

Real household consumption expenditure (expressed in 1995/1996 prices) across each of the seven consumption categories measured increased between 1997 and 2006, in total, and on a per capita and per household basis.

Since 1997, housing (which excludes mortgage repayments and house purchases), transport, and food and beverages have consistently appeared as the top three consumption categories, in terms of both real and nominal (unadjusted for inflation) total expenditure, expenditure per capita, and per household.

Between 1997 and 2006, most of New Zealanders' spending each year was on housing. In nominal terms, housing was the category on which most money was spent in 2006 (about 18 per cent of total household consumption expenditure, which is a decrease from about 21 per cent in 1997). However, in real terms, in 2006 New Zealanders spent more on food and beverages than on any of the other goods and services categories (\$3,262 per person per year in real terms).

Between 1997 and 2006, expenditure on food and beverages and on household goods and services (for example, electricity, major appliances, and furniture) showed the greatest monetary increases (in real terms): \$3,908 million (\$727 per person) and \$3,768 million (\$768 per person), respectively. Expenditure on household goods and services, clothing and footwear, and food and beverages showed the greatest percentage increases (in real terms) in the same period (about 60 per cent, 59 per cent, and 41 per cent respectively).

Factors affecting household consumption

Rising consumption in New Zealand is likely to be related partly to population growth and to the growing number of households. However, increased household consumption expenditure can also be attributed to increasing consumption over time; that is, more people buying more things, not just more people buying the same things. Increased consumption can mean greater use of natural resources and generation of waste, both of which have implications for the environment.

Our changing ecological footprint

An 'ecological footprint' is one of several tools used to illustrate the pressure placed on the environment by our production and consumption of natural resources.

Between 1998 and 2004, New Zealand's ecological footprint increased from 19.9 million global hectares to 22.9 million global hectares, including imports but excluding exports.

In 2003, New Zealand had a per capita ecological footprint of 5.9 global hectares. This was higher than the Organisation for Economic Co-operation and Development (OECD) average of 5.1 global hectares, and the sixth highest in the OECD.

In addition, as New Zealand has a significant role in exporting goods and services to overseas markets, we export an ecological footprint equating to 15.5 million global hectares. This means that we contribute to the ecological footprint of other countries.

Present and future management

Today, New Zealanders are increasingly aware of the need to reduce the impacts of consumption on the environment, while at the same time improving our standard of living. In the future, this issue is likely to remain a focus in view of the national and global interest in sustainability.

According to the OECD, 'de-coupling environmental pressures from economic growth, while satisfying human needs, is a key challenge for OECD countries over the next few decades' (Organisation for Economic Co-operation and Development, 2002b, p 3).

Introduction

Human pressure on the environment is influenced to a large degree by our lifestyles, including the goods and services we purchase and consume.

An increasing population, economic changes, and changes in people's needs and activities are driving forces that cause changes in production and consumption, and therefore exert pressure on the environment.

In this chapter we look at consumption. At a basic level, consumption can be thought of as buying and/or using things. In a broader sense, consumption can encompass the range of processes, goods, and services that contribute to a final product or service, and even the waste that is generated when the product is used. When we purchase and use a product, it is just one point in its life cycle.

Implications of consumption

New Zealanders' patterns of purchasing and consumption have several implications for the environment. Our purchasing choices directly and indirectly involve the consumption of natural resources and the generation of waste as goods and services are produced and delivered. Our purchasing of goods and services can also be indirectly linked to harmful environmental effects (for example, air pollution caused by manufacturing processes). Therefore, household¹ purchases of goods and services (referred to as 'household consumption expenditure') can be used as an indirect measure of households' consumption of natural resources and the impact of our lifestyles on the environment.

The way we consume goods and services today may affect the future availability of some natural and physical resources, depending on how they are managed. Therefore, patterns of household consumption also have implications for sustainable development (Statistics New Zealand, 2002).

Both the volume and the kinds of things we purchase can influence the effect our consumption has on the environment. For example, people may reduce their home energy use by purchasing more energy-efficient appliances, but this may be offset by an increase in the total number of appliances purchased and used in the home.

NEARLY 300 TONNES OF OLD COMPUTER EQUIPMENT AND MOBILE PHONES WERE COLLECTED FREE-OF-CHARGE DURING NEW ZEALAND'S FIRST NATIONAL 'E-DAY' IN SEPTEMBER 2007.



Source: Ministry for the Environment.

Household consumption

Household consumption includes the goods and services we buy and use on a daily basis in our homes, from appliances to the food and beverages we consume, and the transport we use to make our daily trips to and from home.

Households comprise just one sector of the economy and, arguably, consumption by individual households contributes minimally to environmental degradation. The pressure on the environment caused by a single household may be small compared with the environmental impacts from the industrial, agricultural, or public sectors, but the combined impact of many households is an important contributor to several environmental problems, including water and air pollution, waste generation, and climate change (Organisation for Economic Co-operation and Development, 2002b) (see Table 3.1). As an example, householders are the largest energy user 'sector' in New Zealand when transport fuels are included (see chapter 4, 'Energy').

¹ A 'household' consists of any number of people usually living together in a private dwelling. Households whose members are all temporarily away elsewhere in New Zealand and/or temporarily overseas are included in the definition, but visitors are excluded (Statistics New Zealand, 2007a). The national accounts data used in this chapter for household consumption expenditure, and the number of households in New Zealand, also includes non-private dwellings (for example, hospitals and boarding houses). See also note (3) to Table 3.3.

Household consumption and the environment

Household consumption is a driving force behind the production of goods and services and waste generation, and the resulting effects on the environment. For example, laying down a concrete slab in a backyard may have minimal environmental impact in the local environment, but the production of cement requires energy and releases carbon dioxide.

An assessment of OECD member countries published in 2002 found that impacts on the environment resulting from household activities had grown over the previous three decades, and were expected to intensify over the next two decades, particularly for energy, transport, and waste (Organisation for Economic Co-operation and Development, 2002a).

For New Zealand, 'the two main direct impacts of New Zealand's household consumption on the environment are as a result of energy use (including transport) and waste production' (Statistics New Zealand, 2002, p 73).

+ TABLE 3.1:
SUMMARY OF TRENDS IN AND ENVIRONMENTAL IMPACTS OF HOUSEHOLD WASTE GENERATION AND CONSUMPTION OF ENERGY AND WATER

TRENDS AT HOUSEHOLD LEVEL	DETERMINANTS OF ENVIRONMENTAL IMPACT	ENVIRONMENTAL IMPACT
Growing demand for energy and water services tied to larger homes, and more energy and water appliances	Scale of energy and water use	Greenhouse gas emissions and air and water pollution linked to the generation and use of energy
Growing waste generation and recycling	Energy and water efficiency rates	Water resource depletion and pollution
Diversification of waste stream	Fuel source for heating and electricity generation	Greenhouse gas emissions and air, water, and soil pollution from inappropriate waste management
	Availability and quality of water resources	
	Volume and composition of waste and method of waste disposal	
	Recycling rates and waste prevention	

Source: Adapted from Organisation for Economic Co-operation and Development, 2002b.

