



**Indicators,
Balanced Regional Development
and the
National Development Plan
2007-2013**

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26th April 2007

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EXECUTIVE SUMMARY

Regionally balanced development is a key national policy objective and the Western Development Commission (WDC) believes there is a need to measure performance in this regard. This paper sets out that case and proposes a set of indicators which aim to measure progress towards achieving balanced regional development.

Objective indicators support evidence-based policy-making by, for example, identifying areas needing government intervention. In addition, indicators are required to assess policy performance and outcomes. The purpose of this paper is to provide a set of useful indicators as an objective tool to measure progress in achieving more balanced regional development. The selected indicators are **not** designed to evaluate policy but aim to provide a snapshot of progress, and with time series data, provide an overview of trends. Finally, the indicators chosen reflect many of the high-level objectives contained in the National Development Plan 2007-2013 and are therefore very relevant.

The indicators were chosen on the basis of several criteria.

- **Relevance:** The indicators chosen should be appropriate to the measures in the NDP 2007-2013 and are designed to measure outcomes with regard to high-level objectives (detailed below). They are **not** specific programme indicators.
- **Spatial scale:** The spatial unit should be as small as possible, preferably county level or NUTS3 level¹, without compromising data quality or accuracy.
- **Timeliness:** The timeliness of the data is important. The data sources chosen should be as up-to-date as possible so as to provide a current picture and should be available at regular intervals so as to highlight trends.
- **Manageability:** A limited number of indicators are preferable, ensuring the monitoring exercise is not too unwieldy.

The chosen indicators are based on six themes ranging from demographics to innovation performance. These are detailed below.

1. Demographic Indicators

- 1.1 Population Change and Population Distribution
- 1.2 Age Structure – Population of Working Age (15-64 years)

2. Labour Market Indicators

- 2.1 Labour Force Participation Rates by Gender
- 2.2 Employment Change, Employment Rate and Employment Distribution
- 2.3 Unemployment, Unemployment Rate and Long-Term Unemployment Rate

¹ The NUTS classification system is that used by Eurostat. The NUTS2 regions are the Border, Midlands and West and the Southern and Eastern regions. These are groupings of the NUTS3 regions which correspond to the eight regional authority areas. The NUTS4 regions represent county level.

3. Economic Structure and Performance Indicators

- 3.1 Employment and Employment Share by Sector
- 3.2 Output – Regional GDP per Person
- 3.3 Gross Value Added by Broad Sector
- 3.4 Regional Share of each Broad Sector GVA
- 3.5 The Knowledge Economy – Employment in Knowledge Intensive Sectors

4. Education Indicators

- 4.1 Population Classified by Highest Level of Education Attained
- 4.2 Employed Graduates by County of Origin and County of First Employment

5. Income and Poverty Indicators

- 5.1 Income per Capita
- 5.2 Poverty; Consistent Poverty Rate
- 5.3 Poverty; At-Risk-of-Poverty Rate

6. Innovation and Technology Indicators

- 6.1 Household Broadband Access
- 6.2 Higher Education Research and Development Expenditure and Performance
- 6.3 Business Research and Development Expenditure and Performance
- 6.4 Innovation Activity

The structure of the paper is as follows. Firstly, there is a brief discussion on indicators, balanced regional development and the selection criteria.

The nineteen indicators are then set out under the six themes. Each indicator is discussed in terms of its relevance to the NDP 2007-2013 and balanced regional development. The key attributes of the indicator are set out and a data example is provided for each indicator for illustrative purposes only. A summary table of all indicators and their attributes is set out in Appendix 1.

This paper is intended to be a constructive contribution to the development of regional development monitoring procedures. It is hoped that it will provide an input to the monitoring process and add value to the work underway in this area.

INTRODUCTION

Evidence-based policy-making requires objective indicators to assist in identifying those areas needing government intervention. The use of indicators can also help prioritise needs. In addition, indicators are a key tool in the process of monitoring and evaluating policy and associated investment, which in turn is needed to measure performance in achieving identified policy objectives and ensure continuing relevance.

Regionally balanced development is a key national policy objective and the Western Development Commission (WDC) believes there is a need to measure performance in achieving this objective. Our arguments in this regard and a set of indicators, which aim to measure progress towards achieving balanced regional development, are set out in this paper.

The purpose of the paper is to provide a set of useful indicators which measure outcomes across a range of policy objectives and together provide a measure of balanced regional development. The indicators chosen are not designed to evaluate policy but aim to provide a snapshot of progress and, with time-series data, provide an overview of trends. Finally, the indicators chosen reflect many of the high-level objectives contained in the National Development Plan 2007-2013 and are therefore very relevant.

All of the indicators selected are based on national data sources. The geographic remit of the WDC is the seven counties Donegal, Sligo, Leitrim, Mayo, Roscommon, Galway and Clare. Therefore from a WDC perspective, data on a county basis is preferable. However, many national sources are only available at NUTS3 level², therefore this is the most common unit of analysis used.

The appropriate NUTS3 regions (from a WDC perspective) are the West region (Galway, Mayo and Roscommon), the Border region (Donegal, Leitrim, Sligo, Louth, Monaghan and Cavan) and the Mid-West region (Clare, Limerick, and North Tipperary). Illustrative data examples for each indicator are provided in the text and the examples provided alternate between these three NUTS3 regions.

BALANCED REGIONAL DEVELOPMENT – A KEY POLICY OBJECTIVE

The commitment to balanced regional development in the National Spatial Strategy is reaffirmed in the NDP 2007-2013. With this in mind, the WDC believes there is a need for more focused attention on measuring outcomes, and indicators need to be devised and used to benchmark and monitor progress³. The case for monitoring and measuring outcomes at regional and sub-regional levels is even more important where investment has been spatially targeted.

² The NUTS classification system is that used by Eurostat. The NUTS2 regions are the Border, Midlands and West and the Southern and Eastern regions. These are groupings of the NUTS3 regions which correspond to the eight regional authority areas. The NUTS4 regions represent county level.

³ The use of targets can also be a valuable tool in devising objectives and monitoring performance but are outside the scope of this paper. The value of regional indicators and targets in promoting regional development has been recognised elsewhere, for example, the NESC Strategy, *People, Productivity and Purpose* argues that in the context of the new NDP, *In seeking to promote development in accordance with the vision of the NSS, it is important to create meaningful regional indicators that are measurable and can be used for setting targets that can be achieved within agreed time frames.* NESC Strategy for 2006, *People, Productivity and Purpose*, December 2005 p.194

The WDC believes that progress toward achieving balanced regional development, recognising its multi-dimensional nature, should be monitored by assessing trends across a range of themes, using a range of social and economic indicators. These include demographics (population share and growth), labour market (employment share and growth), economic structure (the sectoral composition of employment), and output and its regional dispersal. The improved spatial distribution of economic activity is a large part of moving toward balanced regional development but not the only part. Other indicators that are important include income per capita, social inclusion, educational participation and levels of innovation.

The indicator series proposed here covers some of the key areas that are addressed in the NDP 2007-2013. It should be noted that this indicator series does not reflect a comprehensive view of all the elements which might comprise balanced regional development. Some objectives are outside the scope of the current NDP, for example a well integrated, multi-cultural society. Others such as access to health services, a quality environment and improved quality of life are important facets of balanced regional development⁴, but measuring these is beyond the scope of this paper. This may be the focus of future work.

