

## Feasibility Study for a Local Poverty Index

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The views expressed in this publication are the author's own and not necessarily those of Combat Poverty.

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## Glossary

BMW	Border, Midland and Western Region (Nuts II Region of Ireland)
CEB	County Enterprise Board
CIW	Canadian Index of Well-being
COA	Census Output Area (smallest geographical area for NI Census data)
CSO	Central Statistics Office
DA	Dissemination Area (smallest geographical unit for Canadian Census)
DEHLG	Department of the Environment, Heritage and Local Government
DOE	Department of the Environment (UK)
DSFA	Department of Social and Family Affairs
ED	Electoral Division (smallest geographical unit for Irish Census data)
ESRI	Economic and Social Research Institute
EU	European Union
EU-SILC	EU Survey on Income and Living Conditions
HDI	Human Development Index (United Nations)
ISDI	Irish Spatial Data Initiative (Working Group)
JRC	European Commission Joint Research Centre
LAPISIS	Local Anti-Poverty Social Inclusion Strategy
MDM	Multiple Deprivation Measures (UK, England, Wales, Scotland and NI)
NAPinclusion	National Action Plan for Social Inclusion
NAPS	National Anti-Poverty Strategy
NCG	National Centre for Geocomputation (at NUI Maynooth)
NDP	National Development Plan
NESC	National Economic and Social Council
NGO	Non-Governmental Organisation
NISRA	Northern Ireland Statistics and Research Agency
NSB	National Statistics Board
NSHQ	National Survey of Housing Quality
NSRF	National Strategic Reference Framework
NSS	National Spatial Strategy
NSSPSI	National Report on Strategies for Social Protection and Social Inclusion
NUTS II	the Border, Midlands West (BMW) Region and the South East (SE) Region
NUTS III	the Dublin, Mid-East, Mid-West, South-East, South-West, Border, Midland and West Regions
NUTS IV	the 34 Local Authority areas
NUTS Regions	Nomenclature of Territorial Statistical Units (Classification of EU regions)
NUTS V	the 3,409 Electoral Divisions
NZDep	New Zealand Deprivation Index
ODFPM	Office of the Deputy First Prime Minister (UK)
OECD	Organisation for Economic Co-operation and Development
OS	Ordnance Survey of Ireland
OSI	Office for Social Inclusion (at the Department of Social and Family Affairs)
PESP	Programme for Economic and Social Progress
PIA	Poverty Impact Assessment
QNHS	Quarterly National Household Survey
QOL	Quality of Life (Index)
S&E	Southern and Eastern region (NUTS II Region of Ireland)
SA	Small Areas (new Census geography for Ireland)
SAHRU	Small Area Health Research Unit (at Trinity College Dublin)
SAPS	Small Area Population Statistics
SEUPB	Special EU Programmes Body
SGSES	Steering Group on Social and Equality Statistics
SOA	Super Output Area (higher-level NI Census Output area)
SPAR Report	Statistical Potential of Administrative Records (Report of the NSB)

# 1 Introduction

The spatial dimensions of poverty are relevant to the government policy priorities for tackling 'poverty blackspots' in urban and rural areas. The National Action Plan for Social Inclusion (NAPinclusion) highlights the 'concentrated and cumulative nature' of poverty in urban and rural areas, which has prompted numerous area programmes and related initiatives. The uneven distribution of poverty is also linked to policy concerns with balanced regional development, as is reflected in the National Development Plan (NDP) and the National Strategic Reference Framework (NSRF).

Poverty data are also important for the implementation of policy at a local level. Such data can assist in developing local anti-poverty strategies through the creation of local poverty profiles, which identify areas experiencing high levels of disadvantage. The importance of local data was also highlighted in the revised National Anti-Poverty Strategy (NAPS), in order to inform the strategy. To date, research on local poverty measures has largely been confined to the use of data from the Census of Population, as there are effectively no other national data sources available at the same level of spatial disaggregation. There is, however, a growing understanding of the usefulness of such data and this is likely to lead to new data sources becoming available over the next few years.

To explore how new data may be best utilised, Combat Poverty have contracted Trutz Haase and Ronan Foley to undertake a feasibility study on the development of a local poverty index. The study aims to provide an overview of the present situation with regard to local poverty data, identify where changes are likely to occur with regard to data availability and methods of index construction, and to identify how best to influence this process in order to maximise its benefits in the context of the NAPinclusion.

## 2 Objectives of the Study

The Terms of Reference state that the feasibility study for the development of a local poverty index should build on existing approaches by broadening the range of indicators and utilising other data sources, including administrative data. Furthermore, the local poverty index should be linked with the emerging Irish Spatial Data Infrastructure (ISDI) and support the monitoring of local poverty trends under NAPS.

The key objectives include the following:

- a. The identification of best practice approaches to measuring poverty at the local level, based on a review of international literature, including the main policy domains and the data sources used
- b. The assessment of user needs and potential benefits of establishing a local poverty index, with particular focus on the application of this index for policy purposes. Consultation with relevant stakeholders would inform this component of the research
- c. The identification of possible indicators of poverty and deprivation and associated data sources at a local level and how these would be connected with the remit of the ISDI and the Steering Group on Social and Equality Statistics (SGSES)
- d. The examination of methodologies for compiling, managing, utilising and disseminating the data, including the usefulness of a composite index, the use of GIS and the web, the use of postcodes as the basis for small area statistics and the links with the ISDI
- e. The making of recommendations for developing a local poverty index, including an overview of delivery requirements, costs and resources.

### 3 Consultation

To gauge the support for an 'official' poverty/deprivation index in Ireland and, where relevant, the willingness to contribute data towards such an index, the authors engaged in a wide-spread consultation with key stakeholders. This consultation process also addressed the question of what other issues should be considered when constructing a local poverty/deprivation index for Ireland. It should be mentioned that some of these consultations were undertaken in the context of other but related studies over the past two years.

Consulted stakeholders include:

- Representatives from the Area and Community Partnerships and PLANET
- A series of workshops involving a large variety of stakeholders who are active in rural communities
- Office for Social Inclusion
- Combat Poverty Agency
- Pobal
- Department of the Taoiseach
- Department of Social and Family Affairs
- Department of Rural, Community and Gaeltacht Affairs
- Department of the Environment, Heritage and Local Government
- Department of Education and Science.

These stakeholders strongly welcomed the initiative and expressed a wish to participate in the process. Rather than reporting on individual stakeholders' concerns or wishes, the issues raised during the consultations are taken into account throughout the report.

### 4 The Context

Below we briefly set out the context in which the study takes place. There has been a variety of developments at the political level, both nationally and at EU level, with regard to anti-poverty measures, as well as technical and methodological developments over the past few years which make it a particularly opportune time to review the environment in which our approach to measuring poverty and deprivation at the local level is to be formulated.

#### 4.1 A Developing Policy Arena

Local initiatives to combat poverty and deprivation have been a long-standing feature of the Irish political landscape. Early examples of community development were prominent, particularly in rural Ireland (e.g. *Muintir na Tíre*). Development initiatives in their current form of local Partnerships, embedded in the national partnership structures and the National Development Plan, first emerged in the early 1990s under the *Programme for Economic and Social Progress (PESP)* and have remained a stable feature of subsequent local development programmes.<sup>1</sup> Area-based initiatives have not been without their critics.<sup>2</sup> If, however, they are properly understood as a complement to, and not a replacement of, structural and national anti-poverty measures few would doubt their usefulness. It remains a fact that, despite considerable progress in combating poverty and deprivation through structural measures, principally aimed at individuals and specific target groups, deprivation has remained concentrated in particular areas that have found it difficult to break out of their predicament.

There remain differences of opinion as to what extent the deprivation experienced in particular areas, for example in local authority housing estates, are compositional (i.e. rooted in individual effects) or contextual (i.e. area effects). However, the clustering of poorer people in

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<sup>1</sup> For a detailed discussion of the *raison d'être* of local area partnership see Haase and McKeown (2003)

<sup>2</sup> See, for example, Watson *et al.* (2005)

specific estates is itself the outcome of deep-rooted, social stratification processes that are not easily overcome. Thus, the concentration of deprivation in certain localities will be with us for the foreseeable future and there remains some role for local intervention, not least for improving the delivery of generally available social services at a local level.

## **4.2 The Purpose of Local Poverty/Deprivation Indices**

The principal purpose of poverty/deprivation indices is twofold: firstly to facilitate the effective targeting of resources towards those localities that are objectively in greatest need and, secondly, for monitoring purposes and the evaluation of policy outcomes.

### **Facilitating Effective Targeting**

The welfare state, as we know it throughout the European Union, is based on a concept of the responsibility of society as a whole for those who are unable to achieve through their own efforts a certain level of economic, social and cultural participation which the rest of that society takes for granted. This understanding is not only reflected in the prevailing definitions, both nationally and EU-wide, of poverty and social exclusion, but also in the ongoing compromise that needs to be achieved between people's willingness to pay taxes and the level of transfers and services that a state can afford to assist those in need.

Deprivation indices have become the principal means by which to identify those areas that can be shown to be objectively poorer and where we know that people living in these locations have a higher propensity to be poor or socially excluded. Deprivation indices thus have an important role to play in the consensus-building that allows governments to target particular areas and provide additional supports to the people living in these areas. Historically, there has been a strong impetus towards the development of deprivation indices within the Anglo-Saxon countries, with prominent indices existing in the UK, Ireland, USA, Canada, Australia and New Zealand. In other European countries, deprivation indices exist, but tend not to be available for the whole country, and are not strongly endorsed across multiple sectors or by government departments.

### **Monitoring and Evaluation**

The second purpose of deprivation indices, and one that is much less developed than that of a targeting tool, is for monitoring and evaluation. In the narrow sense, deprivation indices can be used to evaluate the effects of area-based initiatives over time, or indeed the effects of location and deprivation in any policy context.<sup>3</sup> In a broader sense, deprivation indices could be used to monitor the impact of infrastructural expenditure on different localities. Such studies are still in their infancy, but examples do exist and are likely to become more prominent in the future.<sup>4</sup>

## **4.3 The Pros and Cons of Composite Poverty/Deprivation Indices**

As mentioned before, the use of poverty/deprivation indices is not without its critics. Equally, few would doubt the enormous advances that have been facilitated through the use of the United Nation's Human Development Index (HDI), the best known composite deprivation index in the world. The OECD has recently dedicated a special publication on best practices in composite indicator development.<sup>5</sup> The publication contains a valuable summary of the pros and cons in the development of composite indicators.

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<sup>3</sup> See, for example, the use of the Noble index in assessing the factors that determine the allocation between the religious communities under the PEACE I and II Programmes in Northern Ireland, Haase and Pratschke (2005b)

<sup>4</sup> MacDonald (2003)

<sup>5</sup> Nardo et al. (2005)



## Composite Indicators: Pros and Cons (OECD)

Pros	Cons
<ul style="list-style-type: none"><li>• Can summarise complex or multi-dimensional issues in view of supporting decision-makers</li><li>• Easier to interpret than trying to find a trend in many separate indicators</li><li>• Facilitate the task of ranking countries on complex issues in a benchmarking exercise</li><li>• Can assess progress of countries over time on complex issues</li><li>• Reduce the size of a set of indicators or include more information within the existing size limit</li><li>• Place issues of country performance and progress at the centre of the policy arena</li><li>• Facilitate communication with the general public (i.e. citizens, media, etc.) and promote accountability</li></ul>	<ul style="list-style-type: none"><li>• May send misleading policy messages if poorly constructed or misinterpreted</li><li>• May invite simplistic policy conclusions</li><li>• May be misused, e.g., to support a desired policy, if the construction process is not transparent and lacks sound statistical or conceptual principles</li><li>• Could be the target of political challenge in relation to selection of indicators and weights</li><li>• May disguise serious failings in some dimensions and increase the difficulty of identifying proper remedial action</li><li>• May lead to inappropriate policies if dimensions of performance that are difficult to measure are ignored</li></ul>

Although the pros and cons are discussed here in terms of between-country comparisons, the discussion and principles advanced throughout the OECD study can be applied to the construction of local deprivation indices.

The strongest reason against a composite local deprivation index most commonly cited in the Irish debate is that deprivation indices are not particularly helpful in devising policies at local level. Deprivation indices, by their very nature, combine several observations from a variety of domains into a single variable. This is their purpose. However, to develop effective policies to target poverty or social exclusion at local level, we typically have to revert to the original domain-level data to see what intervention may be of particular use in a particular area. It is our contention, therefore, that a deprivation index and comprehensive social and economic indicators at local level should not be seen as alternatives, but as two complementary elements in developing more effective policies to target poverty and social exclusion at local level.

This view is particularly supported through the Irish experience of area-based initiatives. One of the key findings of the evaluations of successive local development programmes<sup>6</sup> is that to overcome the ingrained poverty of particular locations requires multi-faceted responses, typically involving a multiplicity of initiatives across the social welfare, health, education, employment and environmental domains. Thus it makes perfect sense to identify the areas of need on the basis of a composite index, whilst utilising all available information in the design of appropriate policies at local level.

This view has also been put forward in a recent high-level study with respect to the Lisbon strategy and the complexity involved in communicating the strategy's objectives:

*The problem is [...] that the Lisbon strategy has become too broad to be understood as an interconnected narrative. Lisbon is about everything and thus about nothing. Everybody is responsible and thus no one. The end result of the strategy has sometimes been lost [...] An ambitious and broad reform agenda needs a clear narrative, in order to be able to communicate effectively about the need for it. So that*

<sup>6</sup> c.f. Craig and McKeown (1994); Haase *et al* (1996); Sabel (1996); Walsh *et al.* (1998); Pringle (1999); Haase and McKeown (2003)

*everybody knows why it is being done and can see the validity of the need to implement sometimes painful reforms. So that everybody knows who is responsible.*<sup>7</sup>

We believe that this quotation perfectly summarises the *raison d'être* for the construction of a composite local poverty/deprivation index. If there is, therefore, an agreement that both deprivation indices and local area data are of importance in developing effective policies to target social exclusion, it makes sense to briefly draw out some of the key differences in these two complementary approaches with regard to their purposes, basic requirements and measurements.

### Comparison of Purposes

Local Poverty/Deprivation Index	Small Area Data
<ul style="list-style-type: none"> <li>• To provide insights into the spatial distribution of poverty and deprivation</li> <li>• To provide a basis for consensus-building on targeting need in particular areas</li> <li>• To facilitate inter-temporal comparison</li> </ul>	<ul style="list-style-type: none"> <li>• To identify the specific needs of localities</li> <li>• To improve specific services or the integration of multiple services at local level</li> <li>• To inform policies that address poverty and deprivation at local level</li> </ul>

### Comparison of Requirements

Local Poverty/Deprivation Index	Small Area Data
<ul style="list-style-type: none"> <li>• Data ought to be concise (i.e. brief but comprehensive)</li> <li>• Data need to be consistent for all spatial units</li> <li>• Data need to be consistent over time</li> <li>• Data ought to be timely</li> </ul>	<ul style="list-style-type: none"> <li>• Should be more comprehensive</li> <li>• Greater emphasis on domains (to inform sectoral policies)</li> <li>• May include data that are not available for all areas</li> <li>• Do not necessarily have to be consistent over time</li> </ul>

### Comparison of Measurements

Local Poverty/Deprivation Index	Small Area Data
<ul style="list-style-type: none"> <li>• Data have to be available at identical units of analysis, e.g. Electoral Divisions (EDs)</li> <li>• Near-normal distribution of input variables</li> <li>• May require transformations</li> <li>• Requires dimensional analysis to avoid double counting</li> </ul>	<ul style="list-style-type: none"> <li>• May comprise data at different levels of spatial aggregation</li> <li>• Overall, less restrictive</li> </ul>

As is apparent from the comparisons above, the requirements with regard to the data, the distributional characteristics of the data and the way in which the data may be utilised are much more restrictive in the construction of a deprivation index than in the more general use of local data. As this study is concerned with the feasibility of developing an Irish local poverty/deprivation index, we will return to these questions in greater detail at a later stage.