National environmental indicator

See chapter 1 'Environmental reporting' for more information on the core national environmental indicators and how they are used.

Household consumption expenditure

Household consumption expenditure is a proxy measure of the pressure that households place on the environment through their consumption. It reports how much money households spend on a variety of goods and services. These goods and services can be grouped into categories as shown in Table 3.2.

+ TABLE 3.2:
DESCRIPTION OF CONSUMPTION CATEGORIES

CATEGORY	DESCRIPTION OF WHAT CATEGORY INCLUDES
Food and beverages	Retail food and alcoholic and non-alcoholic drinks
Clothing and footwear	Clothing, footwear, and footwear repairs
Housing ¹	Rental payments (including rent, rental expenses, wages in kind, maintenance materials, and maintenance services), and imputed rent (where a cash value is ascribed to the services gained from housing, such as shelter, that are not usually exchanged for money)
Household goods and services	Fuel and energy for the home (for example, electricity), furniture, and major appliances (for example, purchases and repairs), textiles (for example, curtains), and tableware (for example, crockery)
Transport	Vehicle operation (for example, petrol, vehicle parts, and repairs), purchased transport (for example, taxi, bus, rail, and aeroplane fares), and vehicles purchased
Recreation and education ²	A complete data set for this category is not available
Hotels and restaurants	Takeaways and food and beverages purchased in restaurants, and accommodation
Other goods and services	Personal goods and services, post and telephone, and services not classified elsewhere
Health and medical goods and services ²	A complete data set for this category is not available

Notes:

- (1) Housing excludes mortgage payments and house purchases. Mortgage payments are not included in any of these categories.
- (2) Complete data sets for the categories recreation and education, and health and medical goods and services are not available, so these categories have only a basic analysis in this chapter: nominal data has been used to determine the combined total of these two categories in current price terms, and these figures are included in Table 3.3.

Data source: Adapted from Statistics New Zealand, pers comm.

There is one national environmental indicator for reporting on household consumption. It provides information on household consumption expenditure.

To report on the indicator, data on expenditure is presented against the following seven consumption categories from Table 3.2:

- food and beverages
- clothing and footwear
- housing
- household goods and services
- transport
- hotels and restaurants
- other goods and services.

Real and nominal data

Both real and nominal data have been used in this chapter.

Real data has been adjusted to remove the impact of price change (that is, inflation). A time series expressed in real terms relates to the underlying volumes of goods and services being bought and sold over time. The real household consumption expenditure figures in this chapter are based on a constant price (expressed in 1995/1996 prices), chain-linked series.

Nominal data is based on current prices and not adjusted for inflation.

Limitations of the indicator

The amount of money spent on the purchase of household goods and services is not necessarily a direct measure of the environmental impacts of these goods and services. This is because the links between consumption, economic growth, and environmental impact are not straightforward (see, for example, Haas et al, 2005; Organisation for Economic Co-operation and Development, 1999; and Yandle et al, 2004). For example, although economic activity influences our use of natural resources, economic growth can also provide the means to address environmental concerns (Statistics New Zealand, 2002). Another example is where producers and consumers can reduce the environmental impact of household consumption by making or purchasing more resource-efficient products.

Current pressures and trends

In terms of the effects of household consumption on the environment, two important aspects of household consumption expenditure are:

- the volume of household consumption expenditure – that is, how much money is spent (as an indication of the volume of consumption)
- household consumption expenditure across consumption categories – that is, spending patterns (the kinds of products and services that are consumed).

Household consumption expenditure, 2006

Between 1 April 2005 and 31 March 2006, New Zealand households spent about \$91 billion (in nominal prices) on goods and services (see Table 3.3). Each New Zealander spent about \$22,000, and each household spent about \$61,700.

The top three consumption categories (excluding the combined recreation and education, and health and medical goods and services category) were food and beverages, housing, and transport.

+ TABLE 3.3:
HOUSEHOLD CONSUMPTION EXPENDITURE IN NOMINAL FIGURES, YEAR ENDED 31 MARCH 2006

CATEGORY	HOUSEHOLD CONSUMPTION EXPENDITURE (\$ MILLIONS)	PROXY PER CAPITA EXPENDITURE (\$)	PROXY PER HOUSEHOLD EXPENDITURE (\$)
Food and beverages	16,159	3,931	10,929
Clothing and footwear	4,424	1,076	2,992
Housing	17,198	4,184	11,632
Household goods and services	10,248	2,493	6,931
Transport	13,618	3,313	9,210
Hotels and restaurants	7,204	1,753	4,872
Other goods and services	10,018	2,437	6,775
Recreation and education, and health and medical goods and services	15,481	3,766	10,470
Total	91,235	22,197	61,705

Notes:

- (1) Numbers are rounded to the nearest dollar.
- (2) The categories recreation and education, and health and medical goods and services were calculated as a combined group, because complete data sets for the individual categories were unavailable (see note 2 to Table 3.2).
- (3) Household consumption expenditure in each category includes purchasing by New Zealanders and people visiting New Zealand, but excludes New Zealand resident household expenditure while overseas. Figures for total household consumption expenditure do not include expenditure by people visiting New Zealand, but do include New Zealand resident household expenditure while overseas.

Data sources: Adapted from Statistics New Zealand, 2007b; 2007d; Statistics New Zealand, pers comm.

Trends in household consumption expenditure

Total household consumption expenditure has been increasing since 1993, although the rate of change has varied from year to year (see Figure 3.1). Total real household consumption expenditure increased about 65 per cent from 1993 to 2006. However, this increase is smaller on a per capita basis (about 42 per cent), because it takes increases in population into account.

Between 2004 and 2006, the percentage change in per capita household consumption expenditure exceeded the percentage change in per capita gross domestic product (see Figure 3.1).

On average, every New Zealander spent more on household expenditure in 2006 than they did in 1993. This is consistent with what has happened in other Organisation for Economic Co-operation and Development (OECD) countries – according to the OECD, ‘per capita private consumption has increased steadily in OECD countries over the last two decades, and is expected to continue to follow GDP growth in the period to 2020’ (Organisation for Economic Co-operation and Development, 2002b, p 3).