In summary, the WDC is proposing a *regional development* basket of indicators which can be an objective tool by which to measure progress in achieving balanced regional development. The aim of the exercise is to benchmark progress in achieving the stated policy objective, in a universally accepted manner. It is not designed to be an evaluation of policy. The aim is to provide a snapshot of a particular situation, and with time series data, provide an overview of trends.

MEASURING BALANCED REGIONAL DEVELOPMENT – WHICH INDICATORS?

There are various types of indicators, each designed to measure different phenomena. While there is extensive literature on the different types of indicators there are two broad categories, context and programme indicators⁵.

Context indicators *refer to the context in which the programme operates and apply to an entire territory, population or category. Context indicators are not intended to measure programme achievement.* Programme indicators⁶ on the other hand refer to activities under a specific programme and try to monitor the direct or indirect effects of the programme.

The choice and type of indicators should reflect the key objectives. Programme indicators are designed to monitor programme performance. Ultimately however the context indicator is the more important consideration; as it aims to reflect the fundamental programme objective.

⁴ Some, such as quality of life indicators are as of yet poorly developed while others such as environmental emissions or noise quality are less relevant in the context of balanced regional development and may be more appropriately analysed in a rural/urban context. Others are omitted because of limited data at a regional level. For example the EU publishes *Regions: Statistical Yearbook* annually, which includes a wide range of regional statistics from demographic data to statistics on health and transport access however these are only at NUTS2 level.

⁵ This material is drawn from *CSF Performance Indicators: Proposals for 2000-2006 Programming Period*. CSF Evaluation Unit, October 1999.

⁶ There are various types of programme indicators and these can also be termed performance indicators.

Therefore, the regional development indicator series presented in this paper is a selection of context indicators rather than specific programme indicators.

The indicators aim to reflect the current context, which is the NDP 2007-2013 and the associated investment programmes and priorities. At the same time, most of these indicators will have longevity and will continue to be relevant beyond the life of NDP 2007-2013. Of course, specific programme indicators will also be required to monitor progress at a detailed, measure-specific level.

SELECTION CRITERIA

There are significant data issues which have influenced the indicator selection. Principal constraints include the availability of data at sufficiently small geographical levels and the timeliness of the data. For example, some key data sources are only available at NUTS2 level (for example the *Annual Services Inquiry*) and many important data sources are only available three years after the reference year (for example *County Incomes and Regional GDP* and *Census of Industrial Production*). Most of the indicators included here are published, however in some cases the data was requested as a 'special run'.

The selected indicators reflect what the WDC believes are the best indicators bearing in mind issues of relevance, data availability, spatial unit of analysis, timeliness of the data, etc. In some instances, this selection has involved a necessary trade-off, for example in the case of regional GVA the timeliness of the indicator is sacrificed because this is the only time series data which measures GVA at a sectoral and regional level and it is recognised internationally. In some cases there is only one relevant variable, while in others there are many possibilities and the selected indicator is chosen because it is the most widely accepted and conventionally used.

This indicator series is therefore based on several criteria.

- **Relevance:** The indicators selected are appropriate to measures in the NDP 2007-2013. They are context indicators referring to the territory or population where the Plan operates and are not specific programme indicators. They have been chosen because they reflect and measure the ultimate policy objectives of the programme measures.
- **Spatial scale:** The spatial unit should be as small as possible, without compromising data quality or accuracy. Data should be available at NUTS3 and NUTS4 (county level) where possible. Of course county data also has its deficiencies, particularly in obscuring urban/rural differences.

The WDC believes that measuring the performance of the NDP 2007-2013 in relation to the objective of balanced regional development, and in the context of the National Spatial Strategy, should not focus only on indicators related to gateway and hub specific measures. The WDC is proposing a series of indicators which provide a measure of balanced regional development, but aim to take account of the whole

region and sub-region level⁷. The benefit of this is that the performance of the whole region is taken into account, rather than just the gateway or hub.

- **Data timeliness:** It is important that the data sources chosen are available at regular intervals and are as up-to-date as possible, so as to provide a current picture. Time series data is also important. The indicators were chosen with the aim of measuring progress over time and viz-á-viz other regions.
- **Manageability:** Monitoring and measuring outcomes is an important tool but it should not become prohibitive by being too unwieldy. The aim is to provide a snapshot of a particular situation and, with time series data, provide an overview of trends. A limited number of indicators allows for a regular (annual) update, thereby providing a regular assessment of progress. Accordingly, the number of indicators is restricted and nineteen are included here.

STRUCTURE AND LAYOUT

The format of the paper is as follows. The indicators are categorised under six themes.

1. Demographic Indicators
2. Labour Market Indicators
3. Economic Structure and Performance Indicators
4. Education Indicators
5. Income and Poverty Indicators
6. Innovation and Technology Indicators

The relevance of each indicator to the NDP is first discussed. Then the rationale for its selection as an indicator of balanced regional development is laid out, followed by the key attributes including data source, availability, recommended unit of analysis etc. A data table with the most recent statistics available is provided *for illustrative purposes*. Each different indicator displays a different NUTS3 region, again *as an example only*. Finally, a summary table of all indicators and their attributes is set out in Appendix 1.

The resulting selection aims to provide an indicator series which most accurately reflects an assessment of the relative performance of regions over time and in relation to each other. The WDC believes that regular monitoring using this set of indicators will allow for a better understanding of progress towards achieving balanced regional development. This improved understanding is necessary if we are to achieve more regional balance.

⁷ Some data may be available at a much lower geographical level – ED level, county etc, allowing more detailed analyses.

1. DEMOGRAPHIC INDICATORS

1.1 POPULATION, PERCENTAGE CHANGE AND POPULATION DISTRIBUTION (SHARE)

Why a National Development Plan Indicator?

Population growth or decline is a product of fertility and mortality rates and migratory flows. Economic activity, societal and cultural influences are some of the factors which influence these components of population growth. Fertility and mortality rates are a product of long-term trends while migratory patterns can fluctuate over a much shorter time frame and are particularly sensitive to economic growth rates. Significant net in-migration (particularly those of working age) can reflect a buoyant labour market in a growing economy as well as acting as a driver for further growth.

Population is also an important factor in determining labour force growth, which in turn, is a key determinant of future economic growth.

An Indicator of Balanced Regional Development

Uneven regional development is reflected in population patterns, for example, population loss can indicate decline while increases can reflect economic growth⁸. The spatial distribution of population and patterns of growth or decline are therefore important indicators of regional performance and disparity. These trends are best measured by indicators measuring (a) the change in population; (b) the rate of change; (c) the regional population share; and (d) any change in regional share.

Population, Percentage Change, Population Distribution (Share) and Change in Share

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Population, Percentage Change, Population Distribution (Share) & Change in Share	CSO Population and Migration Estimates	NUTS3	Annually	September 2006	Eurostat

According to the most recent data, while all NUTS3 regions experienced population growth the rate of growth varies considerably. Consequently the regional share of population distribution is declining in some regions and rising in others.

For example, as the table below shows, in 2006 the estimated population of the Border region was 465,200, which was (a) an increase of 9,800 persons on 2005, or (b) an increase of 2.1%. Nationally the population increased by 2.5% over the same period. Despite this increase, the Border region accounted for (c) 10.9% of the national population in 2006, which represented (d) a slight decline on the previous year (11.0%).

⁸ This is not to discount the increased importance of commuting where significant amounts of people live in one region and commute to another for employment.