<sup>7</sup> Kok (2004)

## 4.4 EU Common Indicators of Social Protection and Social Inclusion

Our fourth consideration in outlining the context for this study is the increasingly harmonised way in which the measurement of poverty and social exclusion is being addressed at European level. At the Laeken meeting in 2001, the European Council endorsed the first set of 18 common statistical indicators, which were to allow comparison of member states' progress towards agreed EU objectives in relation to poverty and social exclusion. Over the next five years, the indicators were further refined and broadened and adopted by the Council in 2006 as an integral part of the *EU Common Indicators of Social Protection and Social Inclusion*.<sup>8</sup>

The indicators that are now contained in the Social Inclusion Portfolio of the Common Indicators are largely drawn from the original set of 'Laeken indicators', and the methodological framework that was used to set up the list is also maintained in its essence, i.e. the indicators are defined in the context of a two-tier structure comprising 11 primary (headline) indicators and 3 secondary (support lead) indicators. However, the Common Indicators no longer refer to a third tier named in the Laeken indicators, which was meant to provide an explicit opportunity for individual countries to develop further indicators related to specific national concerns. The primary and secondary indicators are as follows:

### Primary Indicators:

- At-risk-of-poverty rate (60% median)
- Persistent at-risk-of-poverty rate (60% median)
- Relative median poverty risk gap
- Long-term unemployment rate
- Population living in jobless households
- Early school leavers not in education or training
- Employment gap of immigrants
- Material deprivation (to be developed)
- Housing (to be developed)
- Unmet need for care by income quintile (to be developed)
- Child well-being (to be developed)

### Secondary Indicators:

- At-risk-of-poverty rate
  - by age and gender
  - by household type
  - by work intensity
  - by most frequent (economic) activity status
  - by accommodation tenure status
  - Dispersion around the at-risk-of-poverty threshold
- Persons with low educational attainment
- Low reading literacy performance of pupils

The key definitions of interest here are the **at-risk-of-poverty rate** and the **persistent at-risk-of-poverty rate**: The former is the share of persons with an equivalised income below 60 per cent of the national median income. For comparison purposes, this rate is sometimes calculated at the 40 per cent, 50 per cent and 70 per cent income thresholds. The rate is calculated by ranking persons by equivalised income from smallest to largest and the median or middle value is extracted. Anyone with an equivalised income of less than 60 per cent of the median is considered to be *at-risk-of-poverty at a 60 per cent level*. The *persistent at-risk-of-poverty rate* additionally takes into account whether the person was at-risk-of-poverty in at least two of the preceding three years.

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<sup>8</sup> European Commission (2006)

The Common Indicators are first and foremost defined at national level and are also available at regional level (NUTS 2 and NUTS 3<sup>9</sup>). However, because the at-risk-of-poverty rate can only be derived on the basis of comprehensive sample studies (principally the EU-SILC), the indicators cannot practicably be extended to spatially more disaggregate measures of deprivation, and particularly not the local level.

Nevertheless, the agreement on the Common Indicators constitutes a milestone in the development of a political consensus about how to monitor progress in combating social exclusion and it is widely accepted that any future local poverty/deprivation index will have to be validated in some way against the Common Indicators.

## 4.5 Poverty Impact Assessment

Poverty Impact Assessment is the process by which government departments, local authorities and state agencies are required to assess policies and programmes at design, implementation and review stages in relation to the likely impact that they will have or have had on poverty and on inequalities which are likely to lead to poverty, with a view to poverty reduction. The key agency overseeing the poverty impact assessment is the Office for Social Inclusion (OSI) at the Department of Social and Family Affairs.<sup>10</sup>

At a national level, the context for measuring progress in reducing, and ideally eradicating, poverty and social exclusion is given by the *National Anti-Poverty Strategy (NAPS)*<sup>11</sup>, successive *National Action Plans for Social Inclusion (NAPinclusion)*<sup>12</sup>, the *National Strategy for Social Protection and Social Inclusion, 2006-2008 (NSSPI)*<sup>13</sup>, and the *Local Anti-Poverty Social Inclusion Strategy (LAPIS)*.<sup>14</sup> Of further importance to the actual process of impact assessment is the work of the Office for Social Inclusion (OSI) at the Department of Social and Family Affairs and that of the Combat Poverty Agency.<sup>15</sup>

The NAPS was initiated by the Irish Government after the 1995 United Nations Social Summit in Copenhagen. The strategy was launched in 1997, setting out the extent of poverty, identifying the main themes, and formulating strategic responses to combat poverty in Ireland. Since 2003, the NAPS has become synchronised with the *National Action Plan against Poverty and Social Exclusion (NAPinclusion)*, which outlines the targets Ireland has set itself in contributing to the EU objectives of making a decisive impact on the eradication of poverty and social exclusion.

A further advance in the mainstreaming of social inclusion policies across the whole spectrum of government policies has been the adoption of the *Lifecycle Approach* in the 2006-2015 Social Partnership Agreement.<sup>16</sup> Besides its importance towards improving the integration of support services across a person's life, the lifecycle approach offers the potential of a more streamlined, outcomes-focused approach to monitoring and reporting on progress within social partnership across key national strategies such as the NAPinclusion and NDP 2007-2013. The agreement states that such an approach would include 'a single reporting mechanism through an annual Social Inclusion Report to monitor and review progress at each stage of the Lifecycle in the context of this agreement, the [...] NAPinclusion and, where appropriate, social inclusion aspects of the NDP' (ibid). It is also envisaged that the next NAPinclusion would be based around the lifecycle framework.

<sup>9</sup> NUTS 2: the Border, Midland & Western (BMW) Region and the Southern & Eastern (SE) Region; NUTS 3: the eight Regional Authorities: Border, Midland, West, Dublin, Mid-East, South-East, Mid-West

<sup>10</sup> see <http://www.socialinclusion.ie/>

<sup>11</sup> Government of Ireland (1997)

<sup>12</sup> NAPinclusion 2001-2003, 2003-2005 and 2007-2016; see <http://www.socialinclusion.ie/>

<sup>13</sup> Government of Ireland (2007c)

<sup>14</sup> Combat Poverty Agency (2005a)

<sup>15</sup> Combat Poverty Agency (2005b)

<sup>16</sup> see *Towards 2016* at <http://www.taoiseach.gov.ie/>

The key NAPinclusion indicator derived from the *EU Survey of Income and Living Conditions* (EU-SILC) is the ‘consistent poverty measure’, which combines the at-risk-of-poverty rate with a lack of what are considered to be basic resources.

## Consistent Poverty

The consistent poverty measure looks at those persons who are defined as being at-risk-of-poverty and assesses the extent to which this group may be excluded and marginalised from participating in (consumption) activities that are considered the norm for other people in society. The identification of the marginalised or deprived is achieved on the basis of a set of eleven basic deprivation indicators outlined here in terms of their opposites:

- Have two pairs of strong shoes
- Have a warm, waterproof overcoat
- Buy new not second-hand clothes
- Eat meals with meat, chicken, fish (or vegetarian equivalent) every second day
- Have a roast joint or its equivalent once a week
- Did not have to go without heating during the last year through lack of money
- Keep the home adequately warm
- Buy presents for family or friends at least once a year
- Replace any worn-out furniture
- Have family or friends for a drink or meal once a month
- Had a morning, afternoon or evening out in the past fortnight, for entertainment

It should be noted that this eleven item list of basic deprivation indicators is applicable from 2007. The original list of eight indicators was used from 1987 until 2006. The ESRI revised the list to better reflect living standards and to focus to a greater degree on items reflecting social inclusion and participation in society.

Individuals are regarded as being in ‘consistent poverty’ if (i) their income is below 60 per cent of median income and (ii) they experience deprivation in relation to two or more items of the above list of eleven deprivation items.<sup>17</sup>

As is the case with the Common EU Indicators for Social Inclusion in general, the two central Irish poverty measures are only available at national and regional levels, but cannot be computed at the local level.

## Spatial Poverty Impact Assessment

To date, spatial poverty impact assessment in Ireland, at least in the context of the NAPS and NAPinclusion, has remained in its infancy. The study *Monitoring Progress on Poverty* (Palmer and Rahman, 2002), spelled out how the European (Laeken) indicators could be operationalised in Ireland. However, the measurement of poverty at the local level was not systematically considered as part of this study, at least not beyond the urban-rural dichotomy. Nevertheless, the study, published by the Combat Poverty Agency, put down an interesting marker on the measurement of rural poverty, where it highlighted the different nature of rural poverty and the potential importance of indicators related to access to services and isolation, including access to public transport.

The most comprehensive study published by the Combat Poverty Agency on the spatial aspects of poverty remains *Mapping Poverty* (Watson *et al.*, 2005). This study makes extensive use of data from the *National Survey of Housing Quality 2001/2002*, which provided on a once-off basis an exceptionally large sample base to compute the at-risk-of-poverty and

<sup>17</sup> Note that it is enforced deprivation that is relevant in this context. For example, a household may not have a roast once a week. The household is classified as deprived on this basic indicator only if the reason they didn’t have it was because they could not afford it

consistent poverty rates at the level of local authority areas.<sup>18</sup> In the foreword to this study, Combat Poverty states: *‘Geographical analysis of poverty remains underdeveloped. A key constraint is the lack of poverty-specific data on a spatially disaggregated basis... The Census of Population, though inclusive of all households, has acute drawbacks in regard to the measurement of poverty and the spatial unit of analysis. The Department of the Environment, Heritage and Local Government recently issued a consultation paper on spatial data infrastructure. Various avenues should be explored to gather specific data on poverty at the local level, including the Census of Population’*

The Combat Poverty Agency has since engaged in a number of initiatives to improve its capacity for spatial poverty impact assessment. The commissioning of this feasibility study comprises one element in this undertaking.

#### **4.6 The Irish Spatial Data Initiative (ISDI)**

Unfortunately, the only national data source currently available in Ireland to provide local (Electoral Division based) statistics is the Census of Population. This situation is unlikely to change in the short term. There are, however, two important developments with regard to the longer term. The first is the establishment of a cross-departmental working group under *The National Spatial Strategy*, the *Irish Spatial Data Infrastructure (ISDI) Working Group*.<sup>19</sup> The ISDI is headed jointly by the Central Statistics Office (CSO) and the Ordnance Survey of Ireland (OS) and the principal aim of the group is to enhance the data infrastructure for local data in Ireland. The second development is the issuing of an EU Directive, INSPIRE, which aims to provide a framework for the improvement of geographically tagged data throughout all European countries. We deal with the EU directive in Section 4.7.

The ISDI Working Group set out to address the following: firstly, to develop a new Small Area data infrastructure and, secondly, to prepare the ground for various government departments to develop the ability and willingness to provide aggregate data from their administrative databases at the level of these new Small Areas. This development parallels work by the National Statistics Board, through its Steering Group on Social and Equality Statistics (SGSES), on the potential use of administrative data for social inclusion and wider policy initiatives.<sup>20</sup>

#### **Defining a New Small Area Geography**

Historically, data relating to small area geography have come from the Census of Population and have been published in the form of Small Area Population Statistics (SAPS). The need for a revision of the current geography of the SAPS arises from the uneven populations that are represented in each of the 3,444 Electoral Divisions (EDs) at which the SAPS data have been published over the past few decades. On the one hand, keeping EDs constant in their boundary definitions has had the advantage of providing easy comparability across successive census waves. Apart from minor revisions, EDs have remained unaltered for over twenty years. The downside of such rigour is that Ireland’s increasing urbanisation and rapidly changing settlement patterns has led to a situation where some rural EDs represent less than 50 persons, whilst the most heavily populated ED (Blanchardstown-Blakestown) recorded over 32,000 persons in the 2006 Census. As many social indicators, such as the unemployment rate or the proportion of adults with primary education, are typically expressed as ratios, these can have very different meanings if the population base is spread over such an extraordinarily wide range.

One of the key aims of the ISDI Working Group is to develop a new Small Area (SA) geography, below the level of current EDs. The approach adopted by the Working Group

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<sup>18</sup> ESRI and Department of the Environment, Heritage and Local Government (2002) National Survey of Housing Quality.

<sup>19</sup> see <http://www.irishspatialstrategy.ie/isdi/>

<sup>20</sup> National Statistics Board (2003a)

closely mirrors similar developments throughout the UK, where a new census geography consisting of homogenised Census Output Areas (COAs) and Super Output Areas (SOAs) has been created in advance of the publication of the 2001 UK and NI Census results. In Ireland, the CSO has set 65 households as the minimum population to guarantee confidentiality, and it is expected that the average number of households within each area will be approximately 130. In addition, the areas will be constructed in such a way that they maximise homogeneity within each area whilst maximising differences between them. This has been an important issue in the past, where frequently a relatively affluent area might be nestled within a less affluent surrounding, or *vice versa*.

To date, the Working Group, with the help of the National Centre for Geocomputation (NCG) at NUI Maynooth, has developed a formula by which to define the new Small Areas. This was first tested within the sub-divisions of two Electoral Divisions (Maynooth and Leixlip) and a proof of concept study was subsequently undertaken across nine EDs, ranging from extreme urban to extreme rural.<sup>21</sup> The CSO and the Ordnance Survey have recently commissioned the NCG to define the new Small Area geography for the whole of Ireland, and the CSO is committed in principle to publish the SAPS at this level from the 2011 Census of Population onwards. In addition, some data of the 2006 Census may be made available at this level retrospectively, once the new areas are fully defined.

### **Preparing Departmental Readiness**

The second aim of the ISDI Working Group is to assist all major Government departments in developing a common platform for the sharing of information at the highest possible level of spatial disaggregation.<sup>22</sup>

Amongst a number of government departments and state agencies there is growing awareness of the need for the improved provision and sharing of local data. Besides the CSO and the Ordnance Survey, other lead departments and agencies include the Office of Social Inclusion (OSI), the Department of Social and Family Affairs and the Department of the Environment, Heritage and Local Government, as well as a number of local authorities, notably in Fingal, Clare and Limerick City. The following areas would immediately benefit from the sharing of local data:

#### ***Social Welfare***

- Mapping and monitoring of payments, evaluation of benefit diffusion, monitoring policy implementation, links to medical card holding data

#### ***Health***

- Public health modelling, medical card holdings, hospital catchment profiles, accessibility and utilisation mapping, links to social/educational data

#### ***Education***

- Service need planning in new suburbs, school population forecasting, special needs (overlaps with health and social welfare)

#### ***Employment***

- Spatial distribution of employment and investment incentives

#### ***Environment and Local Authorities***

- Local profiling for planning purposes, places-at-risk modelling, impact assessments

#### ***Agencies and NGOs***

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<sup>21</sup> Fotheringham and Charlton (2005)

<sup>22</sup> Ronan Foley *et al.* (2005)

- Working with statutory and other voluntary sector agencies utilising the same datasets, e.g. Area Partnerships and other area-based initiatives.

