

Measures of Deprivation in Northern Ireland

Summary
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Introduction

In July 2000 the Department of Social Policy and Social Work at Oxford University was commissioned by the Northern Ireland Statistics and Research Agency to review and update the 1994 'Robson Measures' of Relative Deprivation.

The new Northern Ireland Measures of Deprivation comprise seven ward level Domain Deprivation Measures; a ward level Multiple Deprivation Measure; a supplementary ward level Child Poverty Measure; Income and Employment Deprivation Measures at Enumeration District (ED) level; an Economic Deprivation Measure at ED level; six Local Government District (LGD) level summaries of the ward level Multiple Deprivation Measure and two ward level summaries of the ED level Economic Deprivation Measure.

The research team commissioned to construct the Deprivation Measures comprised Michael Noble, George Smith, Gemma Wright, Chris Dibben, and Myfanwy Lloyd from the University of Oxford, with support from Ian Shuttleworth and the Centre for Spatial Territorial Analysis and Research at Queens University Belfast. Considerable additional support was given by NISRA and the project Steering Group. Further thanks are due to the team's statistical advisor Professor David Firth of Nuffield College Oxford and to Dr Tarani Chandola of University College London.

This Summary outlines the Domains and Indicators used for the new Measures of Deprivation for Northern Ireland. It also summarises the methodology used for combining the indicators into Domain Deprivation Measures and for combining the Domains into an overall ward level Multiple Deprivation Measure. The Local Government District level summaries of the ward level Multiple Deprivation Measure, and the ward level summaries of the ED level Economic Deprivation Measure are described.

The final report presents the domains and indicators for the new Northern Ireland Measures of Deprivation. It also sets out the methodology for combining the indicators into Domain Deprivation Measures and for combining the domains into an overall ward level Multiple Deprivation Measure (MDM). The final report also describes the results and presents maps of the domains and Multiple Deprivation Measure. The analysis is based on the Enumeration District, ward and Local Government District boundaries which were in place at the time of the 1991 Census. As far as has been possible, the indicators use data from 1999.

1: Domains and Indicators

The Northern Ireland Deprivation Measures are based on the premise that multiple deprivation is made up of separate dimensions, or 'domains' of deprivation. These domains reflect different aspects of deprivation. Each domain is made up of a number of indicators which cover aspects of this deprivation as comprehensively as possible. The criteria for selecting the indicators are that they should be statistically robust, up to date, available at a small area level for the whole of Northern Ireland and that they should directly measure a major aspect of the dimension of deprivation under consideration. This necessarily restricts the indicators which can be included. Nevertheless, this review has incorporated data sources hitherto unused for measuring deprivation. Each of the domains is measured at ward level, using the administrative boundaries as at the Census in 1991.

Denominators for the indicators were derived by the research team and this is described in detail in the full report.

The terminology used to describe the Measures of Deprivation changed between the project start and end, as a result of consultation. 'Domain Deprivation Measures', the 'Multiple Deprivation Measure' and 'Measures of Deprivation' were adopted in preference to 'Domain Indices', the 'Index of Multiple Deprivation' and the 'Indices of Deprivation' respectively.

The domains and indicators in the Multiple Deprivation Measure are as follows:

Income

Income Deprivation: Indicators

- Adults in Income Support households (DSD, August 1999)
- Children in Income Support households (DSD, August 1999)
- Adults in Income Based Job Seekers Allowance households (DSD, August 1999)
- Children in Income Based Job Seekers Allowance households (DSD, August 1999)
- Adults in Family Credit households (DSD, August 1999)
- Children in Family Credit households (DSD, August 1999)
- Adults in Disability Working Allowance households (DSD, August 1999)
- Children in Disability Working Allowance households (DSD, August 1999)

The purpose of this domain is to capture the extent of income deprivation in an area. This is a key deprivation. The domain is made up of non-overlapping counts of families in receipt of the means tested benefits listed above.

The proportion of children under 16 living in families reliant on these means tested benefits¹ has been separately presented as a supplementary Child Poverty Measure at ward level but it is not included in the overall Multiple Deprivation Measure as the children are already counted within the Income Domain.

Employment

Employment Deprivation: Indicators

- Unemployment claimant counts of those aged under 60 (average of four quarterly extracts) (DETINI)
- Incapacity Benefit recipients aged under 60 (DSD, August 1999)
- Severe Disablement Allowance recipients aged under 60 (DSD, August 1999)
- New Deal participants not included in the unemployment claimant count (DHFETE, August 1999)

This domain seeks to measure enforced exclusion from the world of work. The domain does not seek to capture income deprivation to which joblessness leads, since this is tackled in the Income Domain. 'Employment deprived' are thus defined as those who want to work but are unable to do so through unemployment, sickness or disability. The indicators in this domain constitute non overlapping counts of those excluded from the labour market through unemployment, ill health or disability.