Population, Percentage Change, Population Distribution (Share) and Change in Share, 2006

Region	Population	Population Change 2005-2006 (a) (b)	Regional Population Share 2006 (c)	Change in Regional Share 2005-2006 (d)
Border NUTS3	465,200	+9,800 (+2.1%)	10.9%	(11.0% in 2005) Decrease

1. DEMOGRAPHIC INDICATORS

1.2 AGE STRUCTURE – POPULATION OF WORKING AGE (15-64 YEARS) AS A PROPORTION OF TOTAL POPULATION

Why a National Development Plan Indicator?

Unlike most of the other indicators this second demographic indicator - the age structure, is not an indicator of progress under the NDP, although, like population levels, the age structure will be influenced by economic growth, particularly with respect to migration.

An indicator of the age structure of a region is important for two reasons. First, it has important policy implications when considering public service provision much of which is the focus of policy and investment in the NDP, (for example childcare, education, health, housing and transport), therefore an understanding of the age structure of national and regional populations is critical.

Secondly, the age structure is an important indicator of the relative size of the labour force or economically active population⁹. A key indicator therefore is the ratio of the population of working age, regarded as 15-64 years, to the total population. The higher the proportion of population of working age, the more dynamic the economy is likely to be.

An Indicator of Balanced Regional Development

A higher proportion of population of working age is indicative of economically stronger regions, where the economically active migrate to in search of employment. This can further facilitate development by providing an available supply of labour and a market for goods and services. Conversely a region with a lower proportion in this age group indicates a region with a lower economically active population and with consequent lesser growth potential.

Historically there has been a higher proportion of population of working age in Dublin compared to elsewhere. Recent data show that this trend persists. The region with the lowest economically active population was the Border region where 66.3% of the population were of working age. In contrast Dublin has the highest proportion of population of working age (71.0%) and was the only region with a population of working age exceeding 70% of the total. Differences in the male and female age structure are also evident. These are shown in the example below.

Population Aged 15-64 years as a Proportion of the Total Population

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Proportion of Population aged 15-64 years	CSO Population and Migration Estimates	NUTS3	Annually	September 2006	Eurostat

⁹ The economically active or labour force comprises the employed and unemployed. Those aged 15 years and over are categorised as either employed, unemployed or economically inactive. The QNHS does not impose an age ceiling for its measure of the labour force, though traditionally 65 years is considered retirement age. The economically active or labour force comprises the employed and unemployed.

Population Aged 15-64 years as a Proportion of the Total Population, 2006

Region	Male	Female	Total
Border - NUTS3	67.0	65.4	66.3
Dublin - NUTS3	71.7	70.3	71.0

2. LABOUR MARKET INDICATORS

2.1 LABOUR FORCE PARTICIPATION RATES BY GENDER

Why a National Development Plan Indicator?

The labour force measures the numbers employed and unemployed and is a key measure of labour supply. The labour force participation rate¹⁰ is an important measure of comparative economic activity levels. Labour force participation rates have been rising steadily, driven by increasing female participation along with significant net in-migration in latter years.

An Indicator of Balanced Regional Development

There are significant regional differences in labour force participation. Labour force growth and increasing participation rates are an indicator of a more dynamic labour market with more people availing of and wishing to avail of employment opportunities. Lower labour force participation rates can reflect for example, fewer opportunities, higher educational participation, a weaker skills base, and an aging population¹¹. Lower participation rates also reflect higher dependency ratios.

Historically there have been lower labour force participation rates in the West region, with female participation rates in the West significantly behind those in Dublin. Female participation rates have increased in both regions but both male and female rates remain lower in the West.

Labour Force Participation Rates by Gender

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Labour Force Participation Rates by Gender	QNHS (ILO Economic Status)	NUTS3	Quarterly	Q2 ¹² 2006 (September)	Eurostat

In 2006, the labour force participation rate in the Dublin region was 64.8%. In the West region the participation rate was 61.2% up from 60.1% in 2005. The female participation rate in the West was up from 49.4% in 2005 to just over 50% (50.5%), in 2006. This compares with a female participation rate in Dublin of 56.2%.

Labour Force Participation Rates by Gender, 2006

Region	Male	Female	Total
West - NUTS3	72.1	50.5	61.2
Dublin - NUTS3	74.0	56.2	64.8

¹⁰ The participation rate is the number of persons in the labour force expressed as a percentage of the total population aged 15 or over.

¹¹ For example in the BMW between 1993 and 1998, the male labour force participation rate declined slightly (80.8% to 79.3%). This is most likely because of an aging population with few employment opportunities.

¹² Where the QNHS is used and a choice of quarterly data is available, the CSO recommend using 2nd Quarter data (March-May) as this reference period is least susceptible to seasonal variation.

2. LABOUR MARKET INDICATORS

2.2. EMPLOYMENT AND EMPLOYMENT CHANGE

Why a National Development Plan Indicator?

Employment growth is a key indicator of economic growth with a strong association between both¹³. The NDP 2000-2006 recognised this and the Employment and Human Resources Development Operational Programme earmarked investment aimed at promoting employment and skills development in a constantly changing market place. Nationally there has been sustained employment growth for over eight years. The NDP 2007-2013 forecasts that while employment growth is set to continue, the rate of growth is not expected to be as high as the preceding period. Employment growth nationally is forecasted to be 2-2.5% per annum over the Plan period.

An Indicator of Balanced Regional Development

The distribution of employment and employment growth is not uniform. While there has been employment increases in all NUTS3 regions the extent and rate of growth has varied.

The employment rate measures the number employed aged 15 to 64 years, as a percentage of the total population aged 15 to 64 years, and is an internationally used indicator. Employment rates are a function of both labour force participation rates and employment levels.

Traditionally there have been significant regional differences in employment rates with lower employment rates in the BMW region due to lower labour force participation rates in the BMW region and stronger employment growth in the S&E region overall. Therefore, while employment rates have been rising, regional differences remain. These regional differences are evident in the regional share of employment and the regional share of employment growth.

These trends are best measured by indicators measuring (a) the change in employment; (b) the rate of change; (c) the employment rate; (d) the regional employment share; and (e) any change in regional share.

Employment, Employment Change, Employment Rate, Employment Distribution (Share) and Change in Share

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Employment, Employment Change, Employment Rate, Employment Distribution (Share) and Change in Share	CSO QNHS	NUTS3 (by gender)	Quarterly	Q2 2006	Eurostat

¹³ More often than not economic growth will be reflected in employment growth. However, in the early 1990s Ireland experienced a phenomenon of 'jobless growth' where GDP was growing strongly but employment growth was very limited.

Recent data show that while all NUTS3 regions experienced employment growth the rate of growth varies considerably. Consequently the regional share of employment is declining in some regions and rising in others.

For example, in 2006 the estimated employment in the Border region was 205,200, representing (a) an increase of 7,400 or (b) 3.7% since 2005. The employment rate (c) in the Border region in 2006 was 64.8%. Despite the increase in employment, the Border region accounted for (d) 10.1% of national employment, (e) a decline from 10.3% on the previous year.

Employment, Percentage Change, Employment Rate, Employment Distribution (Share) and Change in Share, 2006

Region	Employment	Employment Change 2005-2006 (a) (b)	Employment Rate 2006 (c)	Regional Employment Share 2006 (d)	Change in Regional Share 2005-2006 (e)
Border - NUTS3	205,200	+7,400 (+3.7%)	64.8%	10.1%	Decrease (10.3% in 2005)
Dublin - NUTS3	595,400	+21,100 (+3.6%)	69.7%	29.5%	Decrease (29.7% in 2005)

2. LABOUR MARKET INDICATORS

2.3 UNEMPLOYMENT, UNEMPLOYMENT RATE AND LONG-TERM UNEMPLOYMENT RATE

Why a National Development Plan Indicator?