**Figure 3.1 Example from Small Area Study – Medical Card Holdings**

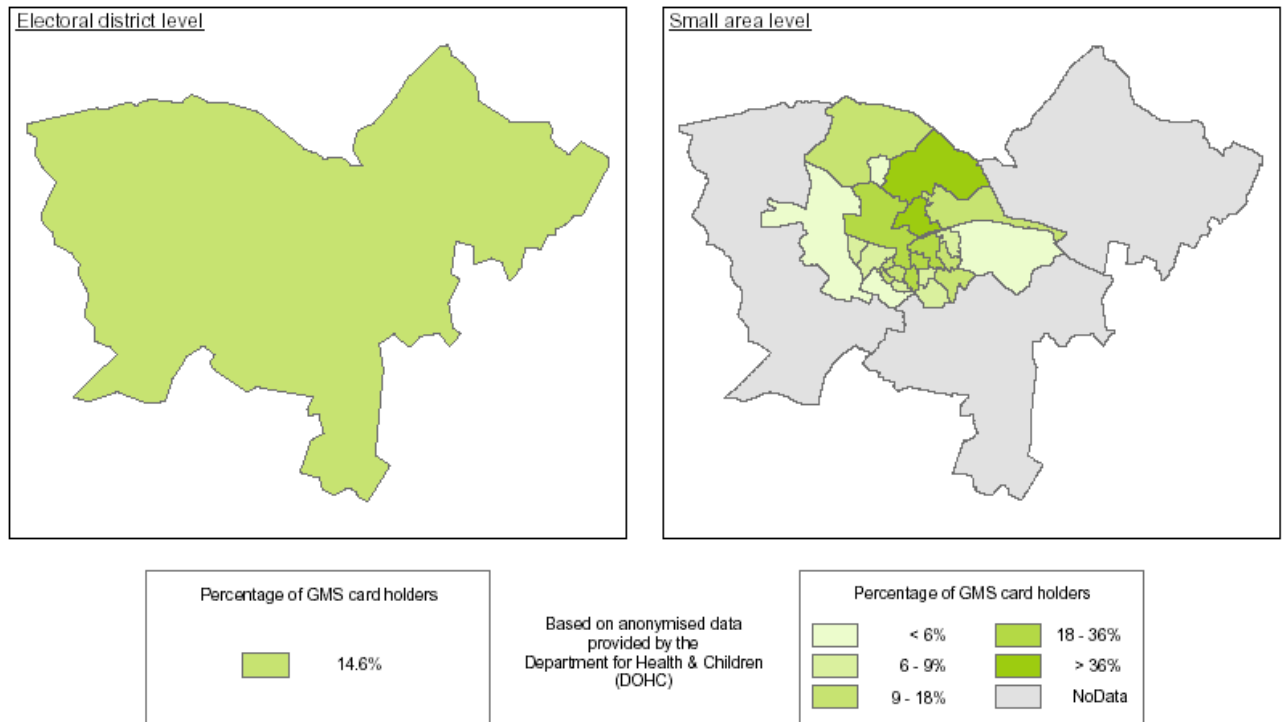


Figure 3.1 provides an illustration from the ISDI Small Areas Project, showing the proportion of Medical Card holders as a proportion of the adult population in Maynooth. The map on the left shows the distribution as a single data point for the whole Maynooth ED. The map on the right shows the differentiation that becomes possible when showing the same data at the level of the new Small Areas.

The communality between the relevance of improved data provision and sharing between the various Government departments and state agencies on the one hand, and the data and information needs for the spatial poverty impact assessment on the other are self-evident. If advances can be made towards a common platform of providing and sharing local data, it will greatly enhance the possibilities in poverty impact assessment for national and local government policies in combating social exclusion.

#### 4.7 A New EU Directive: INSPIRE<sup>23</sup>

Our final consideration of the context in which this study is taking place is the issue of the EU INSPIRE directive. The fundamental aim of INSPIRE is to make available relevant, harmonised and quality geographic information for the purpose of formulating, implementing, monitoring and evaluating Community policy-making.

The principles underlying the initiative are summarised and reflected in the recent policy paper of Fingal County Council on data sharing:<sup>24</sup>

- Data should be collected once and maintained at the level where this can be done most effectively.
- It should be possible to combine seamlessly spatial data from different sources and share them between many users and applications.
- Spatial data should be collected at one level of government and shared between all levels.

<sup>23</sup> see <http://inspire.jrc.it/>

<sup>24</sup> Fingal County Council (2007)



- Spatial data needed for good governance should be available on conditions that are not restricting their extensive use.

INSPIRE raises at a higher level the principal issues that need to be addressed, and which are at the centre of the objectives of the ISDI Working Group. These issues are now given new impetus as they have become the subject of an EU directive which is mandatory to all EU membership countries and to be implemented by 2014 at the latest. The questions effectively raised by the directive and that need to be addressed are as follows: data ownership, data privacy and confidentiality, data access, data interpretation, database formats, multiple agency, and governance. We briefly outline each of these issues.

### **Data Ownership**

As information technology has evolved over the past two decades, all government departments and state agencies hold vast computerised databases as the core element of their administrative record keeping. This makes it possible to share data across different government departments, state agencies, voluntary organisations and the wider public. However, the ownership of the data must clearly be recognised and protected in any such move.

### **Data Privacy and Confidentiality**

Both in Ireland and the EU in general, there are strict rules about data confidentiality. A department or agency that collects data from an individual is not allowed to pass on this information to a third party without the explicit consent of the individual involved.

At no point is it intended that individual level data will ever be passed on to a third party; this would be illegal. The question, however, that arises is, at what level of spatial aggregation is the confidentiality of the individual sufficiently protected? This becomes particularly relevant where the information of multiple data sources may be combined, as it must never be possible to impute any knowledge about any individual in such a process.

### **Data Access**

The crucial question is, at what level may another party be allowed access to pre-aggregated data? There may be several levels of data aggregation and, in principle, the higher the level, the more protected is the individual. There also arises a question as to what level a department or agency may want to disclose its own data, as this allows third parties to analyse the data and potentially comment upon it.

### **Data Interpretation**

The manner in which administrative data may be interpreted after their release is an acknowledged and understandable concern for data holders. While such concerns are valid, there is a recognition that the act of data sharing is in part an act of faith, and it is useful to note that, for the first time, the CSO has made the 2006 SAPS data freely available to the general public. This is done on the proviso that all data are accompanied by (a) metadata on their derivation and (b) caveats identifying them as raw data, the interpretation of which is not the responsibility of the CSO. If an agreed set of protocols for data sharing incorporated an agreed listing of caveats and metadata, deliberate misinterpretation by an end user is never the responsibility of the data provider.

### **Database Formats**

At the moment there exist considerable difficulties in providing local area aggregations of administrative databases. Besides questions of system compatibility, the reason for this arises

primarily out of the non-existence of postcodes in Ireland and hence the difficulty in translating address-based individual level records into a spatial reference system.<sup>25</sup> Anyone who has ever tried to merge address records from multiple sources knows the difficulties involved if each department, agency or section thereof uses different formats in terms of the number of address fields, the length of individual fields etc. A first step in moving towards greater data sharing is the agreement upon a common database format across all participating data holders.

## **Multiple Agency**

The Statistical Potential of Administrative Records (SPAR) reports identified fully the potential of administrative data and with it the commonalities of that data across a range of different government departments and agencies (Central Statistics Office, 2003). While multiple agency is undoubtedly an issue in terms of agreed forms of access, templates and database design, there are also genuine opportunities to make data sharing more efficient and effective through the agreement of such templates and formats. Areas for discussion might include common identifiers, common address aggregations and other data linkages within different datasets. Though there would be thorough legal scrutiny of such processes, there would also be the advantage that if this is done once and effectively, then there is no need to repeat the process for every dataset, especially if there are regular quarterly or annual releases of data from a variety of sources.

## **Governance**

It would be naïve of any data-sharing initiative to ignore the governance and ownership issues associated with persuading data holders to release data on an ongoing basis. It is generally agreed that data confer power and data holders may be persuaded of the value of data sharing through a set of carrot and stick approaches. The stick approach will in part be driven by the EU's INSPIRE initiative as well as from buy-in by senior managers at both national and local government levels. The carrot approach could involve the more effective measurement and monitoring of policy, the ability to gain access to other data as a by-product of one's own agency's data release and a reduction in ad-hoc demands for data, saving staff time and resources.

Having discussed in some detail the multiplicity of developments that are currently taking place and that have an impact on the prospective development of a local poverty/deprivation index for Ireland at the present time, we now consider the conceptual issues that are involved in the construction of such an index.

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<sup>25</sup> Note: There are separate considerations ongoing with respect to the introduction of postcodes in Ireland. We have decided not to include these in the discussions here, as the considerations around data sharing are essentially independent from such considerations. Nevertheless, if postcodes were to be introduced, this would obviously greatly facilitate the transformation of address-based data into small area data.

## 5 The Construction of a Local Poverty/Deprivation Index

All too often, when it comes to the construction of a new deprivation index, a data-driven approach is adopted, taking all available data and combining them in relatively automatic fashion. Subsequently, discussions tend to focus on which variables to include, which again is driven largely by availability, with little reference to the theoretical motivation for including particular information and even less discussion about the actual construction of the index.

This trend towards a data-driven approach to index construction is likely to be reinforced by the growing quantity of data available. For example, Departments that make local data available are likely to push for inclusion in official deprivation indices. Moreover, as users of these indices frequently call for the adoption of transparent and easily understood techniques, the result can be a weakening of the theoretical scaffolding and a dilution of the methodological sophistication underlying index construction. In this chapter we explore this issue, particularly in relation to the current UK Multiple Deprivation Measures (MDM)<sup>26</sup> which have attracted much interest internationally, as well as other prominent indices. We begin our discussion, however, by introducing some theoretical concepts that lie at the core of current debates about index construction and data availability.

In the previous chapter, we distinguished between the purpose of deprivation indices and the need for greater availability of local data in general. We believe that there is no overwhelming reason to utilise all available data during the construction of a deprivation index. A deprivation index should, at the outset, be conceptualised in a way that represents the different factors or dimensions that affect poverty and deprivation outcomes, and data should subsequently be marshalled to meet the resulting requirements. Instead of engaging in futile discussions about whether a given indicator or variable should be included or not, statistical methods should be employed to test whether or not this variable improves the measurement of a theoretically-founded dimension.

In the initial sections of the chapter, we look at prevailing definitions of poverty, deprivation and social exclusion. This is followed by a discussion of conceptual issues in relation to the scope or extension of deprivation indices. We then review two different indices in their current form, the *Index of Relative Affluence and Deprivation* (Haase and Pratschke, 2005a) for the Republic of Ireland and the *Multiple Deprivation Measure* (Noble *et al.*, 2001) for Northern Ireland, whilst also making some additional remarks on other international indices. We compare these indices and evaluate their significance for the construction of deprivation indices in Ireland in the future. This is followed by an evaluation of the data requirements of a new index and a review of current data availability.

### 5.1 Defining Poverty, Deprivation and Social Exclusion

Poverty, deprivation and social exclusion are closely interrelated concepts which are often treated interchangeably. This section considers a range of different definitions of these concepts and examines some of the challenges associated with their measurement and consequently with the development of this field of applied social research.

Most research on deprivation starts with the definition provided by Townsend (1979, 1993) which highlights the *relative* character of this concept by comparing how people experience their lives relative to the community they live in:

*People are relatively deprived if they cannot obtain, at all or sufficiently, the conditions of life – that is, the diets, amenities, standards and services – which allow them to play*

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<sup>26</sup> ODFPM UK (2004)

*the roles, participate in the relationships and follow the customary behaviour which is expected of them by virtue of their membership of society. (Townsend, 1993: 36)*

This view is closely mirrored by Coombes *et al.* (1995) who state:

*The fundamental implication of the term deprivation is of an absence – of essential or desirable attributes, possessions and opportunities which are considered no more than the minimum by that society. (Coombes et al., 1995: 5)*

For many, deprivation is closely associated with poverty. Townsend, for example, sees poverty (or the lack of financial resources) as the major cause of deprivation:

*[People may be said to be in poverty] if they lack or are denied resources to obtain access to these conditions of life and so fulfil membership of society. (Townsend, 1993: 36)*

This approach is also central to the Irish National Anti-Poverty Strategy (NAPS), which states:

*People are living in poverty if their income and resources (material, cultural and social) are so inadequate as to preclude them from having a standard of living which is regarded as acceptable by Irish society generally. As a result of inadequate income and resources, people may be excluded and marginalised from participating in activities which are considered the norm for other people in society. (Government of Ireland, 1997; Combat Poverty Agency, 2004)*

This definition continues to be valid and underpins the Irish Government's strategic response to tackling poverty and social exclusion as set out in the *National Action Plan for Social Inclusion* (NAPinclusion), (Government of Ireland, 2007b).

While income poverty is undoubtedly an essential element of deprivation, an exclusive reliance on income poverty as a measure of deprivation is nevertheless problematic, for the following reasons:

- (i) It does not consider broader aspects of quality of life, such as, for example, health, the environment, access to transport and services and general life opportunities.
- (ii) It assumes that the only possible unit of analysis is the individual.
- (iii) It assumes that deprivation should be measured in terms of outcomes as opposed to risks or conditions.
- (iv) It narrows the focus of policy-making approaches.

Since the social policy debates of the 1980s, these wider issues have been increasingly grouped together under the term 'social exclusion'.

*The concept of social exclusion seems originally to have been proposed by social theorists as a portmanteau term to describe the co-existence and co-development of a number of social problems (such as unemployment, poor educational attainment, poor housing, poor health, low uptake of social service provision, failure to participate in political processes, etc.) associated with the fragmentation of traditional social structures and relations, the decline in participation in the normal institutions and processes of society and the growth of deprivation amongst particular social groups. These problems were seen as being related to one another and related to, though not completely explained by, traditional notions of relative or absolute poverty. (MacDonald, 2003)*

In summary, traditional measures of poverty have focused principally on the lack of material wealth and its consequences (Townsend, 1979, 1993), whilst the concept of social exclusion is

seen as emphasising the importance of a wider set of inter-related social factors. The subject of this study – how to measure spatial deprivation – is clearly related to this wider concept.

## 5.2 Conceptual Issues

In this section we discuss four conceptual questions: (i) is the appropriate unit of analysis in the construction of a spatial deprivation index the individual, the household, the social groups or the community? (ii) who is deprived, people or places? (iii) is it possible to distinguish between ‘material’ or ‘at-risk’ factors of deprivation? (iv) is it possible to derive an inclusive definition of deprivation?

### 5.2.1 The Appropriate Unit of Analysis

Much of the debate about poverty and social exclusion over the past two decades has been characterised by an approach that focuses on the individual. This not only includes the development of appropriate transfer mechanisms in the tax and social welfare systems, but extends to the emphasis on counting individual ‘throughputs’ to demonstrate the effectiveness of area-based initiatives and an emphasis on ‘counting the poor’ in the construction of spatially-based deprivation indices. The argument is that if one can predict the number of people experiencing deprivation in any given area, then one can direct the necessary resources to people in these areas and thus minimise or reduce deprivation. Indeed, methodological changes in recent deprivation indices in the United Kingdom have been largely aimed at providing more and more precise estimates of the number of poor people residing in each location<sup>27</sup>.

Doubts have begun to be expressed more recently about the value of this concern with ‘counting the poor’. Most observers agree that the majority of poor people do not live in designated disadvantaged areas, and deprivation indices must thus be considered an inefficient means of targeting the poor *per se*. It follows that the most important mechanism for targeting the poor (as individuals) is the tax and social welfare system. Local area-based initiatives should then be viewed as complementary interventions. There is a growing recognition that local area-based initiatives might be better suited to enhancing the social infrastructure and services available to particular communities, rather than representing a tool for targeting poor individuals.

### 5.2.2 Who is deprived?

The second issue relates to the subject of deprivation indices. Indeed, the question of whether deprivation is experienced by individuals, groups or communities is a difficult one. The dominant view amongst social scientists<sup>28</sup> is that only individuals can be described as being deprived and that the individual is the only appropriate subject of deprivation measures and the only possible object of public interventions. This view does not, however, take into account the fact that an individual’s experience is also shaped by (i) household factors and (ii) wider neighbourhood influences (e.g. broader aspects of the social environment).

There is a growing body of international research dealing with the influence of neighbourhood and other contextual characteristics on individuals. This research has shown that characteristics which are shared by groups of individuals (e.g. in particular schools, neighbourhoods, communities, etc.) have an impact on their well-being, over and above what might be predicted from their socio-economic characteristics alone. The size of neighbourhood effects varies, but they are typically significant both in substantive and statistical terms. They also shed light on the question of why, after years of tackling social exclusion through

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<sup>27</sup> This trend may be identified within a series of successive UK deprivation indices, starting with the 1981 DoE Index, following through the 1991 Robson Index and within the current Multiple Deprivation Measures (2001).

<sup>28</sup> c.f. Robson *et al.* (1995), Burchardt *et al.* (2002), Noble *et al.* (2000, 2001)

individually-targeted responses, certain communities continue to experience substantial levels of deprivation.

Madanipour (1998) proposes a definition of social exclusion that emphasises the notion of socially-excluded neighbourhoods:

*[Social exclusion is] a multi-dimensional process, in which various forms of exclusion are combined: participation in decision-making and political processes, access to employment and material resources, and integration into common cultural processes. When combined, they create acute forms of exclusion that find a spatial manifestation in particular neighbourhoods. (Madanipour et al., 1998:80)*

The relationship between spatial location and social exclusion is clearly highly complex (Power and Wilson, 2000). Not only is there a tendency for social exclusion to be clustered spatially, but the properties of location and accessibility are of fundamental importance in determining the ability of individuals to participate in existing social institutions and processes (MacDonald, 2003).

