

Ireland now has a population of 4.2 million people, and has seen unprecedented social and economic changes over the past two decades. The economic success of what was once one of the poorer EU member states is remarkable.

However, population growth, economic activity and consumption patterns are placing increasing pressures on the environment. The environmental impact of such changes is becoming increasingly apparent.

Land is urbanised to provide housing, roads and facilities for the growing population, with substantial conurbations around major towns and cities. This contributes to increased traffic flows and congestion as the outlying population travels, predominantly by car, into the towns and cities. Increased pressure is placed on environmental infrastructure such as water supply, sewerage and waste management facilities.

Human wellbeing, quality of life and developmental growth depend on society's efforts to make sustainable use of our environment.

## SOCIOECONOMIC DEVELOPMENTS

# 2

## The Socioeconomic Context

### Introduction

The wellbeing, quality of life and developmental growth available to humanity are closely interwoven with the environment. Humanity depends on the environment – from the natural resources it provides, such as water, to the environmental functions it performs, such as regulating the climate.

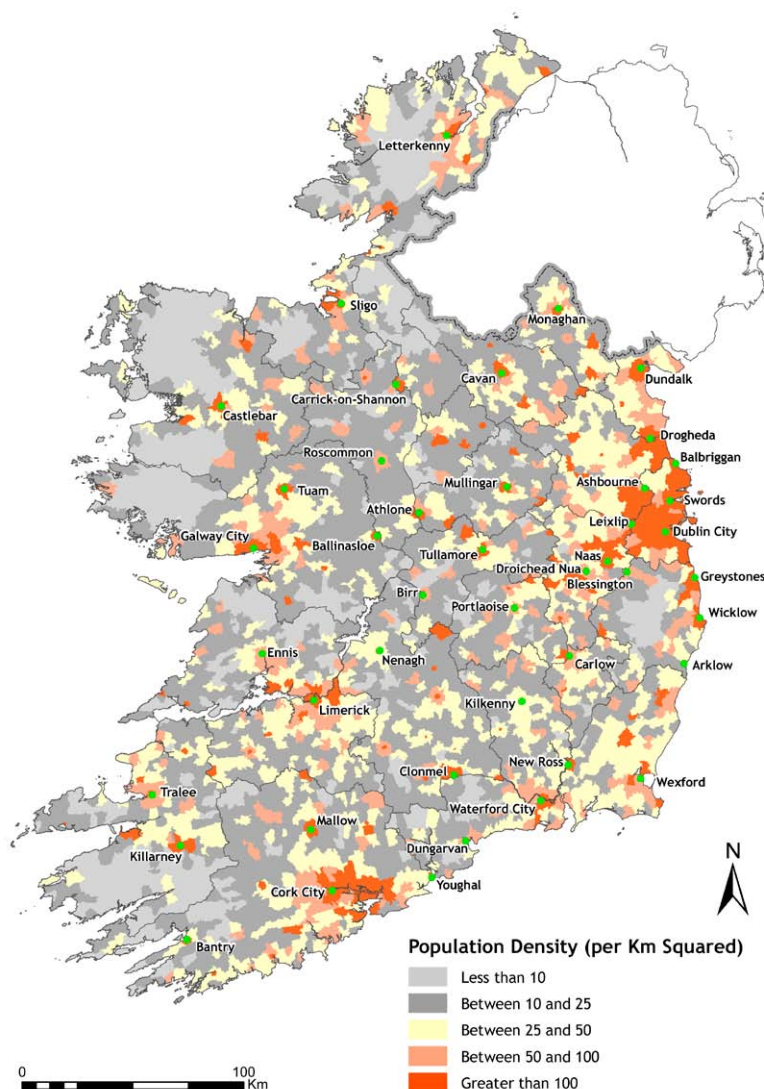
Unprecedented change in social and economic dynamics has resulted in a world that is more urbanised, industrialised, globalised and interconnected, with resultant environmental cost and impact.

Social and economic drivers such as population growth, economic activities and consumption patterns are putting increasing pressures on the environment. To place the current state of the environment in context, this chapter presents some recent socioeconomic trends.

### Population

Census 2006 (Central Statistics Office (CSO), 2007a) gives Ireland's population as 4.2 million – an 8.2 per cent increase compared to 2002 and a 16.9 per cent increase over 1996.