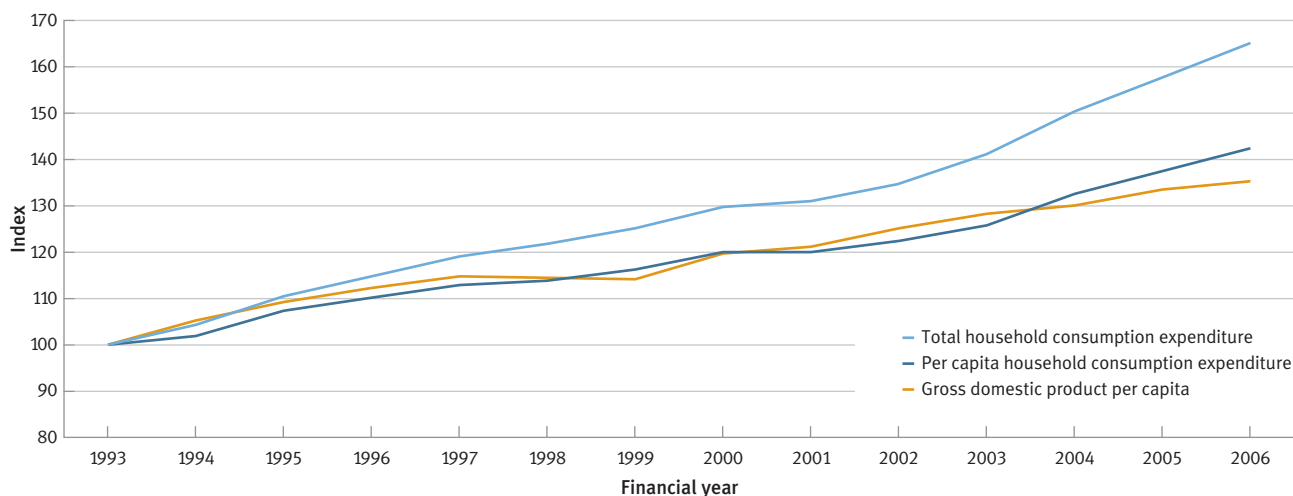
Between 1997 and 2006, real total household consumption expenditure increased by \$21,532 million (39 per cent). Over the same period, real per capita household consumption expenditure increased by nearly \$4,000 (26 per cent), and real per household consumption expenditure by just over \$8,700 (20 per cent) (see Table 3.4).

Trends in household expenditure by consumption category

Real household consumption expenditure (expressed in 1995/1996 prices) across all categories increased between 1997 and 2006 (see Table 3.4 and Figure 3.2).

+ FIGURE 3.1:

CHANGE IN TOTAL HOUSEHOLD CONSUMPTION EXPENDITURE, PROXY HOUSEHOLD CONSUMPTION EXPENDITURE PER CAPITA, AND GROSS DOMESTIC PRODUCT PER CAPITA, 1993–2006 (MARCH FINANCIAL YEARS, REAL DATA)



Note:

The graph is indexed to 1993.

Data sources: Adapted from Statistics New Zealand, 2007b; 2007c; 2007e.

+ TABLE 3.4:
REAL HOUSEHOLD CONSUMPTION EXPENDITURE (EXPRESSED IN 1995/1996 PRICES), IN 1997 AND 2006 (MARCH FINANCIAL YEARS)

CATEGORIES	1997	2006	PERCENTAGE CHANGE BETWEEN 1997 AND 2006 (%)
FOOD AND BEVERAGES			
Real household consumption expenditure (\$ millions)	9,501	13,409	41.1
<i>Proxy per capita real household consumption expenditure (\$)</i>	<i>2,535</i>	<i>3,262</i>	<i>28.7</i>
<i>Proxy per household real consumption expenditure (\$)</i>	<i>7,414</i>	<i>9,069</i>	<i>22.3</i>
CLOTHING AND FOOTWEAR			
Expenditure (\$ millions)	2,674	4,249	58.9
<i>Per capita (\$)</i>	<i>714</i>	<i>1,034</i>	<i>44.9</i>
<i>Per household (\$)</i>	<i>2,087</i>	<i>2,874</i>	<i>37.7</i>
HOUSING			
Expenditure (\$ millions)	11,404	13,188	15.6
<i>Per capita (\$)</i>	<i>3,043</i>	<i>3,209</i>	<i>5.4</i>
<i>Per household (\$)</i>	<i>8,899</i>	<i>8,919</i>	<i>0.2</i>
HOUSEHOLD GOODS AND SERVICES			
Expenditure (\$ millions)	6,307	10,075	59.7
<i>Per capita (\$)</i>	<i>1,683</i>	<i>2,451</i>	<i>45.6</i>
<i>Per household (\$)</i>	<i>4,921</i>	<i>6,814</i>	<i>38.5</i>
TRANSPORT			
Expenditure (\$ millions)	9,361	12,480	33.3
<i>Per capita (\$)</i>	<i>2,498</i>	<i>3,036</i>	<i>21.5</i>
<i>Per household (\$)</i>	<i>7,305</i>	<i>8,441</i>	<i>15.6</i>
HOTELS AND RESTAURANTS			
Expenditure (\$ millions)	4,206	5,481	30.3
<i>Per capita (\$)</i>	<i>1,122</i>	<i>1,333</i>	<i>18.8</i>
<i>Per household (\$)</i>	<i>3,282</i>	<i>3,707</i>	<i>12.9</i>
OTHER GOODS AND SERVICES			
Expenditure (\$ millions)	6,158	8,482	37.7
<i>Per capita (\$)</i>	<i>1,643</i>	<i>2,064</i>	<i>25.6</i>
<i>Per household (\$)</i>	<i>4,805</i>	<i>5,737</i>	<i>19.4</i>
TOTAL			
Expenditure (\$ millions)	55,835	77,367	38.6
<i>Per capita (\$)</i>	<i>14,900</i>	<i>18,823</i>	<i>26.3</i>
<i>Per household (\$)</i>	<i>43,569</i>	<i>52,326</i>	<i>20.1</i>

Notes:

- (1) Dollar figures have been rounded to the nearest dollar.
- (2) Percentages have been rounded to one decimal place.
- (3) Household consumption expenditure in each category includes purchasing by New Zealanders and people visiting New Zealand, but excludes New Zealand resident household expenditure while overseas. Figures for total household consumption expenditure do not include expenditure by people visiting New Zealand, but do include New Zealand resident household expenditure while overseas.
- (4) Expenditure on fuel for transportation (for example, petrol for cars) is included in the transport category (see Table 3.2).
- (5) Expenditure on fuel and energy for the home (for example, electricity) is included in the household goods and services category (see Table 3.2).
- (6) Rent, but not mortgage payments, is included in the housing category (see Table 3.2).