Furthermore, even if one was to assume that, ultimately, any form of deprivation has to be experienced by a person, it does not automatically follow that the measurement of every form of deprivation necessarily rests at the level of the individual. If we take, for example, the concepts of social capital or the 'brain drain' – and hence loss in social capital – due to prolonged outmigration from an area, it may prove extremely difficult to measure these through the experience of the people still residing in the area. It would, however, be relatively easy to gain some measure of the prospective loss at the aggregate area level.

### 5.2.3 Actually or potentially deprived?

The third question, closely linked to the previous one, relates to whether it is correct to consider only those who are 'actually' deprived or whether definitions of disadvantage can include consideration of those 'at risk' of deprivation. Most commentators emphasise outcomes, conceptualised in terms of specific individual experiences or attributes. However, as Coombes *et al.* (1995) note, this may not be sufficient if we wish to understand the nature of deprivation:

*Individuals who are poor are also more likely to live in unsatisfactory housing conditions and to suffer health problems, thereby endangering their employment status and thus reinforcing their poverty. In this way, each outcome is also a condition which makes the sufferer more vulnerable to other aspects of deprivation... The tendency for individuals to thus experience more than one form of deprivation has been simplified in the term multiple deprivation. (Coombes et al., 1995: 7)*

A similar view is taken by Cook *et al.* (2000), who argue that in order to reflect the cyclical nature of deprivation both outcome and 'at risk' measures of deprivation should be included in indices of overall deprivation. To this end, they include two types of indicators: the first considers groups of people thought to be 'at risk' of poverty (e.g. the unemployed); the second looks at outcome measures, such as housing tenure, car ownership etc. which indirectly measure the extent of deprivation.<sup>29</sup>

Haase and Pratschke (2005a) question the validity of distinguishing between measures of outcomes and risks in the context of the spatial analysis of deprivation. They point out that in the context of spatial analysis all indicators are probabilistic in nature:

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<sup>29</sup> The arbitrariness of the distinction between risks of poverty and poverty outcomes is further illustrated by the fact that some commentators treat the unemployment rate as a poverty outcome indicator (e.g. SAHRU 1997, NISRA 2005), while others treat the same variable as an indicator of risk of poverty (Cook *et al.* 2000, Haase and Pratschke 2005a).

*We know that unemployed people are more likely to be poor; therefore we also know that areas with high unemployment rates will, all other things being equal, tend to have a larger number of poor people residing within them. However, we do not include the unemployment rate in our index as an estimate of the number of poor people residing in a given area; what matters is that, at the spatial level, living in an area with a higher unemployment rate increases the likelihood that any given individual or family will be disadvantaged.’ (Haase and Pratschke, 2005:45)*

#### **5.2.4 An Inclusive Definition of, and Approach to, Deprivation**

In summary, definitions of and approaches to deprivation must go beyond considerations of income poverty and the individual level of analysis. They must include a comparison of the experiences of individuals, households, groups and communities against prevailing social norms. They must reflect the fact that socio-economic context has an impact on quality of life and that neighbourhood effects have an impact on related social processes. Finally, as it becomes increasingly clear that deprivation indices are limited in their use for targeting poor individuals, but derive their chief rationale from their ability to inform initiatives aimed at the level of communities, they should not focus exclusively on individual-level poverty outcomes, but must aim towards a broader definition of social exclusion in terms of ‘risks’.

It is interesting to note that the (UK) Social Exclusion Unit recently refined its official definition of social exclusion in order to place greater emphasis on the dynamic and cumulative effects of deprivation and the lack of full participation in society:

*The term ‘social exclusion’ refers to more than poverty or low income, but it is closely related to them. It is used to describe a number of linked problems such as unemployment, poor educational achievement, low incomes, poor housing, physical barriers and bad health which tend to have a cumulative and reinforcing effect on each other, preventing people from fully participating in society. (Social Exclusion Unit, 2002).*

And in a similar fashion, the European Commission (1997) has defined social exclusion as:  
*... an accumulation and combination of several types of deprivation which go beyond poverty to social exclusion: lack of education, deteriorating health conditions, homelessness, loss of family support, non-participation in the regular life of society, and lack of job opportunities.*

### **5.3 Measuring Deprivation**

This section contains an examination of how poverty, deprivation and social exclusion are actually measured and the various (spatial) levels at which different measures of deprivation operate.

#### **5.3.1 Measuring Disadvantage at the National Level**

Developments in the measurement of poverty and deprivation in Ireland have closely followed the increasingly co-ordinated approach across the EU. The work of the Combat Poverty Agency, the Office for Social Inclusion (OSI), and the Economic and Social Research Institute (ESRI)<sup>30</sup>, reflects this movement as well as having contributed to it. Until 2001, estimates for the number of people living in poverty in Ireland were derived from the *Living in Ireland Survey* (ESRI). In 2003, this survey was replaced by the *European Survey on Income and Living Conditions* (EU-SILC), which is now conducted annually by the Central Statistics Office (CSO). The key findings are published annually through the CSO and are also contained in the Social Inclusion Report of the Office for Social Inclusion.

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<sup>30</sup> c.f. Nolan et al. (2002) *Monitoring Poverty Trends in Ireland: Results from the 2000 Living in Ireland Survey*.

## The 'At-risk-of-poverty' and 'Consistent Poverty' Rates

The NAPS and NAPinclusion distinguish between two types of poverty: income poverty and consistent poverty. Whether people are living in **income poverty** is determined by comparing their income to a particular income threshold. If they are below this threshold, they are deemed to be experiencing poverty. Generally, the threshold is set at 60 per cent of median income, although the threshold can also be set at 50 per cent or 70 per cent of median income.

*The standard threshold adopted by the European Union is below 60% of median income. Median income is the middle point of the income distribution, i.e. the middle point if all incomes were lined up, from the lowest income to the highest income. (Combat Poverty Agency, 2004)*

**Consistent poverty** is then measured as a combination of being income poor and lacking essential household items.

*A person is said to be in consistent poverty when he or she has both a low income and lacks at least one of a number of specified basic necessities such as warm clothes, adequate food and heating. (Combat Poverty Agency, 2004)*

From 2007 onwards, a new definition of consistent poverty will apply, whereby a person is regarded as poor if he or she is income poor and lacking at least two out of an extended basket of eleven essential items.

## Measuring Social Exclusion

Social exclusion is defined by Combat Poverty in terms of being denied opportunities considered societal norms:

*[Social exclusion] is the process whereby certain groups are shut out from society and prevented from participating fully by virtue of their poverty, discrimination, inadequate education or lifeskills. This distances them from job, income and education opportunities as well as social and community networks and they have little access to power and decision-making bodies. (Combat Poverty Agency, 2004)*

In terms of operationalising the measurement of social exclusion, the European Council endorsed the first set of common statistical indicators at the Laeken Conference in 2001, and these have since been further developed into the EU Common Indicators of Social Protection and Social Inclusion (see Section 3.4). For Ireland, the indicators have been set out as part of the monitoring environment for the NAPinclusion and the National Report on Strategies for Social Protection and Social Inclusion (NSSPSI). They include the consistent and at-risk-of-poverty rates to be broken down by gender, age, and household type, to persistent poverty, to activity status, work intensity, long-term unemployment, jobless households, early school leavers, low literacy levels and low educational attainment.

The monitoring and evaluation of the implementation of the NAPinclusion and NSSPSI are coordinated by the Office for Social Inclusion (OSI), and the OSI has been given a strengthened role towards this end under *Towards 2016*. The primary source of information for the monitoring of both programmes is the EU-SILC and the emphasis is altogether set on meeting national targets. The NAPinclusion does, however, dedicate one of its chapters to the well-being of communities. It is in this context that we believe a local poverty/deprivation index to be of particular relevance in the effective monitoring of progress.

*The overall aim of the NAPinclusion is to build viable and sustainable communities, improving the lives of people living in disadvantaged areas and building social capital. Therefore, tackling disadvantage in urban and rural areas remains a key priority. Urban poverty can take a number of forms – poor households living in urban areas, urban*



*communities where there are high levels of unemployment and high concentrations of poverty and areas suffering from a decline in the environmental and social infrastructure. Similarly rural disadvantage can manifest itself in a number of ways. Declining or slow-growing populations, migration of younger people from rural to urban areas, lack of services, lack of employment opportunities, low income farming households, higher dependency levels and isolation are examples. Whether in the urban or rural context, social exclusion is frequently the result of multiple disadvantage. (Government of Ireland, 2007b)*

## 5.4 Measuring Spatial Disadvantage

The preceding discussion of the measurement of poverty, deprivation and social exclusion has focused on the national level and the use of sample surveys. However, the question arises as to the extent to which an approach based on sample surveys can be extended to the regional and local levels. Furthermore, questions must be asked about whether measurements which are based on individual-level concepts of poverty and deprivation can be transferred to the measurement of poverty at the spatial level.

A good overview of the issues that must be addressed in deriving regional indicators of social exclusion and poverty is contained in a background study undertaken by the University of Sienna for the European Commission.<sup>31</sup> The study set out to address a number of issues or challenges:

- (1) Identifying special features and requirements of the system of indicators of poverty and social exclusion for use at the regional level
- (2) Choosing appropriate units of analysis
- (3) Describing a practical strategy for measuring poverty and social exclusion at the regional level
- (4) Illustrating the recommended strategy concretely, with necessary technical detail on the basis of real statistical data
- (5) Constructing income poverty-related indicators appropriate for the regional level
- (6) Incorporating non-monetary dimensions of deprivation to complement indicators of income poverty
- (7) Extending indicators normally produced at the national level to the level of regions – initially at NUTS 2 level, then NUTS 3 and even beyond.

Unfortunately, the study did not involve itself in a discussion of the conceptual issues of how poverty and deprivation should be measured at the spatial level and whether measures of individually experienced poverty can readily be used at a spatial level. Instead, the authors take as their point of departure the methodological framework used for defining the indicators of poverty and social exclusion endorsed at Laeken (i.e. those reflected in the definitions outlined above) and posed the question as to what extent these indicators can be applied at various spatial levels, using either EU-wide or national data sources.

### From NUTS 1 to NUTS 2, NUTS 3 and beyond

The most interesting findings of the study can be summarised under two headings: Firstly, it concludes that 'ordinary poverty rates' can only be produced at NUTS 1 and NUTS 2 levels with any degree of precision<sup>32</sup>. The surveys currently available (Household Budget Survey

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<sup>31</sup> European Commission (2005b)

<sup>32</sup> The regional classifications are based on the NUTS (Nomenclature of Territorial Units) classification used by Eurostat.

For Ireland, the following classification applies:

NUTS 1 covers the whole of the Republic of Ireland

NUTS 2 describes the Border, Midland and Western (BMW) Region and the Southern and Eastern (SE) Region

NUTS 3 describes Ireland as the eight Regional Authorities: Border, Midland, West, Dublin, Mid-East, South-East, Mid-West and South-West

(HBS), European Community Household Panel (ECHP) and subsequently EU-SILC) have sample sizes that are too small to provide useful information for estimation at a more local level, even after consolidation of the data over a number of years. The computation of 'ordinary poverty rates' at NUTS 3 level depends, initially, on whether survey data are coded at this level. In Ireland, 'ordinary poverty rates' are computed annually at NUTS 3 level (i.e. for the eight Regional Authorities as established from 1994 onwards) and are available from the CSO on request. A detailed analysis of NUTS 4 level poverty rates is provided by Watson *et al.* (2005), using the 2001/2002 National Survey of Housing Conditions, but this study was undertaken on a once-off basis.

Secondly, the University of Sienna study finds that the production of estimates at NUTS 4 and particularly NUTS 5 levels cannot be done on the basis of sample surveys, but requires econometric models. In general terms, these models involve imputing the required dependent variables – such as poverty measures – to areas or to individual households in a large data set such as a population census, essentially using a regression model fitted from a small-scale survey (containing common co-variates and the required dependent variables).

### **Appropriate Units of Analysis**

As pointed out, the Sienna study confines itself from the outset to the operationalisation of what it calls the estimation of 'ordinary poverty rates' and only hints in a cursory note at the problematic nature of using simple aggregations of individual-level values as area indicators:

*An important question is the extent to which regional deprivation can be defined as a self-contained concept, different from individual deprivation. The important addition to the set of Laeken indicators would be the incorporation of indicators defined and measured at the area level in order to identify, as it were, the 'territorial reality' of the region. These indicators are not necessarily simple aggregations of individual level values. It is this sort of indicators which underpin area-based policies that have become a common part of some governments' approach to tackling social exclusion. (European Commission, 2003: 15)*

Unfortunately, there is a danger that the debate about the appropriate conceptual basis of spatial deprivation indices might be more concerned with the operationalisation of the estimation of 'ordinary poverty rates' at greater levels of spatial disaggregation, rather than discussing the basis of the concepts, and particularly their over-reliance on individual measures of (income) poverty.

### **Measuring Rural Deprivation**

One of the areas in which the conceptual basis of measuring spatial deprivation has become particularly pertinent is with regard to the appropriate conceptualisation of its rural form. Indeed, the EU has recently commissioned a major study on the measurement of poverty and social exclusion in rural areas (Invitation to Tender VT/2006/001), indicating that there are at least some concerns at EU level about the appropriateness of poverty indicators predominantly based on the use of income measures. The Terms of Reference for the EU study give some indication of the questions raised:

*The study will describe and assess the phenomenon of poverty and social exclusion in the EU's rural areas, clearly indicating the operational concept of rural areas that is used; then assessing the structural factors, particularly the socio-demographic characteristics of the resident population, out-migration, the sectors of economic activity, the degree of isolation or remoteness of the area, lack or insufficient provision regarding the quality, quantity and*

*accessibility of public and private services, and the level of material deprivation.* (VT/2006/001).<sup>33</sup>

Haase and Walsh (2007) have recently completed a study raising similar questions with regard to the measurement of rural deprivation in Ireland. Based on extensive consultations with rural practitioners, an important finding of the study is that the key shortcoming of existing measures of deprivation with regard to rural areas is that they fail to take into account the lack of opportunities. Referring to the definition of deprivation by Coombes *et al* (1995): ‘*an absence of essential or desirable attributes, possessions and opportunities which are considered no more than the minimum by that society*’, the authors engage in a detailed exploration of how ‘opportunity deprivation’ might be measured.

In conceptual terms, it is of profound importance to note that both ‘attributes’ and ‘possessions’ can be measured either by using Census variables or indicators derived from administrative data sources. Opportunities, by contrast, cannot be measured at the individual level, as they are related to the characteristics of particular areas, or more precisely to the interaction between spatial and personal characteristics. To measure what could be termed ‘opportunity deprivation’, the authors propose a combined approach comprising two studies: a sample-based statistical model and a spatial gravity model.

#### ***Study 1: A Sample-Based Statistical Model:***

The purpose of this study is to explore the extent to which people are limited in their ability to take advantage of various kinds of opportunities, in the presence of different types of barriers (spatial, temporal, financial and personal). The opportunities considered should include accessing essential services such as education, health, jobs, child care and key consumer services (e.g. post office, supermarket etc). It is likely that access to public transport and its mediating effects in creating or limiting access to opportunities will be a key item to be considered in the course of the study. Ideally, this analysis might be carried out by incorporating an additional module within the EU-SILC study undertaken by the CSO.

#### ***Study 2: A Spatial Gravity Model:***

The second study involves the development and application of a macro-level modified gravity model to provide a spatial measure of opportunity deprivation. Because of the mediating role of transport – and specifically public transport – to accessing opportunities, the study is likely to include the collection of comprehensive data on the provision of public transport, the proportion of population that resides within a given distance from transport access points (bus stops and train stations), as well as devising a methodology for describing the access of rural populations to local labour markets and essential services of varying attractiveness.

Given the difficulties involved in operationalising the concept of ‘opportunity deprivation’ it is not surprising that this has not yet been included in existing deprivation indices. There are, however, growing concerns about the inherent urban bias that afflicts many of these indices and their lack of suitability when applied to more rural societies, as in the case of the EU accession countries. It is thus timely to consider the conceptual basis required in order to move more decisively in this direction.