Map 2.1 Population Density per km<sup>2</sup> 2006 (Source: CSO, 2007a)

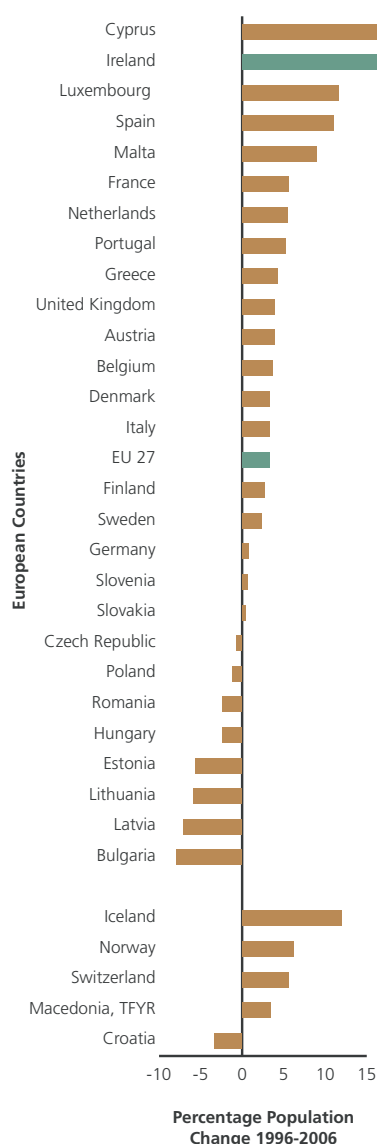


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Table 2.1 Population by Province and Change in Population 1996–2006 (Source: CSO, 2003, 2007a)

Province	Persons 1996 (million)	Persons 2002 (million)	Persons 2006 (million)	Actual Change 1996–2006	% Change 1996–2006
Leinster	1.9	2.1	2.3	370,421	+19.3
Munster	1	1.1	1.2	139,437	+13.5
Connacht	0.4	0.5	0.5	70,890	+16.4
Ulster (Part)	0.24	0.25	0.3	33,013	+14
TOTAL	3.6	3.9	4.2	613,761	+16.9

**Figure 2.1** Europe: Population Change, 1996–2006  
(Source: CSO, 2007b)



Ireland's population growth was five times the EU average (3.25%) over the ten-year period 1996–2006 (Figure 2.1).

The greatest increase in the national population occurred in Leinster, with the province recording a 9 per cent increase on 2002 census figures and a 19.3 per cent population increase since 1996 (Table 2.1) – the latter is greater than that of any of the EU27 countries over the same 10-year period. Such a striking increase is



highly significant when one considers the environmental pressures that this growth can create.

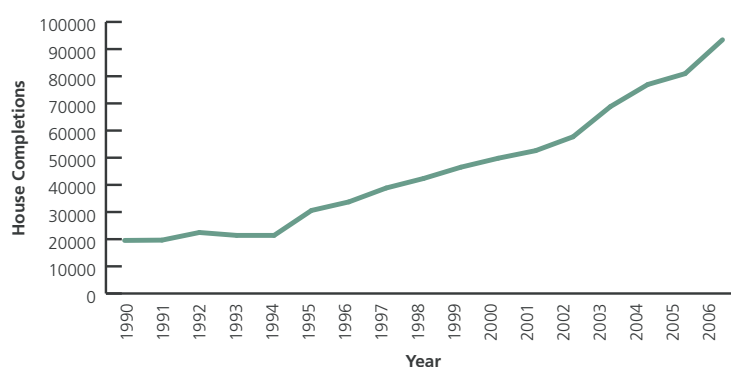
Census 2006 (CSO, 2007a) also shows that urban dwellers constitute 60.7 per cent of the population.

Substantial conurbations now exist around major towns and cities, as illustrated in Map 2.1. While the country remains relatively sparsely populated compared to the rest of Europe (Ireland has the sixth lowest population density in the EU27 – Eurostat, 2006), population density varies considerably throughout Ireland. The overall population density for Ireland is 60 persons per square kilometre (CSO, 2007a); Leinster's is almost double this at 115 persons per square kilometre, which

largely corresponds to that of the European Union (Eurostat, 2006). The majority of the population lives in coastal areas with 65 per cent living within 10 kilometres of the coast.