Data sources: Adapted from Statistics New Zealand, 2007b; 2007c; Statistics New Zealand, pers comm.

In 1997, in real terms, New Zealanders spent most on housing (excluding mortgage repayments or the purchase of houses – see Table 3.2), and the second highest amount on food and beverages. In 2006, that had reversed (see Figure 3.2). The relative ranking of the other categories remained the same.

When the data is not adjusted for inflation, housing remains the category on which most was spent in 2006 (see Table 3.3).

Since 1997, housing (which excludes mortgage repayments and house purchases), transport, and food and beverages have consistently appeared as the top three consumption categories, in terms of both real and nominal total expenditure, expenditure per capita, and per household expenditure.

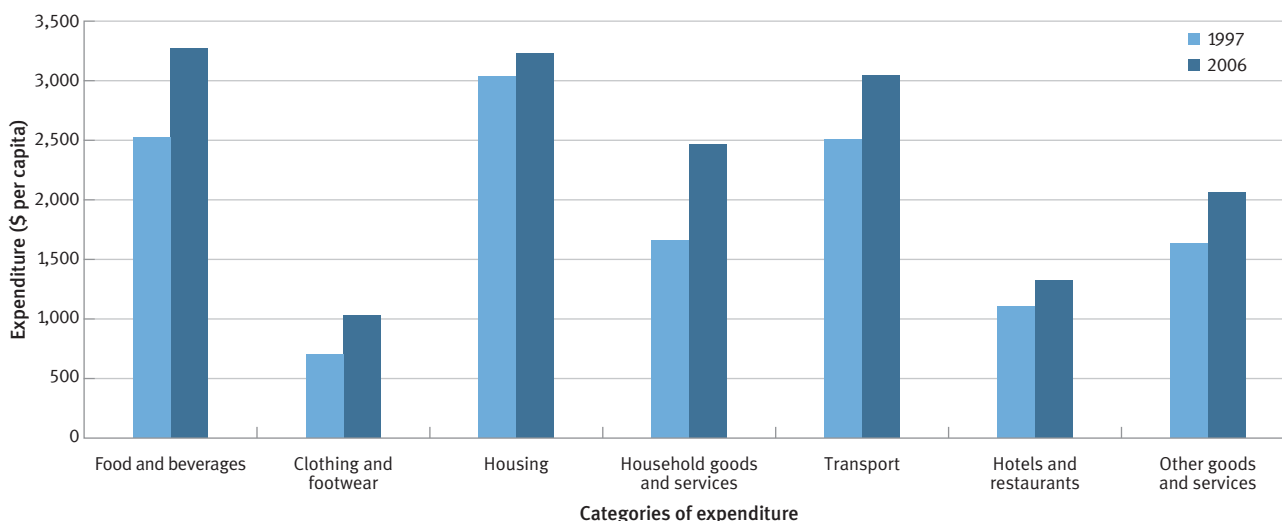
Between 1997 and 2006, expenditure on food and beverages and on household goods and services showed the greatest monetary increases (in real terms): increases of \$3,908 million (\$727 per person) and \$3,768 million (\$768 per person), respectively.

In percentage terms, between 1997 and 2006, New Zealanders' real total spending increased the most on household goods and services (about 60 per cent), clothing and footwear (nearly 59 per cent), and food and beverages (about 41 per cent) (see Figure 3.3). Housing (which excludes mortgage repayments and house purchases), showed the least percentage increase, with comparatively low increases of 15.6 per cent overall, 5.4 per cent per capita, and 0.2 per cent per household.

Between 1997 and 2006, total real expenditure in each of the categories except housing increased by a greater percentage than did gross domestic product (see Figure 3.3) (although hotels and restaurants was only marginally higher).

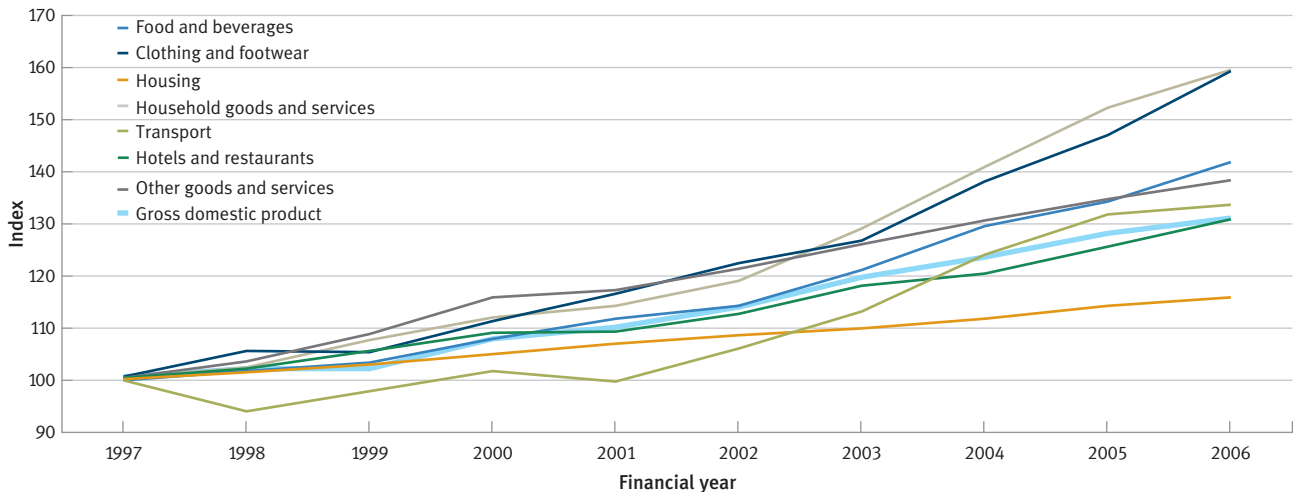
In nominal terms the greatest percentage increases in total spending on each category were for hotels and restaurants (about 68 per cent), food and beverages (about 67 per cent), and clothing and footwear (about 66 per cent). Household goods and services, and other goods and services also showed increases of more than 50 per cent.

+ FIGURE 3.2:
PROXY REAL HOUSEHOLD CONSUMPTION EXPENDITURE PER CAPITA, IN 1997 AND 2006 (MARCH FINANCIAL YEARS)



Note:
Data is expressed in 1995/1996 prices.
Data sources: Adapted from Statistics New Zealand, 2007b; 2007c.