## **5.5 A Review of Existing Deprivation Indices**

Some form of deprivation index exists in almost every OECD country, and the OECD itself, through its Territorial Committee, has made a considerable contribution to the collection and systematic use of data to address the problems of distressed urban areas. It is, however, difficult to gain a comprehensive international overview of this field of research, as some of the

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<sup>33</sup> Forthcoming study funded by the European Commission on Poverty and Social Exclusion in Rural Areas. See [http://ec.europa.eu/employment\\_social/spsi/studies\\_en.htm](http://ec.europa.eu/employment_social/spsi/studies_en.htm)

existing indices are used within specific sectors only (e.g. health or the environment), or are limited to certain areas of the country.

Historically, there has been a strong impetus towards the development of deprivation indices within the Anglo-Saxon countries, with prominent indices existing in the UK, Ireland, USA, Canada, Australia and New Zealand. In other European countries, deprivation indices exist, but tend not to be available for the whole country, and are not strongly endorsed across multiple sectors or by government departments.

The European Union has only recently begun to pay greater attention to local poverty/deprivation estimates. To date, the emphasis has been on developing a unified approach to the measurement of poverty at national and regional level, as exemplified in the revised set of common indicators of social protection and social inclusion (European Commission, 2006). Attempts to extend such measures to the local scale are still in their infancy and focus on mathematical models which use co-variables from other data sources (e.g. the Census of Population) to estimate the at-risk-of-poverty rate or other key poverty indicators. The advantage of this approach is that it provides a uniform method which, at least in theory, can be extended to all EU countries to yield comparable data throughout the EU. However, it is important to note that this approach can only yield a one-dimensional estimate of the poverty rate or some other similar quantity, and cannot itself provide a multi-dimensional measure of deprivation.

Efforts have been made by the European Commission Joint Research Centre (JRC) and the OECD to tackle the methodological questions underlying the use of composite indicators, of which deprivation indices are a particular example. The recently published *Handbook on Constructing Composite Indicators* (Nardo et al., 2005) provides important guidelines in this regard. Unfortunately, this handbook is exclusively concerned with between-country comparisons and does not address the specific problems encountered in the construction of local poverty/deprivation indices. The handbook does, however, provide important insights into the principles of good indicator construction, which, if appropriately extended, are highly relevant to the construction of a composite local deprivation index.

The two indices that are of greatest interest in the context of the present study are the current Irish and NI/UK indices. In the following sections, we describe in greater detail these two indices. This is followed by a brief reference to some other international indices and a discussion of the relevance of these indices to a future Irish local poverty/deprivation index.

### 5.5.1 The Irish Index of Relative Affluence and Deprivation <sup>34</sup>

#### The Construction of the Irish Deprivation Index

Most deprivation indices are based on a factor analytical approach which reduces a large number of indicator variables to a smaller number of underlying dimensions or factors. This approach is taken a step further in the *Index of Relative Affluence and Deprivation*; rather than leaving the definition of the underlying dimensions of deprivation to data-driven techniques, the authors develop a *prior conceptualisation* of these dimensions. Based on the 1991 and 1996 deprivation indices for Ireland, as well as analyses from other countries, three dimensions of social disadvantage are identified: **Demographic Decline**, **Social Class Disadvantage** and **Labour Market Deprivation**.

**Demographic Decline** is first and foremost a measure of rural deprivation. Unlike its manifestation as unemployment blackspots in urban areas, long-term adverse labour market conditions in rural areas tend to manifest themselves in terms of either agricultural under-employment or emigration. The latter can also be, and increasingly is, the result of a mismatch between education and skill levels, on the one hand, and available job opportunities, on the

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<sup>34</sup> Haase, T. and Pratschke, J. (2005a)

other. Emigration is socially selective, being concentrated amongst core working-age cohorts and those with further education, leaving the communities affected with a disproportionate concentration of economically-dependent individuals as well as those with relatively low levels of education. Sustained emigration leads to erosion of the local labour force, a decreased attractiveness for commercial and industrial investment and, ultimately, a decline in the availability of services.

*Demographic Decline* is measured using five indicators:

- the percentage of population aged under 16 or over 65 years of age
- the percentage change in population over the previous five years
- the percentage of population with a primary school education only
- the percentage of population with a third level education (inverse effect)
- the percentage of households with children aged 15 years and under headed by a single parent (inverse effect).

**Social Class Disadvantage** is equally relevant to both urban and rural areas. Social class<sup>35</sup> refers to the occupation of a particular individual or group of individual. Social class can have a considerable impact in many areas of life: educational achievements, health, housing, crime, economic status and many more. Furthermore, social class is relatively stable over time and constitutes a key factor in the inter-generational transmission of economic, cultural and social assets. Areas with a greater numbers of people in the lower social classes tend by their nature to have higher unemployment rates, to be more vulnerable to the effects of economic restructuring and recession and more likely to experience low pay, poor working conditions as well as poor housing and social environments.

*Social Class Disadvantage* is measured using five indicators:

- the percentage of population with a primary school education only
- the percentage of population with a third level education (inverse effect)
- the percentage of households headed by professionals or managerial and technical employees, including farmers with 100 acres or more (inverse effect)
- the mean number of persons per room
- the percentage of households headed by semi-skilled or unskilled manual workers, including farmers with less than 30 acres.

**Labour Market Deprivation** is predominantly, but not exclusively, an urban indicator. Unemployment and long-term unemployment remain the principal causes of disadvantage at national level, and are responsible for the most concentrated forms of multiple disadvantage found in urban areas. In addition to the economic hardship that results from a lack of paid employment, young people living in areas with particularly high unemployment rates frequently lack positive role models. A further expression of social and economic hardship in urban unemployment black spots is the large proportion of young, one-parent families.

*Labour Market Deprivation* is measured using four indicators:

- the percentage of households headed by semi-skilled or unskilled manual workers, including farmers with less than 12 hectares
- the percentage of households with children aged 15 years and under headed by a single parent
- the male unemployment rate
- the female unemployment rate.

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<sup>35</sup> The entire population is classified into one of the following social class groups, which are defined on the basis of the occupation of the head of household: Professional workers, Managerial and technical, Non-manual, Skilled manual, Semi-skilled, Unskilled, All others gainfully occupied and Unknown (CSO).

Each of the three dimensions of social disadvantage (Demographic Decline, Social Class Disadvantage and Labour Market Deprivation) are measured in an identical way over three different Census waves (1991, 1996 and 2002) and then combined to form a measure of Overall Affluence and Disadvantage at each point in time. This approach allows the same set of dimensions and indicators to be applied to Census data from different periods, whilst maintaining a common structure and measurement scale.

The approach developed by Haase and Pratschke (2005a) is unique in that they include a measure of demographic decline (unlike any other deprivation index in the EU), thus including a specific measure of rural deprivation. The authors acknowledge that there is scope to improve on the measurement of specifically rural forms of deprivation and Haase and Walsh (2007) outline how this can be achieved.

### Validation against the At-risk-of-poverty Rate

As noted earlier, spatial deprivation indices at levels beyond NUTS 3 and particularly NUTS 4 cannot include survey-based measures of deprivation but must rely on the use of proxies. It is thus necessary to validate such indices against the prevailing regional poverty/deprivation measures at the highest possible level of spatial disaggregation. To this end, we compare the Haase and Pratschke index scores against regional and local authority level estimates of the at-risk-of-poverty and consistent poverty rates as reported in Watson *et al.* (2005). We also compare the index scores against the NUTS 3 level results from the 2004 EU-SILC (CSO, 2005).

The NUTS 4 level analysis is based on the 2001/2002 National Survey of Housing Quality (Watson and Williams, 2003). This survey was carried out by the ESRI on behalf of the Department of the Environment, Heritage and Local Government. Because of its exceptionally large sample size of over 40,000 households, it provided a unique opportunity to carry out a more detailed analysis of the spatial distribution of poverty and deprivation, which the EU-SILC, with a sample size of 5,000 to 6,000 households per annum, does not support.

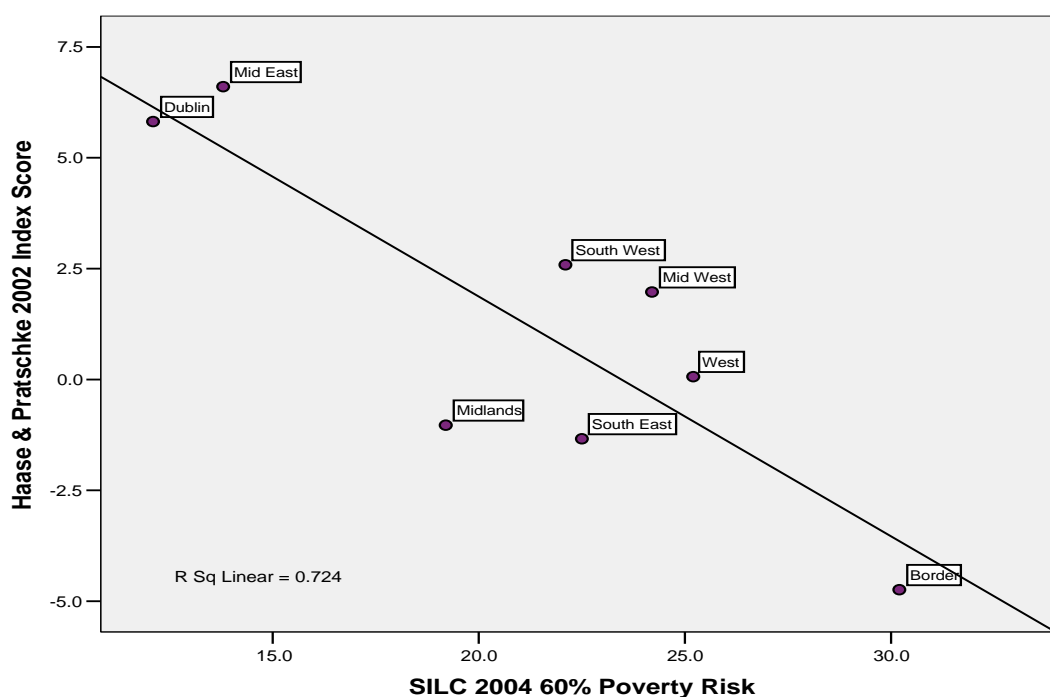
**Table 4.1: Deprivation Index Scores and Poverty Risk by Regional Authority**

Source	Census	Living in Ireland Survey 2000			EU-SILC 2004	
Region	Haase and Pratschke	50% at-risk-of-poverty	60% at-risk-of-poverty	60% consistent poverty	50% at-risk-of-poverty	60% at-risk-of-poverty
Dublin	5.8	17.1	21.3	3.3	7.9	12.1
Mid East	6.6	22.2	25.9	5.8	7.5	13.8
South East	-1.3	26.9	35.4	7.7	10.3	22.5
South West	2.6	32.4	40.0	7.5	11.9	22.1
Mid West	2.0	25.9	35.2	10.4	12.7	24.2
West	.1	31.6	43.5	5.0	13.8	25.2
Border	-4.7	35.5	46.4	10.1	19.8	30.2
Midlands	-1.0	29.7	34.5	4.2	11.0	19.2
R <sup>2</sup>	-	.64	.66	.20	.67	.72

Source: Haase and Pratschke (2005a); Living in Ireland Survey, 2000; EU-SILC 2004

There is broad agreement between the aggregate Haase and Pratschke index scores and the 50 per cent and 60 per cent at-risk-of-poverty rates as measured in the 2000 Living in Ireland Survey and the 2004 EU-SILC. Nevertheless, three out of the eight regional authorities differ markedly in their respective assessment (Figure 4.1).

**Figure 4.1: Deprivation Scores and 60% Poverty Risk by Regional Authority**



Source: Haase and Pratschke (2005a), EU-SILC 2004

A more meaningful comparison can, however, be made at local authority level. Table 4.2 shows the correlations between individual Census variables, the Haase & Pratschke Index and the NSHQ-based disparities in income poverty at local authority level. It indicates that, across the three poverty measures chosen here the combined index performs marginally better than any of the individual Census-based indicators.

**Table 4.2: Correlations with at-risk-of-poverty Rates by Local Authority**

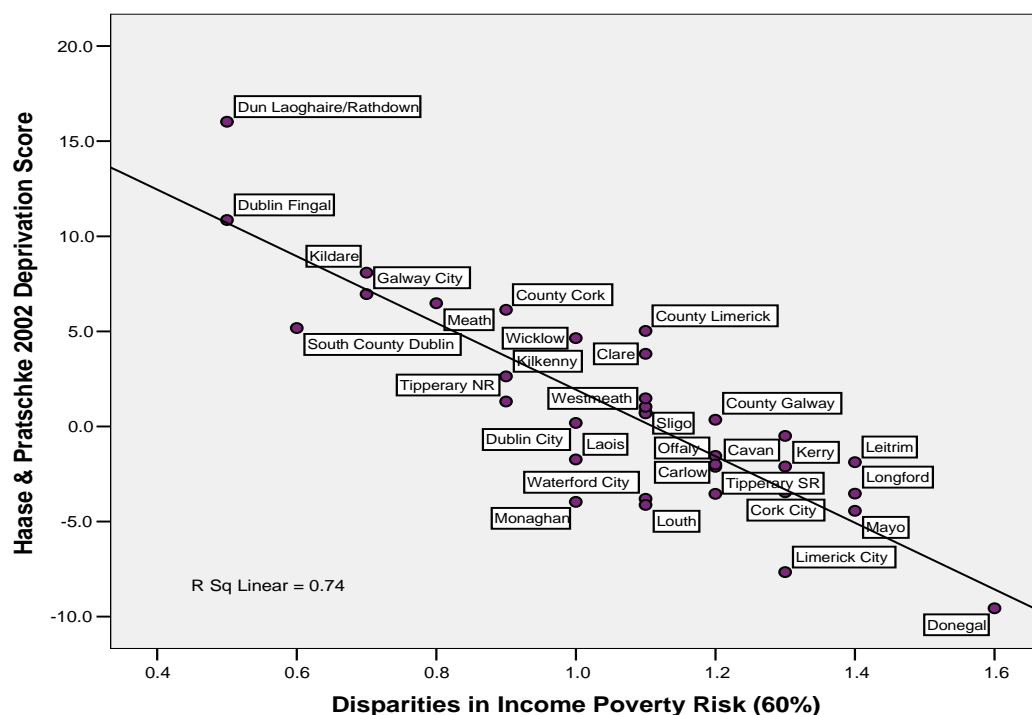
Variable	50% income risk	60% income risk	60% consistent poverty
Haase and Pratschke (2005a)	-0.89	-0.86	-0.85
Age dependency ratio	0.57	0.63	0.54
Proportion with primary education only	0.86	0.87	0.80
Proportion with third level education	-0.71	-0.72	-0.66
Proportion of higher and lower professionals	-0.83	-0.80	-0.78
Proportion of semi and unskilled manual workers	0.88	0.84	0.83
Unemployment rate	0.65	0.61	0.69
Unemployment rate – male	0.63	0.59	0.68
Unemployment rate – female	0.59	0.55	0.60

Source: own calculations

It is further interesting to note which indicators perform better and which are less aligned with the at-risk-of-poverty rate. The indicators most strongly correlated are the two education and social class indicators, whilst the age dependency ratio and the unemployment rates fare less well. This is in concurrence with the structural dimensions conceptualised in the Haase and Pratschke model: whereas the social class dimension is shown to apply across the urban and rural spectrum, the age dependency ratio is a predominantly rural phenomenon whilst the unemployment rate is more strongly correlated with urban deprivation. Thus, spatial variations

in the age dependency or unemployment rate, if taken on their own, are not a reliable indicator of disadvantage more generally.

**Figure 4.2: Deprivation Scores and Disparities in Income Poverty Risk at 60 per cent**



Source: Haase and Pratschke (2005a), Watson et al. (2005)

Figure 4.2 shows a graphical presentation of the relationship between the Disparities in Income Poverty Risk at 60 per cent of median income and the Haase and Pratschke Index Scores. The Disparities in Income Poverty show the ratio of the poverty risk in each local authority area relative to the national figure. Thus, for instance, the risk of poverty in Leitrim, Longford or Mayo, using the 60 per cent median income line, is 40 per cent higher than the national average. The national average of the Haase and Pratschke Index is zero.