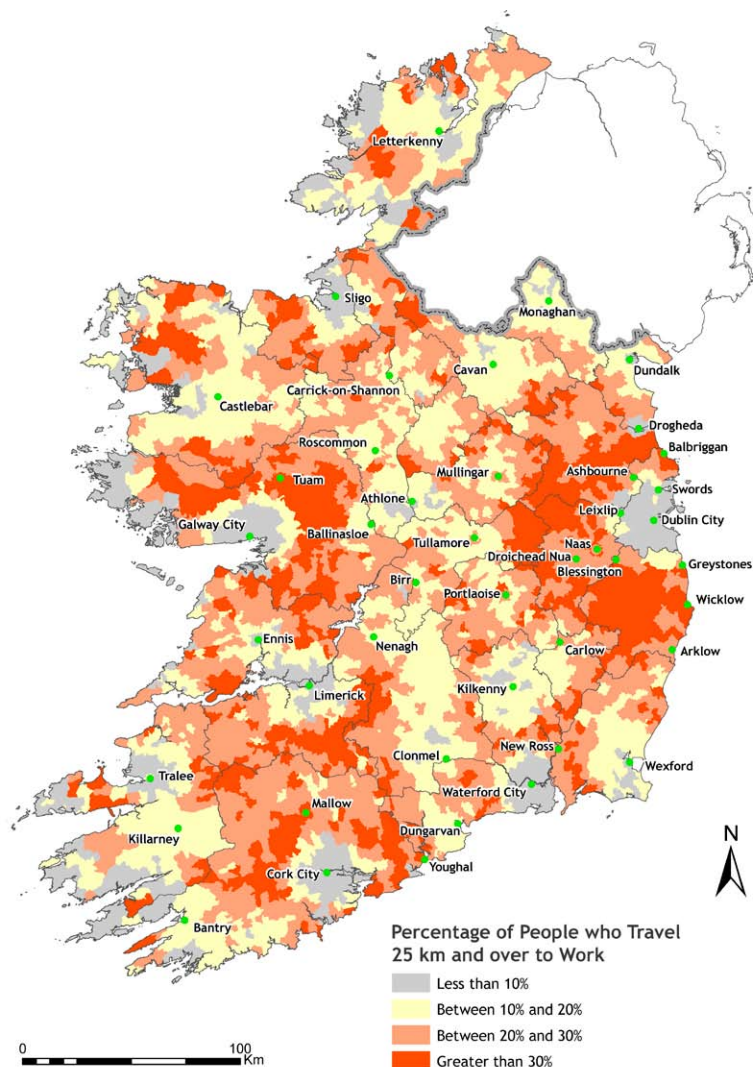
Population growth and increased urbanisation impact on the environment in a variety of ways, including changes in land use, increased traffic flows and the need for increased infrastructure such as housing, water supply, sewerage and waste management facilities. For example, the 378 per cent increase in house completions between 1990 and 2006 has impacted on the environment, not least in terms of the changes in land use required to accommodate this growth (Figure

**Figure 2.2** Total House Completions (Source: DEHLG, 2008)





**Map 2.2** Percentage of People Who Travel 25 km and over to Work  
(Source: CSO, 2007a)



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2.2). Moreover, census figures (CSO, 2007a) show that Irish housing stock predominantly comprises detached houses that have a proportionately larger footprint than semi-detached, terraced or apartment housing.

The population of Ireland is increasingly reliant on the car for its transport needs, and the spread of conurbations around the major cities has resulted in increased

traffic flows and congestion. Census figures show that 57 per cent of all workers regularly drove to work by car in 2006, up 2 percentage points since 2002, and just 9 per cent used public transport. The car is also the predominant transport mode for primary school transport, with 55 per cent of primary students driven to school by car. Map 2.2, based on data from the 2006 census, shows the extent to which long-distance

commuting has become a feature of Irish life.

## Households

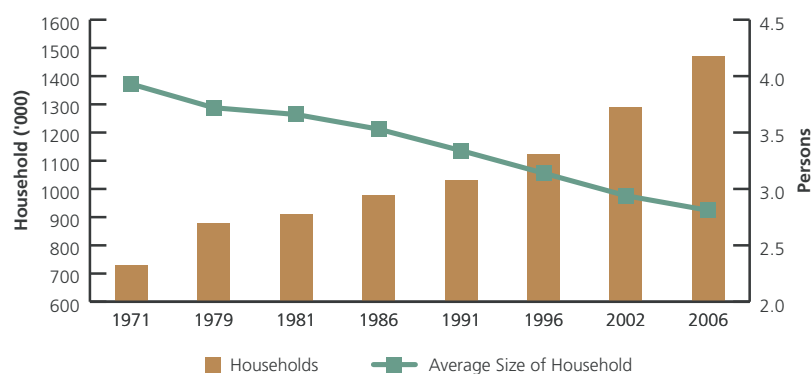
The number of households, as well as their behaviour and activities, has a direct effect on the environmental pressures emanating from the residential sector. The composition of the Irish household has seen significant change, with a greater number of households but each comprising fewer people. Census 2006 figures show that the average size of private households continued to decline, falling from 2.94 persons in 2002 to 2.81 persons in 2006 (CSO, 2007a). However, the continuing growth in the number of households to 1.47 million in 2006 (Figure 2.3) has added to the level of demand for resources such as energy, waste services and water.