The unemployment rate is a key indicator of the labour market measuring the number of people unemployed but seeking employment. The unemployment rate represents the percentage of the labour force that is unemployed in any given population. It is a measure of the level of economic activity and labour demand in relation to population levels and labour supply. Male and female unemployment rates are rarely the same though the trend may be similar. The difference in gender rates is partly attributable to traditionally different labour markets and the different characteristics of female labour market participation.

The NDP 2007-2013 forecasts that the unemployment rate nationally will remain below 5% over the Plan period.

An Indicator of Balanced Regional Development

Historically there have been regional divergences in unemployment rates and while the long-term trend of decreasing unemployment rates has been evident across all regions for some time, some regions continue to experience higher rates. For example the unemployment rate in the Border region has always been higher than in the Dublin or Mid-East regions.

The long-term unemployment rate is the number of persons unemployed for one year or more expressed as a percentage of the total labour force. It is an indicator of long-term employability and may reflect a mismatch of supply and demand in terms of skills and education. There are regional differences in long-term unemployment rates and some regions may have a disproportionately higher share of long-term unemployed; for example, the West had a lower unemployment rate than Dublin but a higher long-term unemployment rate.

Unemployment, Unemployment Rate and Long-Term Unemployment Rate

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Unemployment, Unemployment Rate and Long-term unemployment rate (by Gender)	CSO QNHS	NUTS3 Request county data by gender	Quarterly	Q2 2006	Eurostat

Unemployment, Unemployment Rate and Long-term Unemployment Rate by Region, 2006

Region	Unemployment	Unemployment Rate	Long-Term Unemployment Rate
West - NUTS3	8,600	4.2	1.4
Dublin - NUTS3	29,700	4.8	1.3

3. ECONOMIC STRUCTURE AND PERFORMANCE INDICATORS

3.1 EMPLOYMENT AND EMPLOYMENT SHARE BY SECTOR

Why a National Development Plan Indicator?

Employment disaggregated by sector is one measure of the sectoral profile of economic activity and the associated employment trends are important indicators of the growth and decline of various sectors. The sectoral profile in terms of output will be examined using other indicators.

Increasingly, the manufacturing and services sectors have been driving recent economic and employment growth, while the numbers employed in agriculture have been persistently declining. This is a common trend evident in most developed economies. The QNHS is the best source of data for providing a current picture of the sectoral distribution of all those employed at a regional level. This indicator takes employment as measured in Indicator 2.2 and disaggregates this by sector.

An Indicator of Balanced Regional Development

Different regions have a different sectoral profile which is a consequence of natural endowment, historical factors and government policy. An example of the latter is the establishment of the International Financial Services Centre (IFSC) in Dublin. Particular sectoral concentrations of economic activity and employment have implications for regional performance now and into the future. For example, the West has proportionately higher numbers employed in Agriculture, Forestry & Fishing – which in employment terms is a declining sector. Conversely in the Mid-East region there is a higher proportion engaged in the Financial and Other Business Services sector which is both a growing and a higher value sector.

Persons aged 15 Years and over in Employment and Percentage Share by NACE Economic Sector¹⁴

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Persons in Employment and Percentage Share by Sector	QNHS	NUTS3 (by gender)	Quarterly	Q2, 2006	Eurostat

¹⁴ (NACE Rev.1) This classification distinguishes 11 different sectors.

Persons aged 15 Years and Over in Employment and Percentage Share by NACE Economic Sector, 2006

NACE Economic Sector	West - NUTS3		Mid-East -NUTS3	
	'000	% Share	'000	% Share
Agriculture, forestry & fishing	18.6	9.5	11.1	4.9
Other production industries	28.6	14.6	32.0	14.2
Construction	28.6	14.6	34.7	15.4
Wholesale & retail trade	27.7	14.2	32.2	14.3
Hotels and restaurants	12.3	6.3	10.2	4.5
Transport, storage and communication	7.7	3.9	12.6	5.6
Financial and other business services	16.8	8.6	28.6	12.6
Public administration and defence	11.6	5.9	13.6	6.0
Education	13.5	6.9	15.9	7.0
Health	21.4	10.9	19.6	8.7
Other Services	8.7	4.4	15.0	6.6
Total	195.5	100.0	225.6	100.0

3. ECONOMIC STRUCTURE AND PERFORMANCE INDICATORS

3.2 OUTPUT – REGIONAL GDP – INDEX OF GROSS VALUE ADDED PER PERSON

Why a National Development Plan Indicator?

Economic growth is a key objective of the NDP. Gross Value Added (GVA¹⁵) and Gross Domestic Product (GDP) both measure the value of goods and services produced within a region¹⁶. GVA is a measure of economic activity and provides an indication of the structure and performance of different economic sectors and regions. GVA at basic prices is chosen as the most appropriate indicator as the purpose is to measure output.

An Indicator of Balanced Regional Development

Reducing economic disparity between regions is a key objective in achieving balanced regional development. The level of economic activity is a very important barometer of the performance of a region both in relation to other regions and over time. Differences in regional GDP are one indicator of regional economic performance as they reflect the relative output of regions. GVA per person is significantly higher in the S&E region, compared to the BMW. At NUTS3 level regional differences are also evident. For example, in 2004, the Dublin plus Mid-East region¹⁷ recorded an index of GVA per person of 116.8%, (16.8% above the state average), compared to the West region which had a GVA of 74.8% of the state average.

Index of GVA per person at Basic Prices (State = 100)

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Index of GVA per person at Basic Prices	County Incomes and Regional GDP ¹⁸	NUTS3	Annual	2004 (Released Feb 2007)	Eurostat

Index of GVA per person at Basic Prices (State = 100), 2001-2004

GVA per person	2001	2002	2003	2004
West - NUTS3	77.7	69.7	70.1	74.8
Dublin plus Mid-East (GDA)	118.3	115.1	115.9	116.8
Dublin - NUTS3	130.0	127.6	131.5	133.3

¹⁵ GVA is one of the key official measures of economic activity at regional level within the EU. GDP is the same measure as GVA in that they both measure the goods and services produced within a region. They differ in how they treat product taxes and product subsidies; GDP includes taxes and excludes subsidies, GVA excludes taxes and includes subsidies.

¹⁶ GVA includes the profits of foreign multinationals which, within certain sectors notably modern manufacturing, can be substantial. These profits do not accrue to the regions in which the companies are located but are repatriated to the host country. In this context, GNP which excludes these profits is a more accurate measure of that which is retained in Ireland and accruing to Irish residents. However GDP/GVA is the only indicator available at regional level.

¹⁷ The CSO argue it is more meaningful to analyse the Dublin and Mid-East regions together *as they are affected significantly by workers living in one region and commuting to work in the other*. CSO, County Incomes and Regional GDP, 2004, p.2.

¹⁸ Table 10 of current release.

The trend in regional differences in GVA is also an important indicator of regional convergence or divergence. The GVA in the West region increased from 70.1% of the state average to 74.8% between 2003 and 2004, while that of the Dublin plus Mid-East region increased by a lesser margin (from 115.9% to 116.8%) indicating a degree of convergence¹⁹.

¹⁹ While these figures give an indication of regional convergence, to accurately examine trends, absolute GVA per person at Basic Prices should be used.