In conclusion, there is a close correlation between the Haase and Pratschke (2005a) index scores and the at-risk-of-poverty rate, despite the fact that the index takes into account a broad range of dimensions whilst the poverty rate is an exclusively income-related measure.

### 5.5.2 The Northern Ireland Multiple Deprivation Measure<sup>36</sup>

The Northern Ireland Multiple Deprivation Measure 2005 (NI MDM 2005)<sup>37</sup> identifies small area concentrations of multiple deprivation across Northern Ireland. It builds on previous measures published in 2001<sup>38</sup> and aims to facilitate the effective targeting of policies and resources towards Northern Ireland's most deprived areas. The core reporting geography for the Multiple Deprivation Measure (MDM) and its seven domain measures is at Super Output Area (SOA) level, while the Economic Deprivation measure (including Income, Employment and Proximity to Services) is reported at Output Area<sup>39</sup> level, allowing the identification of small pockets of deprivation. Summary measures have also been produced for Local Government Districts (LGDs), Parliamentary Constituencies (PCs) and Electoral Wards.

#### The Conceptual Basis of the NI Multiple Deprivation Measure

<sup>36</sup> see <http://www.ninis.nisra.gov.uk/>

<sup>37</sup> NISRA (2005)

<sup>38</sup> Noble et al. (2001)

<sup>39</sup> Note: the geography of the NI 'Output Areas' are the equivalent of the 'Small Areas' discussed in Section 3.6 of this report.



The starting point for the formulation of the MDM is the work of Townsend, which, as we have seen, heavily emphasises the importance of material deprivation in the measurement of both poverty and deprivation. Townsend makes a distinction between social and material deprivation, thus anticipating certain aspects of what is now referred to as social exclusion, but concedes that social deprivation is more difficult to measure. Material deprivation, by contrast, is relatively straightforward, being related to diet, health, clothing, housing, household facilities, environment and work (Townsend, 1987, 136, quoted in NISRA 2005:5). Noble *et al.* (2001) acknowledge that Townsend's work primarily refers to individuals experiencing deprivation – single or multiple – but hold that the concepts can be extended to area-based measures:

*At an area level it is very difficult to measure the percentage of the population experiencing deprivation on one, two or more domains. It is possible to look at single forms of deprivation at an area level and state that a certain proportion of the population experiences that deprivation or a proportion experiences some other forms of deprivation and describe at an area level the combination of single deprivations as area level multiple deprivation.*

*The approach used here conceptualises multiple deprivation as a composite of different domains of deprivation. However, it says little about the individual experience of multiple deprivation.*

*The area itself can be characterised as deprived relative to other areas, in a particular domain of deprivation, on the basis of the proportion of people in the area experiencing the type of deprivation in question. In other words, the experiences of the people in an area give the area its deprivation characteristics. (NISRA, 2005:5).*

This quotation highlights an important detail in the conceptual foundations of the NI MDM. Whilst acknowledging that area measures of multiple deprivation are imperfect, the authors show that the underlying aim of the index is to approximate the number of people who experience multiple deprivation in a given area. Thus the NI MDM takes the individual as the only valid unit of analysis and, in conceptual terms, defines area deprivation on the basis of the proportion of people in the area experiencing one or another form of deprivation.

## **The Construction of the NI Multiple Deprivation Measure**

The NI MDM differs from previous Northern Ireland deprivation indices in two important ways: firstly, instead of being based on Census information, it is almost entirely based on administrative databases provided by various Government departments and agencies and, secondly, it focuses on domain-specific measures of deprivation which are subsequently aggregated to form a multiple deprivation measure.

This move towards the use of administrative data as a basis for the construction of new deprivation indices is rooted in a specific conceptualisation of deprivation in terms of individual experience and a concern with 'counting the poor'. As census variables provide, at best, a proxy measure of the number of poor people in a given census tract, it is deemed preferable to use administrative databases that record, for example, the benefit entitlements of individuals.

The move towards the use of administrative databases instead of the census is further motivated by the fact that the Census of Population is carried out every ten years in Northern Ireland, and there are long-standing concerns that deprivation indices primarily based on the Census quickly lose relevance due to their lack of timeliness. Moreover, administrative data sources make it possible to specify a wider set of domain-specific deprivation measures than was hitherto the case. For example, the NI MDM 2005 contains seven domains of deprivation, comprising a total of 42 individual indicators (see Appendix).

## **Combining the Domains**

Having collected a vast amount of data from a variety of administrative data sources, the NI MDM is constructed in a straight-forward, two-step fashion. As a first step, a factorial analysis is undertaken within each domain to obtain a single, domain-level deprivation measure and, in a second step, the domain-level deprivation measures are then combined using a simple additive approach, applying weights to each domain as follows:

- Income Deprivation 25%
- Employment Deprivation 25%
- Health Deprivation and Disability 15%
- Education, Skills and Training Deprivation 15%
- Proximity to Services Deprivation 10%
- Living Environment Deprivation 5%
- Crime and Disorder 5%

### 5.5.3 Other International Deprivation Indices

Other examples of well-established deprivation indices are to be found particularly in Canada, the USA and New Zealand.

The most-widely used index in Canada is the Quality of Life Index<sup>40</sup> which aims at providing a measure of people's well-being. The index covers eleven domains: household finances, employment and work, social opportunity and mobility, social stability, participation in democratic processes, education, access to health resources, leisure and recreation, housing, accessibility to services, and environmental quality. The individual indicators (and their domains) are categorised into three broad groups called the social environment, the economic environment and the physical environment. The indicator data are compiled, transformed and analysed to generate three quality of life maps for each environment, and then combined in a fourth map to show the overall quality of life. The overall index uses a simple additive form of standardised z-scores.

An interesting new development in the arena of deprivation indices is the *Canadian Index of Wellbeing* (CIW).<sup>41</sup> This is a broad multidimensional index covering eight domains: living standards, healthy populations, community vitality, time use, educated populace, ecosystem health, arts and culture, and civic engagement. The index has its origin in a critique of purely economic approaches to well-being. To this end, the CIW considers a wide range of beneficial activities as assets, and harmful ones as deficits. The CIW is constructed in close co-operation with the European Commission Joint Research Centre (JRC) and the OECD. The CIW is still under construction and no final decision has yet been made on the methodology for combining the indicators into a single index.

A third deprivation index, used predominantly in the context of health-related research in the Quebec region, is that developed by Pampalon and Raymond.<sup>42</sup> This index describes the material and social aspects of deprivation according to Statistics Canada's dissemination area (DA).<sup>43</sup> In this index, material deprivation is mainly associated with education, employment and income, whereas social deprivation refers primarily to single parenting, marital status, and living alone. The indicators were selected for their known relations with a large number of health problems, their affinities with the material and social forms of deprivation and their availability by DA. Both dimensions of deprivation are in fact the two main components of a principal component analysis carried out on the above socio-economic indicators.

<sup>40</sup> see <http://atlas.nrcan.gc.ca/site/english/maps/peopleandsociety/QOL>

<sup>41</sup> see <http://www.atkinsonfoundation.ca/ciw>

<sup>42</sup> see <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1936419&blobtype=pdf>

<sup>43</sup> Dissemination areas are the smallest geographical units available in Canada. The average population of a DA is about 600 persons.

There are a number of deprivation indices that have been computed for the USA,<sup>44</sup> but most of these are limited in scope, aiming to provide comparable social and health-related data for the main cities or for urban and suburban areas only.

The *New Zealand Index of Deprivation* (NZDep2006)<sup>45</sup> is a long-established deprivation index. The NZDep is based entirely on census data and combines nine census variables: the proportion of people receiving benefits, living in households below an income threshold, not living in own home, single parent families, unemployed, with low qualifications, living in crowded condition, without access to a telephone, and without access to a car. The construction of the NZDep involves a principal component analysis, whereby the index is constituted as the first principal component. The index has been constructed in almost identical fashion for the 1991, 1996, 2001 and 2006 Censuses and claims to provide some, though limited, comparability over time.

## 5.5.4 Discussion

In this section, we take a critical look at the conceptual underpinning of the deprivation indices described in the previous sections. The discussion is not intended to be comprehensive, and solutions will not be provided for each issue raised, as our aim is merely to identify some of the issues that we feel should be addressed in the context of the development of new poverty/deprivation indices for Ireland in the future.

### The Use of Administrative Data Sources

The NI MDM has made great progress in using administrative databases as a source of information for the construction of a deprivation index. This is extremely impressive and constitutes a major extension to the statistical information provided by the census alone. In particular, it has allowed a broader number of domains to be included in the analysis, as well as providing a deeper coverage of individual domains. On the other hand, the conceptual reasons for using some of data are not always sufficiently evident.

#### *Timeliness*

One of the major concerns in Northern Ireland, as elsewhere in the UK, is the lack of timeliness of census-based deprivation indices. Whilst this concern is understandable particularly in the context of decennial censuses, it is easy to exaggerate its substantive importance. Recent research by Haase and Pratschke (2005a) employing identical scales that demonstrate factorial invariance across three census waves, show that whilst absolute levels of affluence and deprivation in Ireland changed greatly between 1991 and 2002, relative deprivation has remained much more stable. This finding is in line with recent UK studies which have found that relative deprivation in England and Wales has not changed dramatically over a full century.<sup>46</sup> This suggests that calls for more timely indicators might be associated, at least in part, with the misguided hope that specific interventions might be demonstrated to produce a short-term change in the relative deprivation of certain areas.

#### *The Use of Benefit Data*

In some of the domains used in the MDM, benefit data (e.g. the number of households in receipt of income supports) are used as an indicator of the number of people who experience specific kinds of poverty or deprivation. Local benefit data clearly offer important information for those who are actively involved in local development and should arguably be made available to Government departments, public agencies and other actors (see Section 3.3). Nevertheless, the use of benefit data is not self-evident and requires conceptual justification as far as index construction is concerned. Firstly, benefit data crucially depend on the definition of

<sup>44</sup> see <http://www.socialindicators.com/> and [http://www.hscbklyn.edu/urbansoc\\_healthdata/Urban%20Center%20Website/web%20design2/deprivation\\_index.htm](http://www.hscbklyn.edu/urbansoc_healthdata/Urban%20Center%20Website/web%20design2/deprivation_index.htm)

<sup>45</sup> see <http://www.moh.govt.nz/phi/publications#DeprivationIndex>

<sup>46</sup> Gregory, Dorling and Southall (2001)

benefit entitlements at a given point in time. Raising the threshold to any given entitlement would actually reduce the number of people entitled to it and, by extension, reduce the level of deprivation measured. In reality, however, these people would arguably be in a worse situation than before.

It could be argued that this does not matter, as long as the entitlement is uniformly defined across the whole country or region to which the index applies. But what if benefit entitlements for one group (e.g. the unemployed) is more clearly defined than that for another group (e.g. one that experiences social exclusion on the basis of ethnic or religious discrimination or, as is the case in agriculture, where income support is provided through price supports?) Another critical issue with the use of benefit data is that the instability of related entitlements effectively renders comparisons of index scores over time impossible.

## **Distinguishing between Domains and Dimensions**

*Domains* are the different fields within which a person might experience poverty or deprivation, such as income, employment, health and education. *Dimensions* are the underlying, and not directly observable, factors or mechanisms that drive these outcomes. Take, for example, the widely understood concept of social class, which has been shown to affect differential outcomes in income, wealth, health and so on. If we simply add together a set of observations across the multiple domains influenced by this dimension, we are essentially measuring the same underlying construct – social class – again and again. The weight assumed by the dimension is directly proportional to the number of indicators we choose to include in the analysis.

This is the main reason for applying factor analysis techniques during the development of synthetic indices. Factor analysis provides a means by which multiple observations can be reduced to their underlying dimensions, without losing significant detail in the observed variation. Interestingly, the NI MDM uses factor analysis to reduce the indicators within each domain to a single, domain-specific deprivation measure. However, no explanation is provided as to why this procedure is not applied across the seven domains which make up the NI MDM. This, in our view, is the most important methodological shortcoming in the construction of the NI MDM. By failing to undertake a dimensional analysis across all domains, there are no checks on the overall balance of the index. As a result, as can easily be shown, the index has a large and unwarranted urban bias, effectively failing to adequately capture rural deprivation.

## **Comparison over Time**

Until recently, one of the characteristic shortcoming of all composite deprivation indices was their inability to facilitate comparisons over time. In other words, deprivation indices could be used for targeting resources, but not for monitoring or evaluation purposes. The reason for this is that the most commonly adopted statistical techniques, including all forms of exploratory factor analysis, rely on a data-driven approach to the extraction and rotation of factors or components that cannot be extended or generalised beyond individual waves of data.

This shortcoming is tackled and overcome in the approach adopted by Haase and Pratschke (2005a), who use Structural Equation Modelling to construct a stable index over three successive census waves. Using the equivalent of a Confirmatory Factor Analysis model at each time-point, the dimensions of disadvantage are first conceptualised using theory, and prior research findings and indicator variables are then selected to measure these. Each dimension is linked with a subset of indicator variables, which simplifies interpretation as well as giving greater scope for the exact use of indicator variables.<sup>47</sup> Structural Equation Models

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<sup>47</sup> In Principal Component Analysis (PCA), all variables are loading on each of the dimensions which makes it impossible to use variables for one dimension only and frequently leads to counter-intuitive factor loadings. Structural Equation Modelling, of which Confirmatory Factor Analysis (CFA) is a particular form, in contrast allows much more specific models to be postulated, with each dimension being specifically related to a subset of variables only. For example, population decline is a central variable to

can be used to estimate disadvantage scores for individual areas, and the estimated scores have the advantage that they measure precisely the theoretical constructs specified by the researcher. Above all, where a common model is implemented, these scores are comparable from one period of time to another and from one country to another. This represents a major breakthrough in the construction of deprivation indices as, for the first time, they may be used not only for resource allocation, but also for monitoring and evaluation.

### Summary of Comparison

In summary, we can highlight the following strengths and weakness of the most prominent of the present deprivation indices:

**Table 4.3: Strengths and Weaknesses of Selected Deprivation Indices**

Index	Strengths	Weaknesses
<b>Index of Relative Affluence and Deprivation</b>	<ul style="list-style-type: none"> <li>includes dimensional analysis across domains</li> <li>allows comparison across multiple census waves</li> </ul>	<ul style="list-style-type: none"> <li>relies on poor census geography (EDs)</li> <li>relies on census variables only</li> </ul>
<b>NI Multiple Deprivation Measures</b>	<ul style="list-style-type: none"> <li>improved census geography (COAs)</li> <li>utilising non-census data relating to a larger number of domains</li> <li>enhanced timeliness</li> </ul>	<ul style="list-style-type: none"> <li>lacks dimensional analysis across domains</li> <li>displays considerable urban bias</li> <li>does not allow comparison over time</li> </ul>
<b>Canadian Quality of Life Index</b>	<ul style="list-style-type: none"> <li>covers a large number of domains and variables</li> </ul>	<ul style="list-style-type: none"> <li>simplistic combination into overall index, using additive form of z-scores</li> </ul>
<b>Canadian Index of Well-being</b>	<ul style="list-style-type: none"> <li>introduces explicit measurement of well-being across large number of domains and variables</li> </ul>	<ul style="list-style-type: none"> <li>method of combining indicators into single index not yet finalised</li> </ul>
<b>New Zealand Deprivation Index</b>	<ul style="list-style-type: none"> <li>identical form over four successive census periods</li> </ul>	<ul style="list-style-type: none"> <li>relies on census variables only</li> <li>uses Principal Component Analysis</li> </ul>
<b>US Deprivation Indices</b>		<ul style="list-style-type: none"> <li>not generally available across whole country</li> </ul>

## 5.6 A Review of Data and its Availability

In this final section on the construction of a local poverty/deprivation index we address the question of data requirements and related feasibility issues. A number of recent studies have reviewed data sources for use in poverty monitoring and index construction. Rather than repeating their in-depth discussion of possible indicators, our aim here is to provide a more concise overview. We are less concerned with the precise definition of individual indicators, and more interested in exploring their underlying dimensionality.

Most of the available studies approach the selection of variables from the point of view of the coverage of various domains. This approach is attractive, as there is broad agreement about the domains that are potentially relevant to deprivation, and this approach increases the intuitive appeal of the resulting index.