Changes in consumer behaviour have also contributed to pressures on the environment from the residential sector.

Household expenditure has evolved considerably over the past decade, with ensuing environmental pressures. Table 2.2 shows how households' ownership of items that contribute to resource use and/or emissions has increased dramatically. Ownership of domestic appliances with high energy demand (such as tumble dryers) or with high resource use (such as dishwashers) has more than doubled in the past decade.

Households also spend considerable sums on environmental goods and services that can have a positive impact on the environment. For example, the proportion of households with double-glazing, which helps conserve energy and thereby reduce emissions, has more than doubled in the past decade.

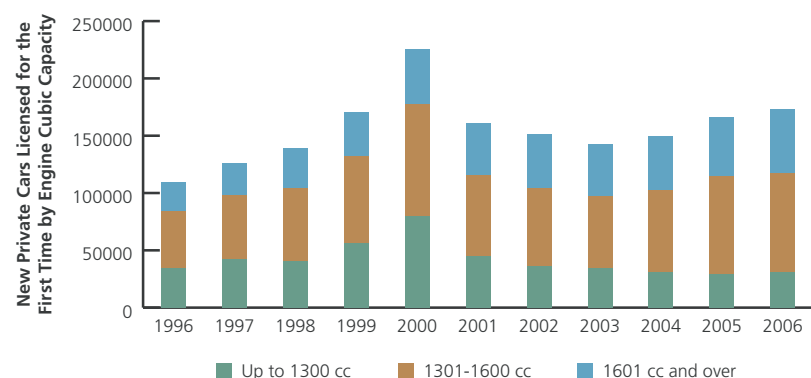
**Figure 2.3** Number of Households and Average Household Size, 1971–2006 (Source: CSO, 2007c)



**Table 2.2** Household Energy-Using and Energy-Saving Purchases (%) (Source: CSO, 2007d)

Percentage of households with:	1994–1995	1999–2000	2004–2005
Double-glazing	33.0	53.9	76.1
Tumble dryer	26.3	42.0	61.7
Dishwasher	18.7	32.0	50.1
Motor car – one only	51.1	50.1	45.8
Motor car – two or more	14.0	24.2	32.8

**Figure 2.4** New Private Cars Licensed for the First Time by Engine Cubic Capacity (Source: CSO, 2007c)



The CSO's most recent Household Budget Survey (CSO, 2007d) shows that expenditure on environmental services included on average €3.66 per week (€190/year) on refuse collection in 2004/2005 and €0.15

per week (€7.80/year) on water provision from private water schemes and private wells. Also in 2004/2005 households spent on average €0.09 per week on the plastic bag levy, which means that households on

average were purchasing just one plastic shopping bag per fortnight.

Car ownership has changed dramatically, with the proportion of households with multiple vehicles increasing substantially. New car registrations increased by 4.2 per cent in 2006 and were 15 per cent higher than in 2002 (CSO, 2007e). There is a continuing trend to purchase cars with larger engine sizes (Figure 2.4).

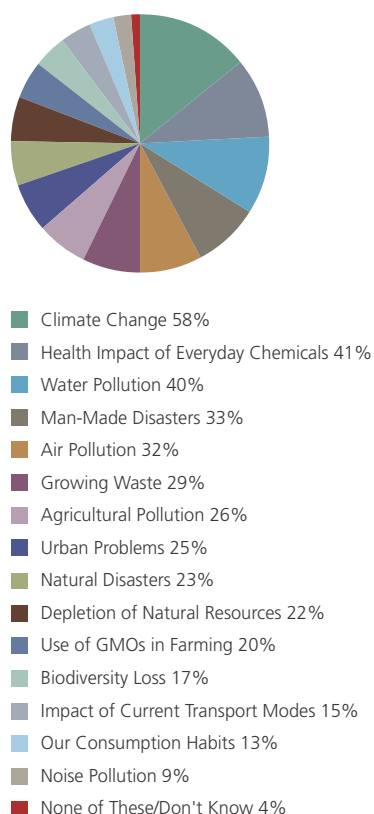
## Public Perceptions and the Environment

Environmental issues are high on the national and international political agenda, and it appears that the public perceives environmental issues as a more immediate threat to personal wellbeing than ever before. Expressions of this increased awareness include the public discourse on climate change, drinking water, wastewater and waste management issues. A Eurobarometer Report (European Commission, 2008) found that the environmental issue of most concern to both Irish and EU citizens is climate change (Figure 2.5). Other environmental issues such as air pollution, depletion of natural resources and biodiversity loss did not generate nearly the same level of concern. However, where environmental issues impact more directly on the public, such as the Galway water crisis in the summer of 2007, public concern and interest in environmental issues tends to grow.