3. ECONOMIC STRUCTURE AND PERFORMANCE INDICATORS

3.3 GROSS VALUE ADDED BY BROAD SECTOR

Why a National Development Plan Indicator?

The transition from a predominantly agricultural based society to an economy where high-tech manufacturing and services are considerably more important is evident across all regions. Government policy recognises this and through various measures actively supports this transition, for example funding R&D and supporting the upskilling and retraining of the labour force.

An Indicator of Balanced Regional Development

To what extent is this transition to an economy dominated by services and manufacturing employment occurring throughout Ireland? How productive are each of these sectors of the economy? Gross Value Added by sector provides some answers to these questions. The share of total GVA produced by each sector shows how the various sectors contribute to the overall output of each region. This indicator is important as a measure of sectoral composition and performance at a regional level.

For example, in 2004, Agriculture, Fishing & Forestry was more significant in the West (4.2% of GVA) than in the Greater Dublin Area (0.7% of GVA).

Percentage Share of GVA at Basic Prices produced by each Broad Sector

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Percentage Share of GVA by Broad Sector	County Incomes and Regional GDP ²⁰	NUTS3	Annual	2004 (Released Feb 2007)	OECD

Percentage Share of GVA at Basic Prices produced by each Broad Sector

Sector	West - NUTS3		Greater Dublin Area ²¹	
	2003	2004	2003	2004
Agriculture, Forestry & Fishing	4.5	4.2	0.8	0.7
Manufacturing, Building & Construction	31.0	32.5	31.3	30.4
Market and Non-Market Services	64.5	63.4	67.9	68.8
Total	100.0	100.0	100.0	100.0

Examining trends, the relative importance of Agriculture, Fishing & Forestry declined in both regions shown between 2003 and 2004. Over the same period, in the West region the relative share of GVA produced by Manufacturing, Building and Construction increased and the share produced by Market and Non Market Services decreased. This shows that the Manufacturing, Building and Construction sector is increasing in relative importance within the West regional economy.

²⁰ Table 16 of current release.

²¹ Dublin plus Mid-East regions. The CSO argue that *It is more meaningful to analyse the Dublin and Mid-East regions together rather than separately as they are affected by workers living in one region and commuting to work in the other.* CSO, County Incomes and Regional GDP, 2004. p.2.

In the Greater Dublin Area there was a different pattern. The percentage share of GVA produced by Manufacturing, Building and Construction declined while the percentage share produced by Market and Non Market Services increased.

3.4 PERCENTAGE SHARE OF EACH BROAD SECTOR GVA BY REGION

It is also instructive to examine how each of the regions contributes to the overall national output of each of the sectors.

As the table below illustrates, in 2004, the West region contributed 7.3% to the total national GVA compared with 45.7% from the Greater Dublin Area.

Examining the contribution of each region to national GVA by sector also illustrates significant variations. The West region contributes just 6.4% of all GVA arising from manufacturing whereas the Greater Dublin Area contributes well over a third (37.7%). The difference in regional output in the services sector is even more stark. The West region contributes 7.6% of services output while the Greater Dublin Area contributes over half of all national services output (51.9%). These data show the difference in scale of the economies at regional level.

Percentage Share of each Broad sector GVA at Basic Prices by Region

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Percentage Share of each Broad sector GVA by Region	County Incomes and Regional GDP ²²	NUTS3	Annual	2004 (Released Feb 2007)	OECD

Percentage Share of each Broad sector GVA at Basic Prices by Region, 2002, 2004

Sector	West - NUTS3		Greater Dublin Area ²³	
	2003	2004	2003	2004
Agriculture, Forestry & Fishing	12.2	12.2	13.6	13.5
Manufacturing, Building & Construction	5.5	6.4	36.9	37.7
Market and Non-Market Services	7.5	7.6	52.3	51.9
Total GVA	6.8	7.3	45.4	45.7

These two indicators when viewed together (3.3 and 3.4), show the relative importance of each sector to each region and shows how each region contributes to the national output of each sector.

For example, in 2004, Agriculture, Fishing & Forestry was more significant in the West (4.2% of its GVA) than in the Greater Dublin Area (0.7% of its GVA) (see table Indicator 3.3), yet despite its greater importance in the West's regional economy, that region contributed 12.2% of the total national GVA for Agriculture, Forestry and Fisheries, less than the share (13.5%) contributed by the Greater Dublin Area (see table Indicator 3.4).

²² Table 17 of current release.

²³ Dublin plus Mid-East regions. See footnote 21.

3. ECONOMIC STRUCTURE AND PERFORMANCE INDICATORS

3.5 THE KNOWLEDGE ECONOMY - EMPLOYMENT SHARE IN KNOWLEDGE INTENSIVE SECTORS

Why a National Development Plan Indicator?

Positioning Ireland (and its regions) as a Knowledge Economy has been Government policy for some time (see Technology Foresight Report, 1999). The extent of employment in knowledge intensive sectors and occupations is both an outcome of other policies (for example, education policy and ICT infrastructure policy) and a driver of innovation and technological research and development.

An Indicator of Balanced Regional Development

The spatial distribution of employment in knowledge intensive activity is important as an indicator of the ability of regions to contribute to and participate in those sectors which are set to grow.

Measuring knowledge intensity is a difficult task. Some indicators (particularly at national level) will measure R&D expenditure as a way of assessing knowledge intensity (see Section 5). Another common indicator is the share of employment in knowledge intensive sectors as a percentage of the total employed. The difficulty is choosing a data source that best captures these sectors. The QNHS cannot provide regional data at a sufficiently detailed sectoral level²⁴. Alternatively the Census of Industrial Production only captures industrial and manufacturing sectors. The NDP 2000-2006 used the CIP to measure 'high-tech' employment but this excluded services employment. The Annual Services Inquiry will only provide data at NUTS2 level²⁵.

On account of these difficulties an indicator based on the Forfás Annual Employment Survey²⁶ is considered the best. These data capture all those companies receiving agency assistance and include both manufacturing and services. Measuring this state supported employment in knowledge intensive activity is also important as it is additional state investment in the development of the knowledge economy.

This indicator measures the numbers employed in the high-tech manufacturing sectors of Chemicals (24) and Electrical & Optical (30-33) and the knowledge intensive services sectors of International Services²⁷ and Financial Services. This gives a measure of state supported knowledge employment. Employment in these sectors as a proportion of all state assisted employment provides an indicator of the share of employment in knowledge intensive sectors.

²⁴ The QNHS is a sample survey and cannot separate out 3 digit NACE.

²⁵ Both the CIP and AIS are quite dated (latest CIP data refers to 2004, latest AIS data refers to 2003).

²⁶ An important advantage of Forfás data is that it is collected annually, is timely and available at detailed sectoral and geographical (county) level which can allow for more detailed analyses. The Forfás dataset refers to agency assisted employment only, however it does include services. Medical Devices (331) is a subset of Electrical & Optical (30-33).

²⁷ The CIP NACE Rev1 category 'Reproduction of recorded media', (223), is coded as a service in the Forfás dataset; NACE 72, Computer and Related.