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understand rural decline, but can have a positive meaning in the context of an overcrowded urban area. Thus the variable should be used for the rural dimension only.

However, as we have argued throughout this report, we believe that it is more important to start by conceptualising the dimensions of deprivation and then to seek the required data. This contributes to the achievement of a balanced index, in line with a growing understanding of the underlying processes that contribute to the production and reproduction of social exclusion. Indeed, theorising these processes and related dimensions is given a higher priority than the inclusion of all possible data that might be available.

In the absence of a consolidated tradition of studies that specifically address the question of dimensionality, we believe that the following three dimensions should be considered in the present context:

1. acute labour market deprivation – attributes – urban
2. social class – possessions – urban and rural
3. demographic decline – opportunities – rural

### ***Acute labour market deprivation – Social class deprivation – Demographic decline***

This three-dimensional approach arose as a result of a detailed review of a significant number of deprivation indices for EU and OECD countries which used factor analytical techniques. This division is mirrored by the definition of deprivation by Coombes *et al* (1995) where *attributes* rest with the person, *possessions* reflect what people can draw towards themselves and *opportunities* indicate what they reach out towards.

Conceptualisation in these terms immediately draws attention to an important fact: whereas attributes and possessions can readily be measured using either census or administrative data (both rest with the individual), the measurement of opportunities creates much greater difficulties. At the same time, few would doubt that opportunities are a major factor in the production of poverty and deprivation and its reproduction over time.

The UK-based deprivation indices have tended to pay little attention to the balanced measurement of deprivation across an urban-rural spectrum. The more we shift our gaze towards the European periphery, particularly with regard to Southern Europe and the new accession countries, the adequate measurement of rural deprivation becomes a major issue. The urban-rural dimension is addressed within the Haase and Pratschke approach described earlier, as acute labour market deprivation is primarily associated with urban areas, whereas demographic decline is mainly observed in rural areas, although data limitations place some constraints on the precision of the resulting estimates.

In seeking to improve this measurement approach, it is essential to remember that rural areas in Europe have undergone massive transformations over the past few decades, characterised by the decline of agricultural employment, industrialisation, the development of a service-based economy, greater accessibility due to improved private transport and a general trend towards greater urbanisation. Taking these changes into account, rural deprivation should be conceptualised primarily in terms of the lack of opportunities.

In the following tables, we summarise a number of possible indicators for future deprivation indices in Ireland. In each case, the indicators are grouped under a number of domains: Table 4.4 shows their source and the spatial level at which they are currently available or at which they might be produced, on the basis of Departmental willingness and given current technological constraints. Table 4.5 explores the dimensions that are thought to underlie these indicators. It should be noted that a more precise analysis of dimensionality must await empirical analysis.

The indices and literature utilised in preparing the following tables include:

- Townsend *et al* (1988)
- Carstairs and Morris (1991)
- Department of the Environment (UK) 1983
- Department of the Environment (UK) 1995
- Coombes *et al* (1995)
- Robson *et al* (NI, 1994)
- Palmer and Rahman (2002)
- Noble (NI, 2001)
- NISRA (NI, 2005)
- Haase and Pratschke (2005a)
- Pursell, Kearns and O'Donovan (2007)

The tables use the following symbols:

- ✓ indicates that data have been collected and published
- (✓) indicates that data have been collected but require additional work, e.g. pooling of data over successive surveys. This may also indicate lower levels of robustness or constraints in using data in the context of index construction (e.g. non-normal distributions, partial coverage).
- p** indicates that an indicator is technically possible, but depends upon the geo-coding of administrative data sources that can then be released at an appropriate geographical level.
- (p)** indicates that an indicator may be technically possible at a given geographical level.

**Table 4.4: Possible Indicators by Source, Geographical Level and Local Availability**

Domain	Indicator	Census	EU-SILC	QNHS	Gov. Departments	Local Authorities	NUTS 1: National	NUTS 2: Region	NUTS 3: Reg. Authority	NUTS 4: LA	NUTS 5: ED (future SA)	available for 2006	ISDI enabled 2011
<b>Income</b>													
	At-risk-of-poverty rate		✓				✓	✓	✓	(✓)			
	Consistent Poverty		✓				✓	✓	✓	(✓)			
	Other derivatives of above		✓				p	p	p				
	SW dependency (benefit-based)		✓		✓		✓	✓	✓	p	p		✓
	Financial difficulties (subjective)		✓				✓	✓	✓				
<b>Employment</b>													
	Unemployment (Census-based)	✓					✓	✓	✓	✓	✓	✓	✓
	Unemployment (ILO-based)		✓	✓			✓	✓	✓	(✓)			
	Long-term unemployed			✓			✓	✓	✓	(✓)			
	Part-time employment			✓			✓	✓	✓	(✓)			
	All of above (benefit-based)				✓		p	p	p	p	p		✓
	Low pay			✓			✓	✓	✓	(✓)			
	Access to training		✓	✓			✓	✓	✓	(✓)			
	Small farming	✓					✓	✓	✓	✓	(✓)		
<b>Health</b>													
	Premature mortality	(✓)			✓		p	p	p	p	p		✓
	Medical Card holder		✓		✓		✓	✓	✓	p	p		✓
	Chronic Illness or disability		✓		✓		✓	✓	✓	p	(p)		✓
	Disability (Census-based)	✓					✓	✓	✓	✓	✓		✓
	Low birth weight				✓		p	p	p	p	p		✓
	Depression				✓		p	p	p	p	(p)		✓
	Drug use				✓		p	p	p	p	(p)		✓
<b>Education</b>													
	Primary education only	✓	✓				✓	✓	✓	✓	✓	✓	✓
	Third level education	✓	✓				✓	✓	✓	✓	✓	✓	✓
	Early school leaving				✓		p	p	p	p	p		✓
	Without basic literacy / numeracy				✓		p	p	p	p	p		✓
<b>Living Environment</b>													
	Homelessness					✓	✓	✓	✓	✓			
	Temporary accommodation					✓	✓	✓	✓	✓			
	Overcrowding					?							
	LA housing	✓	(✓)				✓	✓	✓	✓	✓	✓	✓
	Lacking amenities					?							
	Poor environment					?							
	Crime and Disorder					?							
	Children in unsuitable accommodation				?								
<b>Demography and Social Class</b>													
	Age dependency	✓					✓	✓	✓	✓	✓	✓	✓
	Population change	✓					✓	✓	✓	✓	✓	✓	✓
	Social class	✓					✓	✓	✓	✓	✓	✓	✓
	Single parent	✓	✓				✓	✓	✓	✓	✓	✓	✓
	Pensioners living alone	✓					✓	✓	✓	✓	✓	✓	✓
	Ethnic minorities	✓					p	p	p	p	(p)	(✓)	✓
<b>Opportunity Deprivation</b>													
	Lack of access to essential services		p				p	p	p	(p)			
	Access to public transport					p	(p)	(p)	(p)	(p)	(p)		✓



**Table 4.5: Possible Indicators by Local Availability and Dimensionality**

Domain	Indicator	available for 2006	ISDI enabled 2011	Acute Labour Market	Social Class	Demographic
<b>Income</b>						
	At-risk-of-poverty rate				✓	
	Consistent Poverty				✓	
	Other derivatives of above				✓	
	SW dependency (benefit-based)		✓		✓	
	Financial difficulties (subjective)				✓	
<b>Employment</b>						
	Unemployment (Census-based)	✓	✓	✓		
	Unemployment (ILO-based)			✓		
	Long-term unemployed			✓		
	Part-time employment			✓		
	All of above (benefit-based)		✓	✓		
	Low pay				✓	
	Access to training					✓
	Small farming					✓
<b>Health</b>						
	Premature mortality		✓		✓	
	Medical Card holder		✓		✓	
	Chronic Illness or disability		✓		✓	
	Disability (Census-based)		✓		✓	
	Low birth weight		✓		✓	
	Depression		✓		✓	
	Drug use		✓	✓		
<b>Education</b>						
	Primary education only	✓	✓		✓	
	Third level education	✓	✓		✓	
	Early school leaving		✓		✓	
	Without basic literacy / numeracy		✓		✓	
<b>Living Environment</b>						
	Homelessness			✓		
	Temporary accommodation			✓		
	Overcrowding			✓		
	LA housing	✓	✓	✓		
	Lacking amenities			✓		
	Poor environment			✓		
	Crime and Disorder			✓		
	Children in unsuitable accommodation			✓		
<b>Demography and Social Class</b>						
	Age dependency	✓	✓			✓
	Population change	✓	✓			✓
	Social class	✓	✓		✓	
	Single parent	✓	✓	✓		
	Pensioners living alone	✓	✓			✓
	Ethnic minorities	✓	✓	✓		
<b>Opportunity Deprivation</b>						
	Lack of access to essential services					✓
	Access to public transport		✓			✓

Note: Table only denotes primary dimensional association.

## 6 Summary of Main Findings

Based on the considerations elaborated upon throughout the report, we summarise our findings as follows:

- **The consultation process undertaken as part of this study clearly identifies that there is wide support amongst institutional and local stakeholders for a local poverty/deprivation index.**
- **A local poverty/deprivation index plays an important role in the process of local poverty impact assessment and thus in the wider objectives of the LAPSIS, NAPS and NAPinclusion.**
- **The current Irish and NI/UK deprivation indices provide important elements that would need to be incorporated in an ‘optimal’ index for Ireland.**
- **The Irish *Index of Relative Affluence and Deprivation* takes its strengths from its overall dimensionality and its ability to provide comparable deprivation scores over successive Census periods.**
- **The NI/UK *Multiple Deprivation Measures* take their strength from the inclusion of a broader set of data based on administrative data sources and the successful implementation of a more detailed census geography.**
- **Due to the absence of both a revised census geography and any additional poverty-related indicators from administrative data sources at this point in time, the 2006 Irish deprivation index will be constructed in a similar way to the 2002 index.**
- **A new census geography of Small Areas (SAs) is currently being developed and the CSO is committed to publish the 2011 SAPS data at that level.**
- **Little progress has been made to date with regard to poverty-related data coming forward from administrative data sources. However, these sources remain a rich potential source of information to inform patterns of local poverty.**

## 7 Key Recommendations

### **1 A key stakeholder needs to be identified to drive the local poverty/deprivation index forward.**

Monitoring progress on poverty is a central element in the call for greater availability of local data. The next step is to identify a key actor for the development of a local poverty/deprivation index.

### **2 The key stakeholder should prepare discussions with Government Departments to promote a willingness on their part to provide local area data relevant to anti-poverty and social inclusion proofing.**

The key stakeholder should, either on its own, or in conjunction with other relevant agencies, develop an initiative to discuss the barriers that need to be overcome to make relevant local poverty data from administrative data sources available at the earliest point in time.

### **3 The key stakeholder should prepare for the greatest possible 'buy-in' for a new poverty/deprivation index by all relevant Government Departments, agencies and local stakeholders in advance of the 2011 Census data becoming available.**

In the past, the *Index of Relative Affluence and Deprivation* was widely used across various Government Departments, state and voluntary agencies and the community sector. However, there has never been an 'official' Irish deprivation index, used as the definitive index across all major stakeholders. If, as is envisaged, different Government Departments will in future provide local area data based on their respective administrative records, prior agreement about the use of the data and 'buy-in' to the resulting deprivation index is essential.

### **4 Availability of local data based on administrative data sources should be secured well in advance of 2011, particularly in relation to Social Welfare, Health, Education and Environment.**

The INSPIRE directive requires that member states make spatial data templates from administrative data sources available by 2014, a clear target date by which the data structures must be in place. The new Small Area geography will be developed in advance of the 2011 Census, and the CSO is committed to publishing the 2011 SAPS at the level of the new SAs. It is thus of utmost importance that other poverty-related information from administrative data sources is also made available by 2011 at the latest.

### **5 The 2011 Index should be constructed using both census and administratively-based data sources.**

Census data remain the most robust data source for local area data. As the Census is carried out every five years in Ireland, it is also quite timely. We thus do not recommend to replace the use of census data for the construction of an Irish deprivation index by indicators based on administrative data sources only, but to develop an approach that maximises the potential of both types of data.

### **6 The 2011 Index should build on the most advanced methods of index construction.**

The current Irish and NI/UK deprivation indices have different strengths and weaknesses. A future Irish index should draw on the strengths of both indices by using a new census geography, incorporating a balanced approach to measuring urban and rural deprivation and ensuring comparability over time.

## Bibliography

**Anderson, R.** (2004) *Quality of Life in Rural Europe*, Dublin: European Foundation of Improving Living and Working Conditions.

**Asthana, S., Brigham, P., Halliday, J., Gibson, A., Mackenzie, I., Dicker, J., Floyd, G., and Moon, G.** (2001) *Review of the Effectiveness of Measuring Rural Deprivation*. Bristol: South West Public Health Observatory.

**Asthana, S., Halliday, J., Brigham, P. and Gibson, A.** (2002) *Rural Deprivation and Service Need: A Review of the Literature and an Assessment of Indicators for Rural Service Planning*. Bristol: South West Public Health Observatory.

**Bailey, N., Spratt, J., Pickering, J., Goodlad, R., and Shucksmith, M.** (2004) *Deprivation and Social Exclusion in Argyll and Bute – Report to the Community Planning Partnership*, Scottish Centre for Research on Social Justice, Universities of Glasgow and Aberdeen.

**Bartholomew, D.** (1988) *Measuring Social Disadvantage and Additional Educational Needs*. A Report to the Department of the Environment. London: LSE Department of Statistical and Mathematical Sciences.

**Bell, D.** (1990) *Data Sources for Area Prioritisation: Section A – Review and Analytical Topics*. Edinburgh: DG Information Services.

**Burchardt, T., Le Grand, J. and Piachaud, D.** (2002) *Understanding Social Exclusion*. Oxford: Oxford University Press.

**Callan, T., Layte, R., Nolan, B., Watson, D., Whelan, C., T., Williams, J. and Maître, B.** (1999) *Monitoring Poverty Trends: Data from the 1997 Living in Ireland Survey*. Dublin: Stationery Office and Combat Poverty Agency.

**Carstairs, V. and Morris, R.** (1991) *Deprivation and Health in Scotland*. Aberdeen: Aberdeen University Press.

**Central Statistics Office** (2003) *Statistical Potential of Administrative Records (SPAR): An Examination of Data Holdings in Six Government Departments*, Dublin: Central Statistics Office.

**Central Statistics Office** (2005) *EU Survey on Income and Living Conditions (EU-SILC)*, Dublin: Central Statistics Office.

**Combat Poverty Agency** (1998) *Submission for White Paper on Rural Development*, Dublin: Combat Poverty Agency.

**Combat Poverty Agency** (2004), *Strategic Plan 2005-2007*, Dublin: Combat Poverty Agency.

**Combat Poverty Agency** (2005a) *Developing a Local Anti-Poverty Strategy: A Guide*. Dublin: Combat Poverty Agency.

**Combat Poverty Agency** (2005b) *Review of the Poverty Proofing Process – Submission by the Combat Poverty to the OSI/DS&FA*. Dublin: Combat Poverty Agency.

**Commins, P.** (2004) 'Poverty and Social Exclusion in Rural Areas: Characteristics, Processes and Research Issues' in *Sociologia Ruralis*, Vol. 44, No. 1, p 60-75.

**Cook, S., Poole, M.A., Pringle, D.G. and Moore, A.J.** (2000) *Comparative Spatial Deprivation in Ireland: A Cross Border Analysis*. Dublin: Oak Tree Press.

**Coombes et al.** (1995) Towards an Index of Deprivation: A Review of Alternative Approaches, Part 1 in Department of the Environment, UK (1995) cit. op.

**Craig, S. and McKeown, K.** (1994) *Progress through Partnership*. Dublin: Combat Poverty Agency.

**Curtin C., T. Haase and H. Tovey, eds.** (1996) *Poverty in Rural Ireland – A Political Economy Perspective*, Dublin: Combat Poverty Agency and Oak Tree Press.

**Department of the Environment and Local Government** (2002) *The National Spatial Strategy: People, Places and Potential*, Dublin: Author.