## The Economy

In recent years the economy has experienced strong growth, full employment and high levels of inward migration. Real Gross Domestic Product (GDP) growth

**Figure 2.5 Environmental Issues of Most Concern to Irish Citizens**  
(Source: European Commission, 2008)



averaged over 5 per cent between 2003 and 2006 (CSO, 2007f). In Europe the eastern European countries experienced higher growth rates, while the more developed western European countries had substantially lower growth rates (Figure 2.6). On a per-capita basis Ireland's economic growth is even more impressive, with per-capita GDP now the second highest in the EU27 at almost 1.5 times the EU27 average (Eurostat, 2007). Figure 2.7 compares GDP per capita across a number of countries, showing that more developed western European countries, with the exception of Ireland, have a high but declining relative per-capita GDP whereas it is much lower in eastern European countries.

Activity underpinning the exceptional growth has not been uniform across all economic sectors: it is useful to review some of the main trends within the major sectors and to highlight potential environmental pressures. The final economic outcome for 2007 is likely to show growth of 4–5 per cent – a decline on 2006. The readjustment in economic growth during 2007 was most prevalent in the building and construction sector. The expectation for 2008 is more widespread decline in activity and the economy moving into recession (ESRI, 2008).

Economic activity, whether measured by GDP or Gross Value Added (GVA), increased by approximately 16 per cent between 2003 and 2006. GVA is equal to the sum of the values of goods and services produced, including depreciation and subsidies on production but excluding taxes on production. The GVA figures in the following sections are from the CSO (2007f).

### Agriculture, Forestry, Fishing

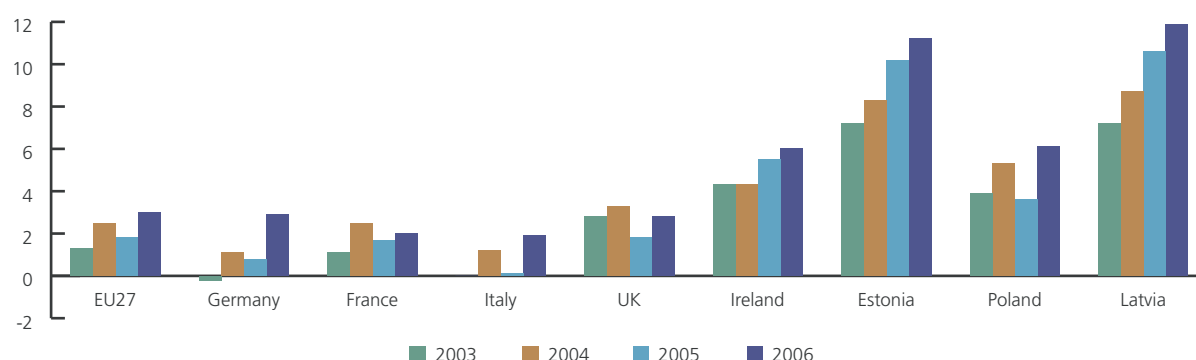
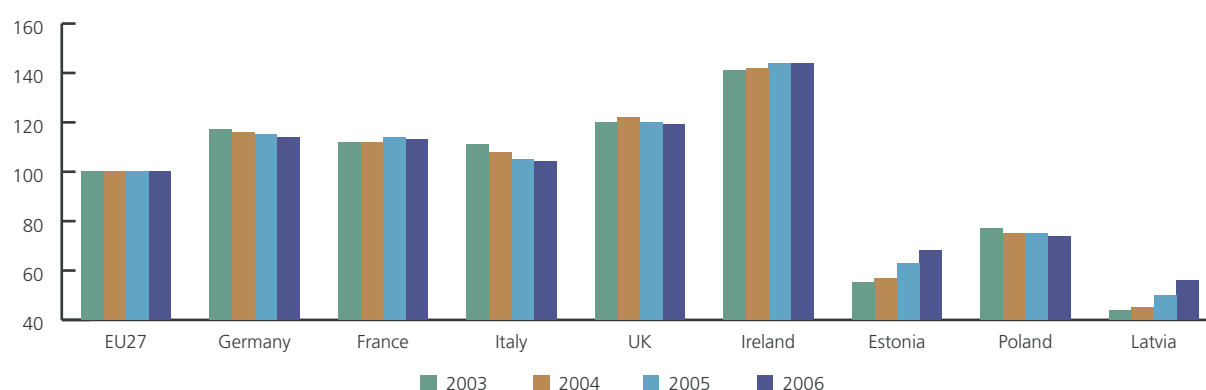
The agriculture, forestry, fishing

sector accounts for 2.5 per cent of GVA and 5.5 per cent of total employment. While numbers employed declined by 1.6 per cent between 2003 and 2007, continuing a long-term trend, the value of output increased by 4.6 per cent. Employment in the sector totalled almost 122,000 in Quarter 1/2008 and therefore is roughly equivalent to both the hotel/restaurant and public administration/defence sectors. The sector is experiencing a period of transition as it adapts to EU policies relating to fish stocks and farm payments and to world markets relating to grain deficits and bio-energy demand.