+ FIGURE 3.3:

CHANGE IN REAL HOUSEHOLD CONSUMPTION EXPENDITURE BY CATEGORY, AND REAL GROSS DOMESTIC PRODUCT, 1997–2006 (MARCH FINANCIAL YEARS)

Note:

The graph is indexed to 1997.

Data sources: Adapted from Statistics New Zealand, 2007c; 2007e.

Changes in the proportion of spending in each category over time can indicate how New Zealanders' spending preferences are changing. Nominal data was used to calculate these percentages, so the changes reflect nominal rather than real figures (Statistics New Zealand, 2007d). Overall, the proportion of spending on each category did not change greatly between 1997 and 2006. Generally, between 1997 and 2006, New Zealanders spent the greatest proportions of overall expenditure on housing, food and beverages, and transport.

In 2006, housing comprised 18 per cent of total household consumption expenditure, which is a decrease from nearly 21 per cent in 1997. Housing, transport, and other goods and services are the only categories to have decreased as a percentage of total spending since 1997.

Factors that affect household consumption

A variety of factors can influence household expenditure patterns at individual and national levels, and, consequently, the degree to which our consumption affects the environment. Our purchasing patterns change as our lifestyles change, as the size of our families and homes change, and as our population and economy grows.

Factors that can influence household consumption expenditure patterns include lifestyle changes, emerging technologies, marketing campaigns, and changes in styles and tastes.

Other factors, discussed in more detail in this chapter, are:

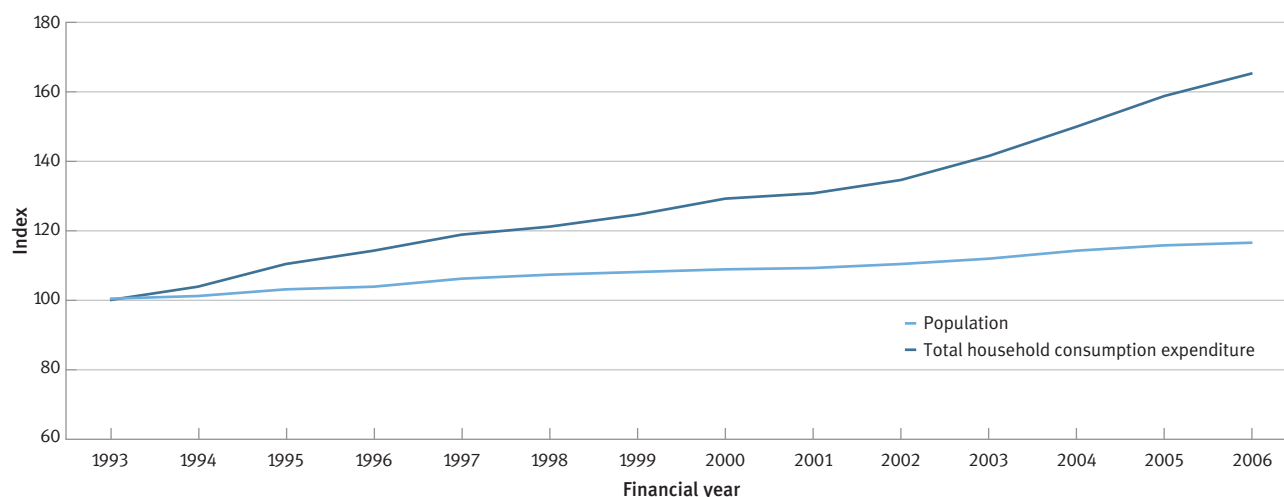
- population
- the number of households and household size
- the availability and affordability of goods and services
- economic growth and income levels
- individual choices.

Population

Between 1993 and 2006, New Zealand's population increased about 16 per cent and the estimated number of households increased about 22 per cent. While these increases could be expected to cause household consumption expenditure to rise, total expenditure has been increasing at a comparatively greater rate than the population has been increasing.

Total household consumption expenditure increased about 65 per cent between 1993 and 2006 (see Figure 3.4), suggesting that rising household consumption expenditure is not solely the result of having a larger population or more households. In other words, New Zealanders are spending relatively more now than they were spending 10 years ago.

+ FIGURE 3.4:

CHANGE IN POPULATION AND REAL TOTAL HOUSEHOLD CONSUMPTION EXPENDITURE, 1993–2006 (MARCH FINANCIAL YEARS)

Note:

The graph is indexed to 1993.

Data sources: Adapted from Statistics New Zealand, 2007b, 2007c.

Households and household size

Between 1997 and 2006, the number of households in New Zealand increased, while the average number of people living in each household decreased slightly. Overall, the trend has been towards larger dwellings with fewer occupants (Statistics New Zealand, 2003).

Data from the 2006 census shows that the average number of people per household marginally declined from 1996 to 2006, from 2.8 people per household to 2.7 people per household (Statistics New Zealand, 2007f).

Over the same period, the proportion of one-person households in New Zealand increased from nearly 21 per cent (256,569) to 23 per cent (328,299) of households (Statistics New Zealand, 2007f).

Without any resource-efficiency measures, such as energy-efficient fit-outs and appliances, larger houses can be expected to consume more resources. At the same time, smaller households (fewer people occupying a housing unit) 'generally use more space, energy, and water, and generate more waste per person' than do larger households (European Environment Agency, 2005).

Availability and affordability of goods and services

Consumers base their purchasing decisions on a wide range of factors, but the products and services that are available determine what consumers can buy. Over recent years, the variety of goods available for households to purchase has increased, and many goods have also become more affordable. As in other countries, New Zealanders have access to 'a steadily expanding range of low-priced, mass-produced goods and access to a progressively more global marketplace' (Organisation for Economic Co-operation and Development, 2002b, p 6).

Such trends can change not only the volume of household consumption, but also the kinds of goods households purchase. For example, in some cases it may become more affordable to buy something new rather than to repair it. As another example, the choices households make regarding transport can be affected by factors such as the price of petrol, or the availability of various transport options. The greater variety of products for consumers to buy is also reflected in an increase in the availability and variety of 'eco-friendly' products and services.

Eco-labelling schemes

Labelling schemes that identify products that meet certain ‘eco-friendly’ criteria can inform consumers’ purchasing choices.

Environmental Choice New Zealand

Environmental Choice New Zealand is a voluntary eco-labelling programme owned by the Government and run independently by the New Zealand Ecolabelling Trust. Products must meet publicly available criteria, based on life-cycle principles, that have been developed to international standards and are designed to indicate ‘environmental preferability’. Products that achieve the appropriate standards are entitled to use the Environmental Choice label (Environmental Choice New Zealand, no date).