Health Deprivation and Disability

Health Deprivation and Disability: Indicators

- Standardised Mortality Ratios for men and women at ages under 75 (NISRA, 1995 to 1999)
- People receiving one or more of Attendance Allowance or Disability Living Allowance or Incapacity Benefit or Severe Disablement Allowance (DSD, August 1999)
- People registered as having cancer (excluding non-melanoma skin cancers). (Northern Ireland cancer registry, 1993 to 1996)
- Proportion of all 12 to 17 year olds with extractions and registered with a GDS dentist, and those not registered with a GDS dentist (CSA, September 2000)
- Drugs prescribed for depression or anxiety (CSA, August 2000)

This domain identifies areas with people whose quality of life is impaired by poor health and/or disability or whose life is cut short by premature death. While ill health

¹ Unfortunately children under 16 living in JSA(IB) families could not be distinguished from all dependant children living in such families. In consequence the numbers of children under 16 living in JSA(IB) families were calculated as 90% of all dependant children living in such families. This proportion was derived from the ratio in Great Britain.

is closely intertwined with other aspects of deprivation, it is also a significant aspect of deprivation in its own right. This domain importantly includes a measure of mental health for the first time.

Education, Skills and Training

Education, Skills and Training Deprivation: Indicators

- Working age adults with no qualifications (1996-1999 aggregated LFSLA data at LGD level modelled to wards)
- Proportions of those leaving school aged 16 and not entering Further Education (School Leavers Survey, 1996/7 - 1998/9, DE)
- Proportions of 17-20 year olds who have not successfully applied for Higher Education (1997-9, UCAS)
- GCSE/GNVQ performance data points score and no qualifications (School Leavers Survey, 1996/7 - 1998/9, DE)
- Absenteeism at secondary level (all absences) (School Performance Survey, 1998-1999, DE)
- Proportions of Years 11 and 12 pupils not in a grammar school (1999 School Census, DE)

The central purpose of the Education Domain is to measure in as consistent a way as possible the key *educational* characteristics of the local area that might contribute to the overall level of deprivation and disadvantage. This is captured by indicators which show the lack of qualifications of the adult population and the children in the area. In addition measures of participation in post-school age education are included.

Geographical Access to Services

Geographical Access to Services: Indicators

- Access to a post office (General Post Office Counters, August 2000)
- Access to a GP Surgery (CSA, June 1999)
- Access to an Accident and Emergency hospital (CSA, March 1997)
- Access to a dentist (CSA, June 1999)
- Access to an optician (CSA, June 1999)
- Access to a pharmacist (CSA, June 1999)
- Access to a library (Education and Library Boards, November 2000)
- Access to a museum (Northern Ireland Museums Council, February 2001)
- Access to a Social Security Office or a Training and Employment Agency (DHFETE, 2001)

The purpose of this domain is to measure the extent to which people have poor geographical access to certain key services. Lack of access to services can affect

people in all types of area. Some of the services: GPs, A&E Hospitals and Pharmacists have each been given a 'double weight'.

Social Environment

Social Environment: Indicators

Recorded offences relating to:

- Burglary in a dwelling
- Violence against the person (excluding assaults)
- Common assaults
- Serious assaults
- Theft of a vehicle
- Theft from a vehicle
- Criminal damage
- Burglary in a building other than a dwelling
- Drug offences

(All data from RUC, 1998/1999 and 1999/2000)

- Local Area Problem Score generated from data on:
Graffiti, Scruffy/neglected buildings, Scruffy gardens/landscaping,
Litter/rubbish/dumping and Vandalism (1996 Northern Ireland House Condition Survey)

This domain seeks to measure deprivation in the social environment. Indicators about crime and local area problems have been combined to measure local conditions that reduce the quality of life.

Housing

Housing Stress: Indicators

- Housing in disrepair (1996 Northern Ireland House Condition Survey)
- Houses without central heating (1996 Northern Ireland House Condition Survey)
- Houses lacking insulation (1996 Northern Ireland House Condition Survey)

This domain seeks to identify areas of unsatisfactory housing by using indicators of 'housing stress'. This conceptualisation of the Housing Domain considers the condition of the housing itself, rather than the status of the occupants. The Northern Ireland House Condition Survey contains the most up to date data on poor quality housing available for the whole of Northern Ireland.