### Industry

The industrial sector, which includes mining, manufacturing and utilities, accounted for 25.7 per cent of GVA in 2006 and employed 241,800 persons. Over the 2003–2006 period GVA grew by 11 per cent, the volume of production increased by 9 per cent, and employment declined by 3.3 per cent. Across the sub-sectors highlighted below



**Figure 2.6 Annual GDP Volume Growth (Source: Eurostat, 2007)****Figure 2.7 GDP per capita in Purchasing Power Standards, EU27=100 (Source: Eurostat, 2007)**

the changes in activity levels have different impacts on the environment and environmental services generally. For example, waste management in food production is significantly different from waste management in the chemicals sector, where much of the waste is hazardous.

### Food Products and Beverages

The volume of production in the food and beverage sector increased by 10 per cent over the 2003–2006 period. Two significant trends are an increase of 14 per cent in production of dairy products and a decline of 13 per cent in meat and meat product production. As the sector faces significant challenges in managing its waste outputs (e.g. landspreading

of sludges and disposal/rendering of wastes), substantial changes in the nature and volume of production exacerbate problems associated with planning for adequate waste management.

### Textiles, Leather and Leather Products

This is among the few sectors that experienced a substantial decline in production in 2003–2006. Textiles production in 2006 was 70 per cent of its 2003 level; production in the leather sector was just 30 per cent of its 2003 level.

### Chemicals

Between 2003 and 2006 GVA in the chemical sector declined by some 17

per cent and by 2006 the sector's share of total GVA stood at 7.9 per cent. While employment in the sector remained largely unchanged, there was significant change in the nature of activity. Production of pharmaceuticals, medicinal chemicals and botanical products increased by 63 per cent, whereas production of basic and other chemical products declined by over 10 per cent.

### Electrical and Optical Equipment

Employment increased by 5 per cent in the electrical and optical equipment sector over the 2003–2006 period. Production expanded by 24 per cent, with GVA up by 36 per cent. While much of the increased production may be



destined for export markets, some will end up as waste electrical and electronic equipment (WEEE).

## Energy

Ireland's energy requirement has increased gradually in recent years. A number of factors underlie the overall trend. Final energy consumption (for electricity, heating, transport, etc.) has increased on average by 3 per cent per annum since 2004, whereas the growth in house numbers, combined with uptake of electrical appliances, has led to a strong growth in residential electricity demand. In parallel there has been a gradual improvement in energy efficiency contributing to an improvement in the emissions intensity of GDP (Figure 2.8). Much of the improved energy efficiency is derived from better performance in energy generation (e.g. from switching to combined cycle gas turbine generators). Consequently, in recent years energy demand has been partially decoupled from economic growth, as reflected by a slight decline in energy intensity of GDP. However, due to the contribution of renewable



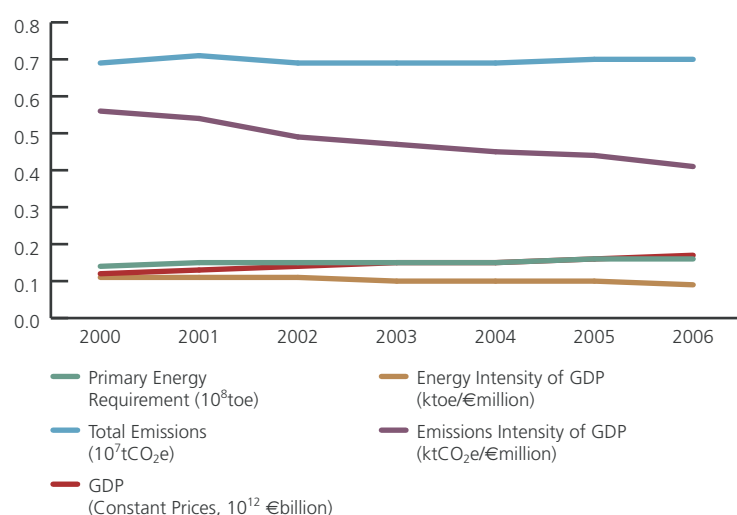
energy and technical improvements in generation efficiency there has been a much more significant decline in emissions intensity of GDP, as shown in Figure 2.8.