Employment in Knowledge-Intensive Sectors as a Percentage of Total Employed²⁸

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparison
Share of Employment in Knowledge-Intensive Sectors	Forfás Annual Employment Survey	NUTS3, County	Annual	2006	Various

Employment in Knowledge-Intensive Sectors as a Percentage of Total Employed

Share of Employment in Knowledge-Intensive Sectors	2004	2006
Border- NUTS3	29.2	28.6
West - NUTS3	51.2	53.7
Dublin - NUTS3	64.5	68.7

These data show that over two-thirds of those employed in state assisted employment in the Dublin region were in knowledge-intensive sectors, in contrast with the Border region where the figure was 28.6%.

²⁸ This refers to agency assisted employment only, sourced from the Forfás Annual Employment Survey which captures employment supported by the IDA, Enterprise Ireland, Shannon Development and Údaras na Gaeltachta.

4. EDUCATION INDICATORS

4.1 POPULATION CLASSIFIED BY HIGHEST LEVEL OF EDUCATION ATTAINED

Why a National Development Plan Indicator?

Educational qualifications are an important indicator of the skill level and quality of the labour force which in turn is a key consideration in the location requirements of mobile investment and associated employment opportunities. As noted, government policy is to position Ireland as a 'knowledge economy'. High levels of education, particularly at third and higher levels are important inputs into the knowledge economy and are innovation drivers. This is reflected in the NDP where investment in education, training and upskilling are accorded a high priority.

Nationally educational attainment has been increasing and participation rates at third level have been rising steadily. Nonetheless there has been significant regional variation in participation with higher than average admission rates to third level institutions among most counties on the Western seaboard²⁹. However, historically the level of graduate retention there has been low due to poor employment opportunities.

An Indicator of Balanced Regional Development

Regional variations in educational attainment levels reflect a variety of factors. Educational attainment levels will be reflected in the regional occupational structure. For example regions with a higher proportion engaged in agriculture, building and construction and traditional manufacturing, are in general, more likely to have lower educational attainment levels. Similarly regions with a significant presence of 'high-skill' manufacturing and services employment are more likely to attract and retain those with relatively high education levels. Low levels of educational attainment can also reflect early drop-out rates associated with rural and urban deprivation.

Percentage of Population (aged 15-64yrs)³⁰ classified by highest level of education attained

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Percentage of Population classified by highest level of education attained	CSO QNHS	NUTS3 (Special run)	Quarterly	2006	Eurostat

The rising educational attainment levels are evident from the table below. The West continues to have a lower proportion of population with education of third level degree or above.

²⁹ Rates of Admission to Higher Education by County 2004, 1998, 1992, 1986. (Various sources but comparable methodology) all HEA.

³⁰ The base population could also be those in the labour force or in employment but population of working age is chosen as it is the greater sample and disaggregating at regional levels is less problematic. Also these indicators are chosen to measure the region not the economy. The labour force includes those looking for work but not those who may be discouraged workers (which might reflect a skills mismatch).

Percentage of Population (aged 15-64yrs) with Third Level Degree or above

	2004	2006
West - NUTS3	14.0	15.3
Mid-East - NUTS3	15.0	16.4

4. EDUCATION INDICATORS

4.2 EMPLOYED GRADUATES BY COUNTY OF ORIGIN AND OF FIRST EMPLOYMENT

The educational profile of those in employment (or population of working age or labour force) does not reflect the higher admission rates to third level education evident in some counties and regions. The location of employment opportunities is critical in attracting and retaining those with higher education levels. An indicator of imbalance between supply and demand of third level qualifications is therefore useful and illustrates significant regional divergences.

Employed Graduates by County of Origin and of First Employment

Indicator	Data Source Title	Spatial Unit	Latest Data	Frequency	International Comparator
Employed Graduates by County of Origin & County of First Employment	HEA. <i>First Destinations of Award Recipients in Higher Education</i> (Special run)	County	2004 Graduates (2006)	Annual	Various

The table below shows employed graduates by county of origin and county of first employment for the seven counties in the Western Region. Apart from Galway and Sligo, all counties listed had a higher proportion of graduates gaining their first employment in Dublin rather than in their home county. For example 26.5% of those from Mayo stayed in Mayo, gaining their first employment in their native county, while 35% left, gaining their first employment in Dublin.

It is worth noting that time series data suggest improving retention rates, with a higher proportion of graduates in the West gaining their first employment in their native county.

Employed Graduates by County of Origin and of First Employment 2004

County of Origin →	Donegal	Sligo	Leitrim	Roscommon	Mayo	Galway	Clare	Total (West)
County of Employment ↓								
Donegal	33.3	-	3.9	-	0.4	0.2	-	3.8
Sligo	3.3	34.6	9.8	3.4	4.2	1.2	1.3	5.6
Leitrim	-	2.3	19.6	-	0.4	-	-	1.0
Roscommon	0.7	0.8	-	19.3	0.7	0.4	-	1.6
Mayo	-	1.5	-	-	26.5	1.6	0.9	6.1
Galway	7.3	12.8	3.9	13.6	15.5	53.3	11.6	26.2
Clare	-	-	2.0	-	-	0.2	20.3	3.4
Dublin	33.3	30.8	47.1	35.2	35.0	23.2	20.7	28.5
Other, Irl*	12.7	8.3	7.8	15.9	11.3	10.8	35.3	15.0
Overseas	9.3	9.0	5.9	12.5	6.0	9.1	9.9	8.7
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	150	133	51	88	283	492	232	1,429

* Includes Northern Ireland counties.

5. INCOME AND POVERTY INDICATORS

5.1 INCOME PER CAPITA

Why a National Development Plan Indicator?

Poverty reduction is one objective of Government policy articulated in the National Partnership Agreement *Towards 2016* and the National Action Plan for Social Inclusion 2007-2016 (NAPincl). The Social Inclusion Priority in the NDP contains a number of high level social inclusion goals aimed at achieving poverty reduction.

Increased incomes and more equitable income distribution, while not articulated as explicit objectives in the NDP, are expected outcomes as a consequence of measures such as increased employment, higher value-added employment, training and education provision among many other measures. Income levels are an important indicator of wealth, living standards and quality of life. An indication of relative incomes should therefore be included as a context indicator for the NDP.

An Indicator of Balanced Regional Development

Disposable income per person³¹ is a more reliable indicator of relative living standards compared to GDP per person. It measures income after taxes and social insurance contributions. The latest data (2004) show that at a regional level, the disposable income per person in the Dublin region was 11.8 points above the state average while the figure for the West region was 4.9 points below the state average. This represents a gap of 16.7 points between the two regions and indicates a narrowing of the differential compared to previous years, in 2003 there was a gap of 19 points and in 2002 there was a gap of 20.4 points. At county level there is evidence of more disparity. Only four counties had an average disposable income per person greater than the state average, (Dublin, Limerick, Kildare and Cork). All other counties including all those in the Western Region) had a disposable income per person below the state average.

Index of Disposable Income Per Person (State = 100)

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Index of Disposable Income Per Person	CSO County Incomes and Regional GDP	County NUTS3	Annual	2004 (Released Feb 2007)	Eurostat

Index of Disposable Income Per Person (State = 100)

Indicator	2002	2003	2004
West – NUTS3	93.1	94.0	95.1
Mid-East – NUTS3	100.8	99.4	98.1
Dublin – NUTS3	113.5	113.0	111.8

³¹Disposable income is defined as total income (primary income less earnings, plus social benefits, plus other current transfers), less current taxes on income, less social insurance contributions. Table 2, current release.

5. INCOME AND POVERTY INDICATORS

5.2 POVERTY INDICATORS, CONSISTENT POVERTY RATE

Why a National Development Plan Indicator?