2: Methodology

Combining the Indicators to form Domain Deprivation Measures

Indicators for all seven domains were produced at ward level. In some wards small ‘at risk’ populations can result in unreliable figures. In the Health Deprivation and Disability, Education, Skills and Training, Social Environment and Housing Domains the problem of small numbers, and unreliable scores was addressed by a technique known as ‘shrinkage estimation’. This makes the unreliable ward scores more reliable by ‘borrowing strength’ from the LGD mean (which may be more, or less, deprived). In practice, shrinkage only has a measurable impact where the population at risk is small. This is because the standard errors are more likely to be large in areas with small populations. In the Income, Employment and Geographical Access to Services Domains, it was not necessary to use the shrinkage technique.

The indicators in each domain were combined to create a Domain Deprivation Measure, and the seven Domain Deprivation Measures, (Income, Employment, Health Deprivation and Disability, Education, Skills and Training, Housing, Social Environment and Geographical Access to Services) were combined to make the overall ward level Multiple Deprivation Measure. The supplementary Child Poverty Measure was also constructed at ward level. The indicators all measure deprivation independently of population size.

For the Income and Employment Domains the Domain scores are presented as a simple rate, using appropriate denominators, as these domains present the percentage of the relevant population affected by this type of deprivation. This is also the case with the Child Poverty Measure.

Where there are several indicators within a single domain that have different underlying metrics and cannot therefore be straightforwardly combined i.e. in the Health, Education, and Social Environment Domains, a statistical procedure, factor analysis, was used to identify weights for each indicator. The domain score is then a combination of the component indicators weighted according to the factor analysis results.

The Housing Domain was constructed by attributing ‘points’ to houses on the basis of characteristics presented in the House Condition Survey. These points were then summed and these case scores were then aggregated to ward level and expressed as a proportion of the maximum possible score. Shrinkage estimation was applied to this score to create the final domain score. The indicators in the Access Domain were combined using selected weights.

Combining the Domain Deprivation Measures into an Overall Ward Level Multiple Deprivation Measure

Once the seven separate domain scores for every ward had been calculated these were combined into an overall Multiple Deprivation Measure. As with the indicators, the domains could not simply be added because they are not all on the same scale. Thus, in order to combine the domains, they were converted or **standardised to a uniform metric**. This was achieved by ranking the domain scores. Having standardised the domains, they then had to be 'transformed'.

Transformation is required to ensure that each domain is **transformed to a common distribution**. This is necessary because if domains were combined with different distributions this would result in misleading results with some domains having unanticipated disproportionate effects on the overall MDM score. Transformation is also necessary so that a desired degree of 'cancellation' can be introduced when combining the domains. The aim was to ensure that when combining domains, the deprivation in one domain is not fully 'cancelled out' by lack of deprivation in another domain. Having considered other options, it was decided that the exponential transformation of the ranks was most suitable for this purpose.

The exponential distribution has a number of properties. First it transforms each domain so that they each have a common distribution, the same range and identical maximum/ minimum value, so that when the domains are weighted and combined into a single Multiple Deprivation Measure, the impact of the weights is absolutely clear and explicit. Second, it is not affected by the size of the ward's population. Third, it emphasises the most deprived 'tail' of the distribution in each domain. Fourth, it enables one to determine the desired cancellation properties.

Domain Weights

The Domain Deprivation Measures must be combined in such a way that their weights are explicit. The exponential transformation procedure ensures that the domains can be combined without 'hidden' weights. It would be inappropriate simply to sum the standardised Domain Deprivation Measures because this would give each Domain equal weight.

The criteria for selecting a set of weights for the standardised domains are as follows:

- The importance of their contribution to an overall concept of multiple deprivation
- Robustness of the indicators comprising the domain

The Income and Employment Domains were regarded as the most important contributors to the concept of multiple deprivation and the indicators comprising the domains were very robust. Hence it was decided that they should carry more weight than the other domains. The weightings of the domains is supported by the research team's work, the consultation process and, where available, the wider academic literature. As a result of these two criteria the weights selected are as follows:

- Income 25%
- Employment 25%
- Health Deprivation and Disability 15%
- Education, skills and training 15%
- Geographical Access to Services 10%
- Social Environment 5%
- Housing 5%.

These weights were applied to the domains accordingly and the weighted domains were summed to generate the overall Multiple Deprivation Measure.

3: Presenting the Results, Interpretation and Guidance

Ward level presentations

At the ward level there are nine Deprivation Measures for each ward in Northern Ireland: seven Domain Deprivation Measures (which are combined to make the overall Multiple Deprivation Measure); an overall Multiple Deprivation Measure and a supplementary Child Poverty Measure. These nine Measures each consist of a score and rank. There are 566 wards in Northern Ireland. The most deprived ward for each Measure is given a rank of 1, and the least deprived ward is given a rank of 566. The ranks show how a ward compares to all the other wards in Northern Ireland and are easily interpretable. However, the scores indicate the distances between each rank position, as these will vary.