Ireland currently significantly exceeds its Kyoto target for greenhouse gas emissions, being 25.5 per cent above the Kyoto baseline compared to the 13 per cent target. To achieve the Kyoto target at existing levels of economic activity, the emissions intensity of GDP will have to reduce by at least a quarter compared to the level of 2006 (0.41 kilotonnes CO<sub>2</sub>/€mGDP) (see Figure 2.8).

## Building and Construction

The growth in the building and construction sector in recent years has been very visible, with a 378 per cent increase in the number of house completions between 1990 and 2006 and a 15.4 per cent increase in 2005–2006 alone (DEHLG, 2008). A weakening in the housing sector became evident throughout 2007 and early 2008, although this was arguably inevitable given the phase of the current construction cycle. In Q1/2008, the number of dwellings completed declined by 30 per cent over Q1/2007. Total housing completions for 2008 are estimated at 43,000, which represents a 45 per cent decrease over 2007 completions. (DKM, 2008).

**Figure 2.8 Energy and Emissions Intensity of GDP**  
(Source: SEI, 2006; EPA 2008b; CSO 2007f)



ktoe – Thousand Tonnes Oil Equivalent.  
ktCO<sub>2</sub>e – Thousand Tonnes CO<sub>2</sub> Equivalent.

Employment in the construction sector has grown steadily in recent years, with an average of 282,000 people employed in 2007, which was roughly 13 per cent of the total numbers employed (see Table 2.3). However, employment in the sector has been declining since mid 2007. (CSO, 2008). Further impacts on construction sector employment are likely if house-buyer confidence weakens and housing sales slow down.

**Table 2.3 Persons Aged 15 years and over in Employment (thousands, quarter 1) (Source: CSO, 2008)**

	2004	2005	2006	2007	2008	2008 share
All economic sectors	1833.0	1910.8	2004.8	2081.3	2135.1	100.0%
Agriculture, forestry and fishing	118.2	112.5	115.5	115.0	122.0	5.7%
Other production industries	297.9	298.2	287.6	294.6	287.1	13.4%
Construction	200.9	233.6	255.7	284.2	274.4	12.9%
Wholesale and retail trade	261.5	267.2	285.0	290.5	311.6	14.6%
Hotels and restaurants	116.1	115.9	118.0	128.1	131.0	6.1%
Transport, storage and communication	112.6	115.6	120.4	123.1	123.4	5.8%
Financial and other business services	233.6	251.6	268.8	271.5	297.8	13.9%
Public administration and defence	88.7	95.0	101.2	102.7	102.9	4.8%
Education	119.2	119.5	131.8	140.2	139.7	6.5%
Health	178.1	186.1	197.6	212.6	224.1	10.5%
Other services	106.2	115.6	123.2	118.8	121.1	5.7%

The most immediate impact of the growth in construction activity on the environment is the waste it generates. Data for 2006 indicates that in excess of 13 million tonnes of construction and demolition was managed by the waste sector, with 79.5 per cent recovered, mostly for landscaping and engineering works (EPA, 2008a). In the longer term the higher energy efficiency standards for new buildings will help reduce their environmental impact compared to the existing stock of housing and other buildings.

### Tourism and Travel

The tourism sector is becoming increasingly important for the Irish economy. For example, the hotel and restaurant component alone employed almost 131,000 people in spring 2008, which constituted 6 per cent of those at work in Ireland (Table 2.3). In 2006 there were 7.7 million tourist trips to Ireland from overseas, generating revenue of approximately €4.7 billion. Domestic trips by Irish residents are also increasing, with a total of 7.3 million trips in 2006 – over half of which were holiday trips – generating expenditure of €1.4 billion (CSO, 2007c).

Environmental concerns resulting from tourism activity include impacts on tourist destinations and also transport impacts. Environmental infrastructure in many popular tourist destinations is insufficient to deal with water, waste and traffic needs.

The maintenance of the quality of Ireland's natural and cultural heritage is necessary to ensure continued and sustainable growth of the tourism industry. Fáilte Ireland recognises that the 'future of Irish tourism is inextricably linked to the quality of the environment ... The economic viability and competitiveness of the Irish tourism industry can only be sustained if the quality of these

resources is maintained' (Fáilte Ireland, 2007).

The greater part of leisure activities involving enjoyment of our natural environment does not cause damage, and neither is it necessarily recorded as tourism activity. Every day people use and enjoy their local environmental amenities; also on occasion they make more distant trips to environmental attractions elsewhere in Ireland. The Marine Institute (2004), for instance, has estimated that some 1.5 million adults participate in at least one water-based leisure activity (e.g. fishing, boating, swimming, coastal trips); the Irish Sports Council (2007)



estimated that some 17.5 million trips are made on walking trails per annum.