The promotion of social inclusion and poverty reduction are principal public policy objectives contained in the NDP and successive National Partnership Agreements. The new National Action Plan for Social Inclusion 2007-2016 (NAPincl) has formulated strategic responses to combating poverty recognising that poverty is multi-dimensional and factors driving poverty and deprivation include unemployment, poor education and skill levels among others.

In the NDP there is a specific social inclusion chapter where a key overarching aim is poverty reduction. In addition many of the specific programmes and measures are targeted at changing the many causal factors and so poverty reduction is an aim of the cumulative measures of the Plan as well as an objective of specific programme measures.

An Indicator of Balanced Regional Development

The National Action Plan for Social Inclusion recognises that poverty has a spatial dimension and distinguishes between poverty associated with disadvantaged urban areas and rural poverty. The data also illustrate a regional pattern to poverty. There are two main poverty indicators:

1. The consistent poverty rate which measures the proportion of people from those below a certain income (60% of the median) and who are deprived of one or more goods or services considered essential for a basic standard of living.
2. The at-risk-of-poverty rate which measures those living in households where the income is less than 60% of the median at an individual level.

5.2 CONSISTENT POVERTY RATE

Nationally the preferred indicator is the consistent poverty indicator³². This combines relative income measures with an element of enforced deprivation. Consistent poverty is defined as being at risk-of poverty (where the income is less than 60% of the median at an individual level) **and** living in a household deprived of one or more eight basic deprivation items³³.

³² This is the key indicator used in the National Anti-Poverty Strategy (1997) and its successors. It is the indicator favoured by Government and is also that favoured in the current National Action Plan for Social Inclusion. This is the indicator which was used in the Living in Ireland (LII) Survey. The EU Survey on Income and Living Conditions has replaced the LII since 2001.

³³ The new National Action Plan for Social Inclusion will amend the consistent poverty measure which was originally devised in 1987. The current measure (as above) is based on lacking one or more items from an 8-item index. This will change to being based on lacking two or more items from an 11 item index.

Percentage of Persons in 'consistent poverty' at 60% level using basic-life-style deprivation indicators

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Percentage of Persons in 'consistent poverty'	CSO EU Survey on Income and Living Conditions	NUTS3, Rural/Urban ³⁴	Annual	2005 (released 2006)	EU-SILC

There are also regional and rural/urban differences evident in consistent poverty rates. The consistent poverty rate is greater in the BMW region compared to the S&E, however, unlike the at-risk-of poverty rate, the consistent poverty rate is higher in urban areas than in rural areas.

The trend data show that the percentage in consistent poverty has increased in the BMW region between 2004 and 2005, while in the S&E region there has been a decrease over the same period. At a NUTS3 level the percentage in consistent poverty in the West declined over the two years.

Percentage of Persons in 'consistent poverty' at 60% level using basic-life-style deprivation indicators³⁵, 2004, 2005

Region	2004	2005
West - NUTS3	7.4	5.8
BMW	8.6	10.0
S&E	6.2	5.8
Rural	5.5	6.6
Urban	7.6	7.2

³⁴ Urban is defined as centres with a population of 1,000 or greater. Rural areas are the remainder.

³⁵ These data are available by gender also.

5.3 AT-RISK-OF-POVERTY RATE

The at-risk-of poverty rate is an official EU indicator of poverty and one of the most widely accepted poverty indicators. This indicator measures those living in households where the income (on an equivalised basis) is less than 60% of the median at an individual level. This is also a measure of the levels of inequality in a society. The at-risk-of-poverty rate *after social transfers* is considered the more meaningful measure as it takes account of payments under the social welfare system.

At-risk-of-poverty rate after social transfers, (60% threshold)

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
At-risk-of-poverty rate	CSO EU Survey on Income and Living Conditions	NUTS3 ³⁶ , Rural/Urban	Annual	2005 (Released 2006)	EU-SILC

At-risk-of-poverty rate after social transfers, (60% threshold), 2004, 2005

Region	2004	2005
West - NUTS3	25.2	26.7
BMW	26.0	26.6
S&E	17.2	15.5
Rural	24.1	22.5
Urban	16.6	16.0

The table shows there is a greater risk of poverty among those living in the BMW region compared with the S&E region. These data also show that the at-risk-of poverty rate has increased in both the BMW region and in the West NUTS3 region between 2004 and 2005. It is also evident that those living in rural areas are more at-risk-of poverty than their urban counterparts.

³⁶ The CSO have indicated that these data and the statistics on consistent poverty can be released at NUTS3 level. NUTS2 level data are also available by gender.

6. INNOVATION AND TECHNOLOGY INDICATORS

6.1 HOUSEHOLD BROADBAND ACCESS

Why a National Development Plan Indicator?

Technology and knowledge are essential factors of production in modern economies and key to competitiveness in a global economy. Unequal access to both can compound existing inequalities and regional divergence. On the other hand access to advanced telecommunications, particularly broadband, can reduce the constraints of distance and remoteness. Public investment in information and communications technology (ICT) is a major determinant of competitiveness and the Communications and Broadband programme in the NDP 2007-2013 is an acknowledgement of this.

An Indicator of Balanced Regional Development

Broadband is a key element of modern telecommunications and a key enabler for participation in the modern economy and society. Increasingly business engages with customers, suppliers and new markets using broadband. Broadband is also recognised as an enabler for smaller, geographically remote communities.

However, broadband rollout has been concentrated in higher density urban areas. A cyclical pattern has ensued where poor broadband access results in low internet use and therefore apparent low demand. Commercial providers then regard these areas as less attractive for investment. It is therefore important to monitor the extent of and trends in broadband penetration and internet access.

Percentage of Households with a Broadband Internet Connection

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Percentage of Households with a broadband internet connection	CSO QNHS Module on Information and Communications Technology, Qtr2	NUTS2	Annual 2006	2006	Eurostat

These data are only available at NUTS2 level. The data shows that broadband take-up is increasing in both regions; however there is a significant regional difference in the levels of broadband access.

Percentage of Households with a Broadband Internet Connection

Region	2004	2005	2006
BMW	2.5	7.6	11.4
S&E	8.8	18.9	31.2

6. INNOVATION AND TECHNOLOGY INDICATORS

6.2 RESEARCH AND DEVELOPMENT EXPENDITURE AND PERFORMANCE

Why a National Development Plan Indicator?

Research and Development are very important drivers of knowledge creation and innovation both of which are seen as vital to Ireland's continued economic growth. In recognition of this the state supports research and development activity through various programmes, principally those delivered through Higher Education Institutions and Science Foundation Ireland. The National Development Plan 2007-2013 has allocated nearly €2 billion to the Higher Education Sector to promote innovation and research across a range of areas including the Strategic Innovation Fund. The private sector also engages in research and development some of which is funded from state resources.

An Indicator of Balanced Regional Development

The level of research expenditure is an important indicator of the scale of activity. Another key consideration is the location of research and development activity or where it is performed, as this is an important knowledge activity and will be reflected in the knowledge profile and potential of the region.

The data on these issues is relatively weak and the most robust data is only available at NUTS2 level. As research and innovation have become policy priorities relatively recently, this is perhaps understandable. However the acknowledged importance of these activities at both national and international level underline the need for data at regional level and in its absence, highlight the difficulties in assessing the extent of research and development activity there.

Survey data is collected on research and development activity in the Higher Education sector, State Expenditure on Science & Technology and in the Business sector. These data are available at NUTS2 levels. Unsurprisingly much of the research activity in the Higher Education sector is conducted in the S&E region, where nearly all the universities are located. Nonetheless it is instructive to note the regional share of each type of research activity and the location of this activity.