Energy

ENERGY STAR is an independent, international label that indicates which products are the most energy efficient in a product category. Products displaying the blue ENERGY STAR mark have to meet stringent energy efficiency standards. At present, the ENERGY STAR mark can be found on the most energy efficient heat pumps, washing machines, dishwashers, computers, imaging equipment, and home electronics. More products will be added over the coming years (Energy Efficiency and Conservation Authority, no date).

Energy rating label. Consumers can compare the energy consumption of different appliances by the number of stars on the energy rating label (the more stars, the better the efficiency of the model). In New Zealand, it is mandatory to display this label on whiteware (refrigerators and freezers, washing machines, dishwashers, and dryers), and heat pumps (Energy Efficiency and Conservation Authority, pers comm).



Source: Courtesy of the Energy Efficiency and Conservation Authority.



Source: Courtesy of the Energy Efficiency and Conservation Authority.

Economic growth and income levels

Economic growth and household consumption growth are closely linked, and have followed similar trends. Higher levels of income mean greater discretionary spending (that is, money available to spend on consumables beyond the basic necessities) and a greater ability to purchase more and/or higher-priced goods. Between 1997 and 2006, New Zealand's economy grew by just over 30 per cent in real terms (Statistics New Zealand, 2007e) and real household consumption expenditure increased 38.6 per cent (see Table 3.4).

Between 1997 and 2006, total real expenditure in each of the categories, except housing, increased by a greater percentage than gross domestic product (see Figure 3.3) (although hotels and restaurants was only marginally higher).

Individual choices

By making environmentally conscious decisions, such as choosing appliances or vehicles that are more energy efficient, people can reduce the effects of their consumption on the environment. The opposite is true when household activities increase energy consumption or generate more waste that needs disposal.

Even when improvements are made in energy efficiency, reductions in environmental impacts may be offset by the overall increases in the volume of goods and services consumed (Organisation for Economic Co-operation and Development, 2002b).

While using energy-efficient appliances may not necessarily result in reduced energy consumption, it may have benefits such as people's health improving as a result of living in warmer homes.

LOCAL ACTION to reduce household consumption

Hamilton Energy Blitz

Over the month of May 2007, Hamilton Environment Centre, supported by Hamilton City Council and Environment Waikato, ran what was called an 'energy blitz' in Hamilton City – a month of events focusing on encouraging energy efficiency and reducing energy use in the home (Environment Waikato, no date).

Promoting energy efficiency in the home is one way of helping to reduce household energy consumption. (For a discussion of the environmental implications of energy consumption, see chapter 5, 'Energy'.)

Sustainable Living Programme

The Sustainable Living Programme was developed by eight local and regional councils, led by Marlborough District Council, with involvement from community groups and high schools. The programme now runs evening classes in 20 regions and cities, and has a website with information about practical steps that can be taken to improve sustainability at the household level. The programme is intended to encourage consumers to make informed choices about how their activities and purchases impact on the environment (Sustainable Living Programme, no date).

Green business

Many businesses, such as those in the tourism sector, are starting to take action to become more environmentally sustainable, including by reducing their carbon footprint. They may market these actions as a point of difference from their competitors, or join a recognised eco-labelling scheme (see box, 'Eco-labelling schemes' on the previous page). Such actions by businesses allow consumers to make a more informed choice about what they buy, based on the environmental pressures or impacts of those products and services. Indirectly, the 'green business' movement can reduce the environmental impacts of household consumption.

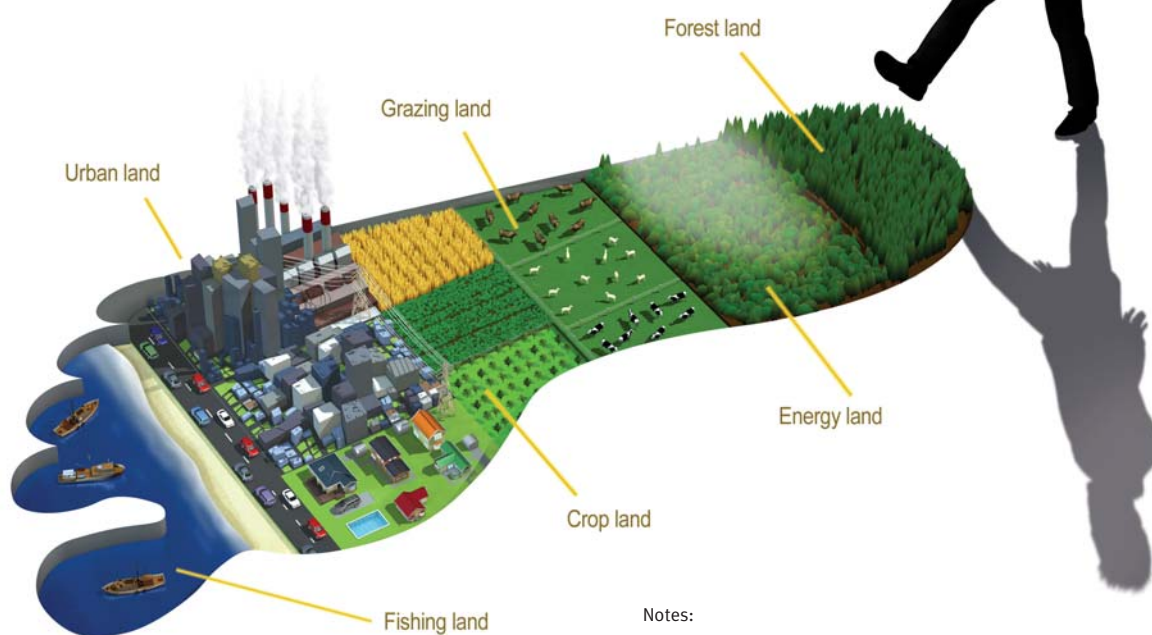
Ecological footprint

An 'ecological footprint' is one of several tools that may be used to illustrate the pressure placed on the environment by our production and consumption of natural resources (see box 'More about sustainability indices'). The larger a population's ecological footprint, the more natural resources that are needed to sustain that population's lifestyle.

An ecological footprint estimates the amount of productive land and sea area² that is required to support the lifestyle of a particular population (for example, a country, region, or household). This includes the land needed to produce food and fibre and other goods and services, and to support infrastructure and housing. It also includes the area of land that is needed to absorb carbon dioxide emissions (see Figure 3.5).

The ecological footprint can be used to show whether a population's demand for natural resources exceeds the supply of those resources – that is, whether a population is living within its land's ecological carrying capacity. In this way, an ecological footprint can be used as a proxy measure of the environmental sustainability of a population's lifestyle.