Visits abroad by Irish residents have grown considerably, with the annual average growth rate in overseas visits since 2001 exceeding 10 per cent. The greater share of overseas trips is for holidays (56%), and mode of travel is predominantly air. Similarly, the majority of the 7.7 million tourist trips to Ireland in 2006 were also by air (CSO, 2007c). This mode of travel has the poorest performance with respect to greenhouse gas emissions per passenger kilometre travelled; its most significant impact will occur in the longer term through the consequences of climate change.

## Infrastructure

The National Development Plan (NDP) 2000–2006 (NDP, 2006) invested €54 billion in a range of projects aimed at sustainable economic growth, thus contributing to Ireland's economic competitiveness. Certain deficits in environmental infrastructure were targeted, with an investment of €3.1 billion in the areas of wastewater, water supply and infrastructure management and rehabilitation. This investment has resulted in increased treatment capacity for both drinking water and wastewater services. A further €3.6 billion was directed to transport initiatives such as the Dublin Port Tunnel, the Luas, modernisation of the Iarnród Éireann rail fleet, doubling of peak capacity on the DART, quality bus corridors (QBCs), park and ride facilities, traffic management programmes and the introduction of the Rural Transport Initiative.

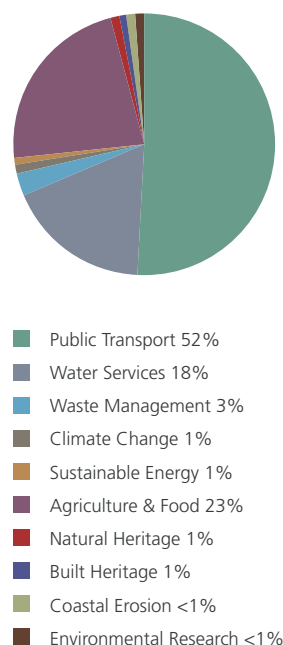
While this investment improves transport infrastructure, and will yield environmental benefits related to emissions, transport remains a

major challenge. Transport emissions constituted almost 20 per cent of Ireland's greenhouse gas emissions in 2006 (EPA, 2008b). Although there was an overall decrease in Ireland's greenhouse gas emissions in 2006, the main increase originated from the transport sector. The causes and impacts of this are further discussed in Chapter 3.

The National Development Plan 2007–2013 (NDP, 2007) builds on the previous NDP with an investment budget of €184 billion. Expenditure of over €25 billion is earmarked for environmental projects, in the areas of public transport, water services, waste management, climate change, sustainable energy, agriculture and food, natural and built heritage, coastal protection and environmental research.

As Figure 2.9 shows, the greatest level of expenditure in this area is earmarked for the transport sector. A four-fold increase in investment in public transport compared to NDP 2000–2006, totalling €13 billion, seeks to promote and facilitate a shift to public transport usage. The increased use of public transport systems should result in improvements, not least with regard to environmental concerns (reduction of greenhouse gas emissions from

**Figure 2.9 National Development Plan 2007–2013, Environmental Sub-programme Expenditure**  
(Source: NDP, 2007)



reduced fossil fuel usage) but also with regard to quality of life and competitiveness concerns (less congestion from a modern state-of-the-art transport system).

Investment of €4.7 billion is earmarked to upgrade and expand water and wastewater treatment





infrastructure. This planned investment is timely, as the EPA has highlighted that 28 of the 158 larger towns and cities do not have the necessary level of secondary wastewater treatment (EPA, 2008c).

In the area of waste management some €753 million will be invested to tackle problems associated with legacy landfills, support through private investment the development of thermal treatment plants to reduce landfill usage, and promote greater use of recycling and recovery. Over €6 billion is earmarked to agriculture and food schemes with positive environmental impacts, for example, the Rural Environmental Protection Scheme (REPS). A further €167 million will be invested in natural heritage, funding protection of habitats and species.

## Conclusion

Environmental issues are no longer considered in isolation. The impact of human activities on the environment and the complex interactions within the environment are increasingly being recognised. A comprehensive state of the environment report plays an important role in this regard, in facilitating a more integrated and inclusive view of the environment. This chapter presents some recent socioeconomic trends to place the current state of the environment in this framework.

While the recent period of strong economic growth has added to the pressures on the quality of the environment, as outlined in the subsequent chapters, nevertheless it has also facilitated greater investment in environmental protection. The most obvious demonstration of this is the investment earmarked in the National Development Plan. In addition, there has also been considerable private sector

investment in environmental protection in the areas of pollution control and abatement, recycling/recovery and waste management.

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