**Department of the Environment, UK** (1983) *1981 Deprivation Index*. London: HMSO.

**Department of the Environment, UK** (1995) *1991 Deprivation Index: A Review of Approaches and a Matrix of Results*. London: HMSO.

**Duncan, G. and Aber, J.L.** (1997) 'Neighbourhood models and measures' in J. Brooks-Gunn et al. (eds.) *Neighbourhood Poverty: Context and Consequences for Children*. Vol. I. New York: Russell Sage Foundation.

**European Commission** (1997) 'Modernising and Improving Social Protection in the European Union'.

**European Commission** (2002) *The Social Inclusion Process*. Brussels: Office for Official Publications of the European Communities, Brussels.  
[http://europa.eu.int/comm/employment\\_social/soc-prot/soc-incl/index\\_en.htm](http://europa.eu.int/comm/employment_social/soc-prot/soc-incl/index_en.htm)

**European Commission** (2003) *Regional Indicators to Reflect Social Exclusion and Poverty* (VT/2003/43), University of Siena.  
[http://europa.eu.int/comm/employment\\_social/social\\_inclusion/docs/regionalindicators\\_en.pdf](http://europa.eu.int/comm/employment_social/social_inclusion/docs/regionalindicators_en.pdf)

**European Commission** (2005) *Joint Report on Social Protection and Social Inclusion*. Luxembourg: Office for Official Publications of the European Communities.  
[http://europa.eu.int/comm/employment\\_social/social\\_inclusion/docs/jointreport\\_2005\\_en.pdf](http://europa.eu.int/comm/employment_social/social_inclusion/docs/jointreport_2005_en.pdf)

**European Commission** (2005) *Regional Indicators to Reflect Social Exclusion and Poverty*. Luxembourg: Office for Official Publications of the European Communities.  
[http://ec.europa.eu/employment\\_social/spsi/docs/social\\_inclusion/regionalindicators\\_en.pdf](http://ec.europa.eu/employment_social/spsi/docs/social_inclusion/regionalindicators_en.pdf)

**European Commission** (2006) *Portfolio of Overarching Indicators and Streamlined Social Inclusion, Pension, and Health Portfolios*: Luxembourg: Office for Official Publications of the European Communities.  
[http://ec.europa.eu/employment\\_social/social\\_inclusion/indicators\\_en.htm](http://ec.europa.eu/employment_social/social_inclusion/indicators_en.htm)

**Fingal County Council** (2007) *Fingal Data Sharing Initiative*, Dublin: Fingal Development Board.

**Foley, R. et al.** (2005) *Final Report of the Small Areas Project (Stage II): Proofs of Concept – The Value and Potential of Small Area Spatial Data in Ireland in the 21<sup>st</sup> Century*, Report to the Information Society Commission. Dublin: Department of the Environment, Heritage and Local Government, the Office for Social Inclusion and the Central Statistics Office.

- Fotheringham, A.S. and Charlton. M.** (2005) *Final Report of the Small Areas Project (Stage II) – Development of an Automated Process for generating Small Areas for Data Output in Ireland.*
- Gordon, D.** (1995) 'Census based deprivation indices: their weighting and validation', in *Journal of Epidemiology and Community Health*, No. 49, Supplement 2, pp S39-S44.
- Government of Ireland** (1997) *Sharing in Progress – National Anti-Poverty Strategy*, Dublin: Author.
- Government of Ireland** (1997) *National Action Plan against Poverty and Social Exclusion 2003–2005.* [http://www.socialinclusion.ie/publications/napincl\\_plan0305.pdf](http://www.socialinclusion.ie/publications/napincl_plan0305.pdf)
- Government of Ireland** (2007a) *Towards 2016* at <http://www.taoiseach.gov.ie/>
- Government of Ireland** (2007b) *National Action Plan for Social Inclusion 2007–2016.* <http://www.socialinclusion.ie/documents/NAPinclusionReportPDF.pdf>
- Government of Ireland** (2007c) *National Report for Ireland on Strategies for Social Protection and Social Inclusion, 2006-2008.*
- Gregory I.N., Dorling D. and Southall H.R.** (2001) 'A century of inequality in England and Wales using standardized geographical units' in *Area*, Vol. 33, No. 3:297-311.
- Haase, T.** (1998) 'The Role of Data in Policies for Distressed Areas', in *Integrating Distressed Urban Areas*, Paris: OECD.
- Haase, T. and Byrne, K.** (2007) *Divided City – The Changing Face of Dublin's Inner City.* Dublin: DICP (forthcoming).
- Haase, T. and McKeown, K.** (2003) *Developing Disadvantaged Areas through Area-Based Initiatives – Reflections on over a Decade of Local Development Strategies*, Dublin: Pobal.
- Haase, T., McKeown, K. and Rourke, S.** (1996) *Evaluation of the Global Grant in Ireland.* Dublin: Pobal.
- Haase, T. and Pratschke, P.** (2005a) *Deprivation and its Spatial Articulation in the Republic of Ireland – New Measures of Deprivation Based on the Census of Population, 1991, 1996 and 2002*, Dublin: Pobal. <http://www.pobal.ie/media/Deprivationanditsspatialarticulation.pdf>
- Haase, T. and Pratschke, P.** (2005b) *Community Uptake Analysis of PEACE II*, Belfast: SEUPB.
- Haase, T. and Walsh, K.** (2007) *Measuring Rural Deprivation – Literature Review and Issues Arising*, Report to the Rural Development Advisory Committee, Dublin: Pobal.
- Higgs, G. and White, S.** (2000) 'Alternatives to Census-based Indicators of Social Disadvantage in Rural Communities', *Progress in Planning*, 53, 1-81. Amsterdam: Elsevier.
- Kenway, P., Parsons, N., Carr, J. and Palmer, G.** (2005) *Monitoring poverty and social exclusion in Wales 2005.* York: Joseph Rowntree Foundation.
- Kok, W.** (2004) *Facing the Challenge*, Luxembourg: European Communities.
- Leavy, A.** (2001) *The Socio-Economic Sustainability of Rural Areas in Ireland*, Report No. 4497, Dublin: Teagasc.

- Lebel, L., Pampalon, R. and Villeneuve, P.Y.** (2007) 'A multi-perspective approach for defining neighbourhood units in the context of a study on health inequalities in the Quebec City region', in *International Journal of Health Geographics*, 2007, 6:27.
- MacDonald, M.** (2003) *Social Inclusion: Transport Aspects*, Centre for Transport Studies, Imperial College, University of Leeds.
- Madanipour, A.** (1998) 'Social Exclusion and space', in Madanipour, A., Cars, G. and Allen, J. (eds) *Social Exclusion in European Cities*. London: Jessica Kingsley Publishers.
- Nardo, M. et al.** (2005) *Handbook on Constructing Composite Indicators: Methodology and User Guide*, OECD Statistics Working Papers, 2005/3, OECD Publishing. doi:10.1787/533411815016.
- National Statistics Board** (2003) *Developing Irish Social and Equality Statistics to meet Policy Needs*. Dublin: NSB.
- NISRA** (2005) *Northern Ireland Multiple Deprivation Measure 2005*, Belfast: Northern Ireland Statistics and Research Agency.
- Noble M. et al.** (2000) *Measuring Multiple Deprivation at the Local Level: The Indices of Deprivation 2000*. London: Department of the Environment, Transport and the Regions.
- Noble M. et al.** (2001) *Measures of Deprivation in Northern Ireland*, Belfast: Northern Ireland Statistics and Research Agency.
- Nolan, B., Whelan, C.T. and Williams, J.** (1998) *Where are Poor Households? The Spatial Distribution of Poverty and Deprivation in Ireland*. Dublin: Oak Tree Press in association with Combat Poverty Agency.
- Nolan, B., Gannon, B., Layte, R., Watson, D., Whelan, C. and Williams, J.** (2002) *Monitoring Poverty Trends in Ireland: Results from the 2000 Living in Ireland Survey*. Dublin: Economic and Social Research Institute.
- ODFPM UK** (2004) *The English Indices of Deprivation 2004 (revised)*  
see <http://www.neighbourhood.gov.uk/default.asp>
- OECD** (1994) *Creating Rural Indicators*. Paris: OECD.
- Office of the Deputy Prime Minister, NI** (2002) *A Review of Urban and Rural Definitions: Project Report*.
- Palmer, G. and Rahman, M.** (2002) *Monitoring Progress on Poverty – A Guide on the Use of Social Inclusion Indicators*, Dublin: Combat Poverty Agency.
- Pion Economics** (2000) *Accounting for Rural Deprivation*. Final Report. Unpublished Study undertaken for Five Rural Councils in Scotland.
- Power, A. and Wilson, W.J.** (2000) *Social Exclusion and the Future of Cities*, Centre for the Analysis of Social Exclusion, CASE Paper 35, LSE, London.
- Power, J. and Johns, C.** (2005) *Quality of Life Research, Criteria and System*, Dublin: personal conference notes.
- Pringle, D.G. et al.** (1999) *Poor People, Poor Places*. Dublin: Oak Tree Press.

- Pursell, L., Kearns, N. and O'Donovan, D.** (2007) *Local Inequality Indicators for the Health and Well-Being of Ireland*. Dublin: Combat Poverty Agency.
- Robson, B., Bradford, M. and Tye, R.** (1995) *A Matrix of Deprivation in English Authorities, 1991*. Part 2 in Department of the Environment, UK (1995) cit. op.
- Robson, B., Bradford, M. and Deas, I.** (1994) *Relative Deprivation in Northern Ireland*. Manchester: Centre for Urban Policy Studies, Manchester University.
- Sabel, C.** (1996) *Ireland – Local Partnerships and Social Innovation*. Paris: OECD.
- SAHRU** (1997) *A National Deprivation Index for Health and Health Services Research*. Dublin: TCD.
- Salmond C., Crampton P. and Atkinson J.** *NZDep2006 Index of Deprivation*. Wellington: Department of Public Health, University of Otago Wellington, 2007.
- Scott, D.M. and Horner, M.W.** (2004) *Urban Form and Social Exclusion: An Exploratory Analysis in a U.S. Setting*. Centre for Spatial Analysis, McMaster University.
- Shucksmith, M. (2003)** *Social Inclusion in Rural Areas*. A Review of Recent Research. Report to DEFRA, Countryside Agency and ESRC.
- Social Exclusion Unit** (2002) *Making the Connections: Transport and Social Exclusion*, London: The Stationery Office.  
<http://www.cabinet-office.gov.uk/seu/publications/reports/html/making%20the%20Connections/>
- Stead, D.** (2002) *Urban Rural Relationships in Europe: Concepts and Definitions*. Working Paper 1, OTB Research Institute for Housing, Urban and Mobility Studies, Delft University of Technology.
- Townsend, P.** (1979) *Poverty in the United Kingdom, a Survey of Household Resources and Standards of Living*. London: Penguin Books and Allen Lane.
- Townsend, P., Phillimore, P. and Beattie, A.** (1988) *Health and Deprivation: Inequality and the North*. London: Croom Helm.
- Townsend** (1993) *The International Analysis of Poverty*. London: Harvester Wheatsheaf.
- Tunstall, R. and Lupton R. (2003)** *Is Targeting Deprived Areas an Effective Means to Reach Poor People? An assessment of one rationale for area based funding programmes*. CASE Paper 70, London School of Economics.
- United Nations** (1999) *World Urbanization Prospects, The 1999 Revision*, United Nations.
- Walsh, J. et al.** (1998) *Local Partnerships for Social Inclusion?* Dublin: Oak Tree Press.
- Watson, D. and Williams, J.** (2003) *Irish National Survey of Housing Quality 2001-2002*. Dublin: Department of the Environment, Heritage and Local Government, ESRI.
- Watson, D. et al.** (2005) *Mapping Poverty: National, Regional and County Patterns*. Dublin: Combat Poverty Agency, ESRI.



## **Appendix: Indicators used for the NI Measures of Multiple Deprivation**

### ***Income Deprivation***

• Adults and children in Income Support households (includes lone parents and Minimum Income Guarantee recipients) (2003, Source: DSD) • Adults and children in income based Job Seeker's Allowance households (2003, Source: DSD) • Adults and children in Working Families' Tax Credit households whose equivalised income (excluding housing benefits) is below 60 per cent of median before housing costs (2003, Source: Inland Revenue and DSD) • Adults and children in Disabled Person's Tax Credit households whose equivalised income (excluding housing benefits) is below 60 per cent of median before housing costs (2003, Source: Inland Revenue and DSD).

### ***Employment Deprivation***

• Unemployment claimant count (JUVOS) of women aged 18-59 and men aged 18-64 averaged over 4 quarters (2003, Source: DETI) • Incapacity Benefit claimants women aged 18-59 and men aged 18-64 (2003, Source: DSD) • Severe Disablement Allowance claimants women aged 18-59 and men aged 18-64 (2003, Source: DSD) • Participants in New Deal for Young People (18-24 years) who are not included in the claimant count (2003, Source: DEL) • Participants in New Deal for 25+ who are not included in the claimant count (2003, Source: DEL) • Invalid Care Allowance claimants women aged 18-59 and men aged 18-64 (2003, Source: DSD).

### ***Health Deprivation and Disability***

• Years of Potential Life Lost (1999 to 2003, Source: Mortality data, NISRA) • Comparative Illness and Disability Ratio (2003, Source: IS, AA, DLA, SDA, IB from DSD) • A combined measure of two indicators, (i) individuals suffering from mood or anxiety disorders, based on prescribing (2003, Source: CSA) and (ii) suicides (1999 to 2003, Source: NISRA) • People registered as having cancer (excluding non-melanoma skin cancers) (1999 to 2002, Source: Northern Ireland Cancer Registry).

### ***Education, Skills and Training Deprivation***

• GCSE/GNVQ points score (1999/2000 to 2001/2002, Source: School Leavers Survey, DE) • Key Stage 3 data (2002/2003, Source: DE) Note: Key Stage 3 assessment is based on formal tests taken by pupils at the end of KS3 (approximately age 14) in English (and Irish – in Irish medium schools/units), Mathematics and Science • Proportions of those leaving school aged 16 and not entering Further Education (1999/2000 to 2001/2002, Source: School Leavers Survey, DE) • Absenteeism at secondary level (all absences) (2001/2002 and 2002/2003 Source: SAER, DE) • Proportions of 17-20 year olds who have not successfully applied for Higher Education (1999/2000 to 2002/2003, Source: UCAS and DEL) • Proportions of Year 11 and 12 pupils not in a Grammar School (2003, Source: School Census, DE) • Proportions of post primary pupils with Special Educational Needs in mainstream schools (2002/2003 School Census, Source DE) • Proportions of working age adults (aged 25-59) in the area with no or low levels of qualification (2001, Source: Census, NISRA).

### ***Proximity to Services Deprivation***

• Road distance to a GP premises (2004, Source: CSA) • Road distance to an Accident and Emergency hospital (2004, Source: DHSSPS) • Road distance to a dentist (2004, Source: CSA) • Road distance to an optician (2004, Source: CSA) • Road distance to a pharmacist (2004, Source: CSA) • Road distance to a Job Centre or Jobs and Benefit office (2004, Source: DEL) • Road distance to a Post Office (2004, Source: Post Office Ltd) • Road distance to a food shop (2003, Source: Census of Employment) • Road distance to the centre of a settlement of 10,000 or more people (2004, Source: NISRA).

### ***Living Environment Deprivation***

• SOA level housing stress (2001, Source: SDRC and NIHE, modelled NIHCS) • Houses without central heating (2001, Source: Census, NISRA) • Household overcrowding (2001,

Source: Census, NISRA) • LGD level rate of acceptances under the homelessness provisions of the Housing (Northern Ireland) Order 1988 and the Housing (Northern Ireland) Order 2003, assigned to the constituent SOAs (2003, Source: NIHE) • SOA level local area problem score (2001, Source: SDRC and NIHE, modelled NIHCS).

***Crime and Disorder***

• Violence, robbery and public order (April 2002 to March 2004, Source: PSNI) • Burglary (April 2002 to March 2004, Source: PSNI) • Vehicle theft (April 2002 to March 2004, Source: PSNI) • Criminal damage (April 2002 to March 2004, Source: PSNI) • Malicious and deliberate primary fires (April 2002 to March 2004, Source: NIFB) • Disturbances (April 2002 to March 2004, Source: PSNI).