+ FIGURE 3.5:
COMPOSITION OF AN ECOLOGICAL FOOTPRINT



Notes:

- (1) 'Energy land' is defined as the theoretical amount of land required to be planted in exotic forests to absorb our carbon dioxide emissions.
- (2) 'Fishing land' is the area required to support the fishing industry and the production of seafood.

Source: Ministry for the Environment.

² For the purposes of this section, the area of productive land and sea are referred to collectively as 'land'.

More about sustainability indices

The ecological footprint is just one measure of environmental sustainability. Other tools that may be used to measure and aggregate environmental performance indicators include the Environmental Sustainability Index (ESI) and Environmental Performance Index (EPI).

The ESI reports against five indicators: environmental systems, environmental stresses, human vulnerability to environmental risk, social and institutional capacity to respond to issues, and global stewardship.

The EPI records performance against targets in areas such as environmental health, air quality, water resources, biodiversity and habitat, sustainable energy, and productive natural resources, and is narrower in focus than the ESI (Department of Environment and Conservation, 2006).

+ TABLE 3.5:

PERFORMANCE OF SELECTED COUNTRIES AGAINST SELECTED SUSTAINABILITY INDICES

COUNTRY	ECOLOGICAL FOOTPRINT (2003)		ENVIRONMENTAL SUSTAINABILITY INDEX (2005)		ENVIRONMENTAL PERFORMANCE INDEX (2005)	
	Size (hectares per capita)	Rank (1=worst) ^(a)	Score (1-100)	Rank (1=best) ^(b)	Score (1-100)	Rank (1=best) ^(c)
United States	9.6	2	52.9	45	78.5	28
Canada	7.6	4	64.4	6	84.0	8
Australia	6.6	6	61.0	13	80.1	20
Finland	7.6	3	75.1	1	87.0	3
New Zealand	5.9	9	60.9	14	88.0	1
United Kingdom	5.6	14	50.2	65	85.6	5
Sweden	6.1	8	71.7	4	87.8	2
Spain	5.4	15	48.8	76	79.2	23
Russia	4.4	25	56.9	31	79.4	22
Germany	4.5	23	53.7	40	78.7	27
Netherlands	4.4	26	56.1	33	77.5	32
Japan	4.4	27	57.3	30	81.9	14
South Africa	2.3	53	46.2	93	62.0	76
Argentina	2.3	55	62.7	9	77.7	30
Brazil	2.1	58	62.2	11	77.0	34
China	1.6	69	38.6	133	56.2	94
Total number of countries measured		149		146		133

Note:

(a) 10 largest ecological footprints: United Arab Emirates, United States, Finland, Canada, Kuwait, Australia, Estonia, Sweden, New Zealand, and Norway.

(b) 10 best performing ESI countries: Finland, Norway, Uruguay, Sweden, Iceland, Canada, Switzerland, Guyana, Argentina, and Austria.

(c) 10 best performing EPI countries: New Zealand, Sweden, Finland, Czech Republic, United Kingdom, Austria, Denmark, Canada, Malaysia, and Ireland.

Some of these countries are not listed in Table 3.5.

Data sources: Adapted from Global Footprint Network, 2006; Esty et al, 2005; Esty et al, 2006.

New Zealand's changing footprint

Population growth is a key influence on the size of an ecological footprint. In addition, as an economy grows, so too does its ecological footprint. The wealthier a country or region is, the higher levels of material affluence and consumption of goods and services it has (Ministry for the Environment, no date).

Between the 1998 and 2004 March financial years, New Zealand's ecological footprint is estimated to have increased 15.4 per cent, from 19.9 million global hectares to 22.9 million global hectares (Ministry for the Environment, no date). This was accompanied by an increase in the ecological footprint of each of New Zealand's 16 regions (as defined by regional authority area).

On a per capita basis, New Zealand's ecological footprint increased from 5.24 global hectares in 1998 to 5.65 global hectares per person in 2004, which is an increase of 7.8 per cent (Ministry for the Environment, no date).

Trade and New Zealand's ecological footprint

In 2007, the Ministry for the Environment estimated New Zealand's 2004 biocapacity to be 58.2 million global hectares. With an ecological footprint of 22.9 million global hectares, the New Zealand population uses 39.4 per cent of its available biocapacity. This indicates that New Zealand is living within its ecological carrying capacity, as measured by the ecological footprint tool.

However, New Zealand's ecological footprint does not include the amount of land used to produce goods and services for export. These goods and services are included in the importing country's ecological footprint.

New Zealand's 'ecological balance of trade' highlights that we are a significant exporter of goods and services to the rest of the world. At 15.5 million global hectares, the area of land used for the production of our exports is just over twice that used for our imports (Ministry for the Environment, no date).

International ecological footprints

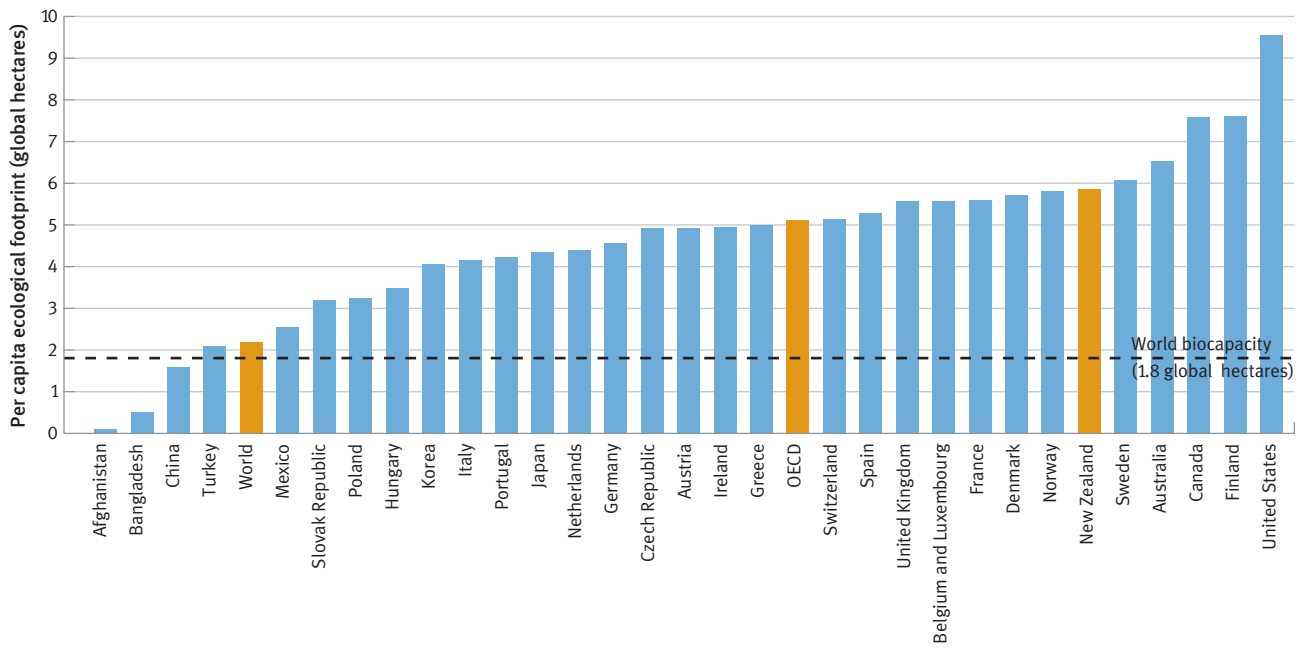
The ecological footprint provides a useful tool to compare relative environmental pressures across countries. Figure 3.6 shows that in 2003 New Zealand had the sixth largest per capita ecological footprint within the Organisation for Economic Co-operation and Development (OECD) at 5.9 global hectares. The OECD average at that time was 5.1 global hectares per person.