6.2 HIGHER EDUCATION

Higher Education R&D in current prices by Region

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Higher Education R&D by Region	Forfás	NUTS2, BMW, S&E.	Bi-annual 2001-2005	2004	OECD

Higher Education R&D by Region €mn and Share

Region	2002		2003		2004	
	€mn	%	€mn	%	€mn	%
BMW	33.8	10.5	50.0	12.4	67.0	13.6
S&E	288.5	89.5	354.4	87.6	425.0	86.4
Total	322.3	100.0	404.4	100.0	492.0	100.0

The data shows that the amount of expenditure on Higher Education Research and Development has been increasing steadily. It also shows that the BMW share of funding has been increasing but from a very low base of 10.5% in 2002.

6.3 BUSINESS EXPENDITURE ON RESEARCH AND DEVELOPMENT

Business expenditure on research and development measures the expenditure of companies operating in Ireland and the region in which that research and development is performed.

Business Expenditure on R&D in current prices by Region

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Business Expenditure on R&D by Region	Forfás	NUTS2, BMW, S&E excl Dublin, & Dublin.	Bi-annual. 2001-2005	2007	OECD

Expenditure on research and development by companies is significantly greater than that undertaken by the higher education sector (Indicator 6.2). At a regional level, the BMW share of business expenditure on R&D is much greater than that undertaken by the higher education sector. The data also show that overall the amount of business expenditure on R&D has been increasing. In addition, the BMW share has increased as the table below illustrates.

Business Expenditure on R&D by Region €mn and Share

Region	2003		2005	
	€mn	%	€mn	%
BMW	165	14.9	341.4	25.7
Dublin	510	46.2	547.2	41.2
Rest of Country (S&E excl Dublin)	430	38.9	440.2	33.1
Total	1,105	100.0	1,328.7	100.0

6.4 INNOVATION ACTIVITY

The Community Innovation Survey includes innovation supported by both private and public sector finance. The latest survey (CIS4), is the fourth in the series but is the first with a regional distinction, therefore to-date only one observation is available.

Innovative active firms are defined as those who have *carried out a product or process innovation or abandoned an innovation activity during the three years 2002, 2003 and 2004.*

Percentage of Innovation Active Firms by Region and Sector

Indicator	Data Source Title	Spatial Unit	Frequency	Latest Observation	International Comparator
Percentage of Innovation Active Firms by Region and Sector	Community Innovation Survey (CIS)	NUTS2, (CIS4)	Bi-annual.	2002-2004 (Released Nov 2006)	Eurostat

Percentage of Innovation Active Firms 2002-2004

Region	Industrial Sector	Services Sector	Total
BMW	59.5	38.4	50.8
S&E	62.1	45.3	52.6

As is evident from the most recent data available, there is more innovation activity carried out in the industrial sector than in the services sector. Examining activity by region there is more innovation activity within firms in the S&E region across both industrial and services sectors.

APPENDICES

APPENDIX 1. REGIONAL DEVELOPMENT INDICATOR SERIES

Domain	Sub-Domain	Indicator	Data Source	Spatial Unit	Latest Observation	Frequency	International Comparator
1. Demographic	1.1 Population	Population, Percentage Change, Population Distribution (Share) and Change in Share	CSO Population and Migration Estimates	NUTS3	September 2006	Annual	Eurostat
	1.2 Age Structure - Population of Working Age	Proportion of Population of Working Age (15-64 years)	CSO Population and Migration Estimates	NUTS3	September 2006	Annual	Eurostat
2. Labour Market	2.1 Labour Force	Labour Force Participation Rates by gender	CSO, QNHS ³⁷	NUTS3	Q2 2006	Quarterly	Eurostat
	2.2 Employment	Employment, Employment Change, Employment Rate, Employment Distribution (Share) and Change in Share	CSO, QNHS	NUTS3	Q2 2006	Quarterly	Eurostat
	2.3 Unemployment	Unemployment, Unemployment Rate and Long-term unemployment rate	CSO, QNHS	NUTS3	Q2 2006	Quarterly	Eurostat
3. Economic Structure	3.1 Total employment by sector	Persons in Employment and Percentage Share by Sector	CSO, QNHS	NUTS3	Q2 2006	Quarterly	Eurostat
	3.2 Output - Regional GDP	Index of GVA per person at Basic Prices	CSO, County Incomes and Regional GDP	NUTS3	2004 (Released Feb 2007)	Annual	Eurostat

³⁷ For yearly comparisons the Spring/Summer quarter is the preferred Quarter as it is least subject to seasonal factors.

Domain	Sub-Domain	Indicator	Data Source	Spatial Unit	Latest Observation	Frequency	International Comparator
	3.3 Share of GVA by Sector	Percentage Share of GVA at Basic Prices by each Broad Sector	CSO, County Incomes and Regional GDP	NUTS3	2004 (Released Feb 2007)	Annual	Eurostat
	3.4 Regional share of sectoral GVA	Percentage Share of each Broad sector GVA by Region	CSO, County Incomes and Regional GDP	NUTS3	2004 (Released Feb 2007)	Annual	Eurostat
	3.5 The Knowledge Economy	Share of Employment in Knowledge-Intensive Sectors	Forfás Annual Employment Survey	County, NUTS3	2006	Annual	Various
4. Education	4.1. Level of Educational attainment	Percentage of Population classified by highest level of education attained	CSO, QNHS, Special Run	NUTS3	Q2, 2006	Annual	Eurostat
	4.2 Origin and destination of Graduates	Employed Graduates by County of Origin & county of first employment	Higher Education Authority. <i>First Destinations of Award Recipients in Higher Education</i> (Special run)	County	2004 Released in 2006	Annual	Various national sources
5. Income and Poverty	5.1 Income Per Capita	Index of Disposable Income Per Person	CSO County Incomes and Regional GDP	County, NUTS3	2004 (Released Feb 2007)	Annual	Eurostat
	5.2 Consistent Poverty	At-risk-of-poverty rate after social transfers, (60% threshold).	CSO EU Survey on Income and Living Conditions	NUTS3, Rural/urban	2005 (Released 2006)	Annual	EU-SILC
	5.3 At risk of Poverty	Percentage of Persons in 'consistent poverty'.	CSO EU Survey on Income and Living Conditions	NUTS3, Rural/urban	2005 (Released 2006)	Annual	EU-SILC

Domain	Sub-Domain	Indicator	Data Source	Spatial Unit	Latest Observation	Frequency	International Comparator
6. Innovation and Technology	6.1 Household Broadband Access	Percentage of Households with a broadband internet connection	CSO QNHS Module on Information and Communications Technology, Qtr2	NUTS3, County (subject to sample size).	2006	Annual	Eurostat
	6.2 Higher Education Research and Development	Higher Education Research & Development in Current Prices	Forfás	NUTS2, BMW, S&E excl Dublin, & Dublin	2004	Annual	OECD
	6.3 Business Expenditure on Research and Development	Business Expenditure on Research and Development in Current Prices	Forfás	NUTS2, BMW, S&E excl Dublin, & Dublin	2005 (Released February 2007)	Annual	OECD
	6.4 Innovation Active Firms	Percentage of Innovation Active Firms by broad sector by region	Forfás	NUTS2, BMW, S&E	2002-2004	Biannual	OECD

APPENDIX 2. REFERENCES

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