In 2003, New Zealand's ecological footprint was larger than the global average per capita footprint of 2.2 global hectares per person³; which is also higher than the earth's estimated biocapacity of 1.8 global hectares per person (Global Footprint Network, 2006).

Note that the ecological footprint for New Zealand calculated by the OECD differs from that estimated in New Zealand due to different calculation methodologies.

³ This includes the per capita ecological footprints of all countries with populations of 1 million or more for which data is available, including the significantly smaller footprints of developing countries such as Afghanistan (0.1 hectare) and Bangladesh (0.5 hectare) (Global Footprint Network, 2006).

+ FIGURE 3.6:
COMPARISON OF PER CAPITA ECOLOGICAL FOOTPRINTS OF OECD COUNTRIES IN 2003, INCLUDING OECD AND WORLD AVERAGES



Notes:

- (1) No data is available for Iceland.
- (2) Belgium and Luxembourg have been grouped together for the purposes of this figure.
- (3) Afghanistan, Bangladesh, and China are not members of the OECD, but have been included to provide a global scale.

Data source: Adapted from Global Footprint Network, 2006.

Changes since the 1997 report

The 1997 report, *The State of New Zealand's Environment 1997* (Ministry for the Environment, 1997), reported on production and consumption patterns, but not on household consumption. As an indicator of the state of and trends in one of the pressures on our environment, household consumption is a relevant addition to the present report.

Influences on household consumption expenditure

New Zealand's real household consumption expenditure increased between 1997 and 2006 overall, on a per capita basis, and on a per household basis. This continues a longer trend of increasing consumption. Expenditure (in dollar terms) in total, per capita, and per household, increased in all seven categories measured.

Since 1997, there have been a number of changes to the influences on the way New Zealand households spend money. For example, population growth and an increase in the number of households have contributed to increases in the nominal volume of household consumption expenditure. Trends towards smaller households and larger houses may have contributed to increases in household consumption expenditure per household and per person. The increasing availability and affordability of goods and services has implications for both the volume and the kinds of goods purchased, as do economic, cultural, and social changes.

Impact of household consumption on the environment

The impacts on the environment of New Zealand households' consumption cannot currently be accurately quantified, either overall or within the various consumption categories. However, consumption is one of the driving forces behind the pressures people place on the environment. Therefore, it can be used as an indicator of the effect we have on the environment.

As noted above, New Zealand's household consumption expenditure per person has increased since 1997. It can be inferred that this increasing consumption is driving an increase in environmental pressures.

Household consumption choices

The pressures that consumption can bring to bear on the environment can be influenced by the volume of goods and services we consume and the kinds of things we consume. For example, if we purchase goods and services that are more environmentally friendly, we can reduce the impact of our consumption on the environment.

Environmental awareness has created demand for particular kinds of products, such as reusable shopping bags, and energy-efficient cars and appliances. New technologies introduced in recent years also affect the types of products available for us to purchase (for example, hybrid cars), and the way we make those purchases (for example, internet purchasing).

It is important to note, however, that the gains made by making the consumption process more sustainable or less detrimental to the environment (for example, by households using energy-efficient appliances) can be offset if the overall level of consumption increases.

GOVERNMENT ACTION on sustainability

sustainability

.govt.nz

Six flagship sustainability initiatives were introduced in February 2007 to help move New Zealand towards greater environmental sustainability, including at the household level.

Household Sustainability Programme

The Household Sustainability Programme focuses on helping New Zealanders take practical action in and around the home, particularly in the areas of energy, water, waste, building and renovating, and transport.

Business Partnerships for Sustainability

The Business Partnerships for Sustainability initiative aims to promote and develop the adoption of sustainable business practices in New Zealand. In doing so, the initiative will help position New Zealand as a world-leader in smart, innovative, and business-savvy responses to environmental issues.

Towards a Carbon Neutral Public Service

Six central government departments have committed to the goal of being carbon neutral by 2012, and it will be mandatory for the remaining 28 agencies to be working towards carbon neutrality by this time. Carbon neutrality involves:

- measuring all greenhouse gas emissions associated with energy, transport, and waste to landfill
- developing plans to reduce emissions
- offsetting unavoidable emissions through New Zealand-based projects.

Sustainable Government Procurement

A new sustainable government procurement policy was launched in August 2007 to bring sustainability to the core of government procurement policy and practice. Government departments must now consider the environmental credentials of goods and services they buy against mandated standards, guidelines, and targets.

Through this initiative, the Government will use its purchasing power to drive the market for environmentally-friendly goods and services. The new policy will ensure government departments purchase goods and services that are water and energy efficient, emit low levels of greenhouse gases, produce less waste, and are environmentally certified, wherever possible.

Enhanced Eco-Verification

The Enhanced Eco-Verification programme will support sustainable procurement by enabling firms to measure and reduce their environmental and carbon footprints through verified programmes, including certified eco-labelling programmes. (For more information on eco-labelling, see box 'Eco-labelling schemes'.)

Towards Zero Waste

The Towards Zero Waste initiative seeks to establish a network of recycling facilities in public areas, particularly in larger cities and high-profile tourist destinations, and at large events. It complements a broad range of waste minimisation and management initiatives underway at the national and local level.

The future

In the future, as consumer preferences evolve and awareness grows, there is likely to be a continued focus on considering the environmental effects of goods and services at the time of purchase and how to reduce these effects through purchasing more sustainably.

In view of the growing national and international interest in sustainability, there is also likely to be a greater focus on decoupling environmental pressures from economic growth through smarter consumption and greater resource efficiency in the production of the goods and services bought.

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