The seven Domain Deprivation Measures

Each Domain Deprivation Measure consists of the combined indicators in that domain. The scores produced by this combination are then ranked. These Domain Deprivation Measures can be used to describe each type of deprivation in an area. This is important as it allows users of the Deprivation Measures to focus on particular types of deprivation, and to compare this across wards. There may be great variation within an LGD, and the ward level Domain Deprivation Measures allow for a sophisticated analysis of deprivation information.

The scores for the Income and Employment Deprivation Measures are rates. So for example if a ward scores 35.1 in the Income Domain, this means that 35.1% of the ward's population are Income deprived. The same applies to the Employment Domain. The scores for the remaining five domains are not rates. Within a domain, the higher the score, the more deprived the ward. However, the scores should not be compared between domains as they have different minimum and maximum values, and ranges. To compare between domains, the ranks should be used.

The overall Multiple Deprivation Measure

The overall Multiple Deprivation Measure describes the ward by combining information from all seven domains: Income, Employment, Health, Education, Housing, Access and Social Environment. These were combined in two stages; first each domain was ranked and then transformed to an exponential distribution as described above. Then the domains were combined using the explicit domain weights chosen. The overall ward level Multiple Deprivation Measure is ranked in the same way as the Domain Deprivation Measures.

The Multiple Deprivation Measure's score is the combined sum of the weighted, exponentially transformed rank of the domain score. Again, the bigger the Multiple Deprivation Measure score, the more deprived the ward. However, because of the exponential distribution, it is not possible to say, for example, that a ward with a score of 40 is twice as deprived as a ward with a score of 20. In order to make comparisons between wards the ranks should be used. However, it is not possible to say that Ward X with a rank of 100 is twice as deprived as Ward Y with a rank of 200. The most

deprived ward according to the Multiple Deprivation Measure is assigned a rank of 1, and the least deprived ward, a rank of 566.

The supplementary Child Poverty Measure

The Child Poverty Measure is a subset of the Income Domain Deprivation Measure, and shows the percentage of children under 16 in each ward that live in families that claim certain means tested benefits (Income Support, Job Seekers Allowance (Income Based), Family Credit and Disability Working Allowance). The Child Poverty Measure is not combined with the other domains into the overall Multiple Deprivation Measure. A Child Poverty Measure score of e.g. 24.6 means that 24.6% of 0-15 year olds in that ward are living in families claiming the means tested benefits listed. Again, the most deprived ward according to the Child Poverty Measure is assigned a rank of 1, and the least deprived ward, a rank of 566.

ED level presentations

ED level Domain Deprivation Measures have been constructed for the Income and Employment Domains. In addition, an Economic Deprivation Measure has been created by combining the Income and Employment Domains at ED level with equal weights. This has been summarized at ward level.

LGD level presentations of the ward level Multiple Deprivation Measure

The Multiple Deprivation Measure is constructed at ward level. However, six measures at LGD level have been devised to summarise this ward level information.

LGDs are complex to describe as a whole or to compare for several reasons. First, LGDs can vary in population size. Further, some LGDs may have a less homogenous population, containing more variation in deprivation, for example deprivation may be concentrated in severe pockets rather than being more evenly spread. This makes an 'overall picture' more difficult to establish. All areas experiencing high levels of deprivation will be identified by one or more of these six measures, as they are designed to capture deprivation in areas of different sizes with different levels of heterogeneity.

Six measures have been devised to take account of these issues. They all describe the LGD in different ways: looking at the most deprived populations, the most deprived wards, the deprived 'hot spots', as well as the average of the wards, to get six meaningful descriptions of deprivation at LGD level. More subtle descriptions of deprivation across an LGD can be established by a close analysis of the wards and EDs within that LGD, as the ward and ED level Deprivation Measures contain more detailed accounts of local deprivation.

The summary measures of the Multiple Deprivation Measure at LGD level describe multiple deprivation within each authority and the differences between LGDs. All of the summary measures need to be considered together to give a full description of an

area's deprivation. Given the different patterns of deprivation within LGDs, it is important to have a variety of measures to capture this variation.

There are 26 LGDs in Northern Ireland. For each measure each LGD is given a rank and score (with the exception of Extent, as explained below). For presentation, a rank of 1 indicates that the LGD is the most deprived according to the measure, and 26 is the least deprived.

The measures are population weighted by the ward populations for the LGD (except for the two Scale measures which are in the form of a simple count).

Local Concentration

The population weighted average of the ranks of an LGD's most 'multiply' deprived wards that contain exactly 10% of the LGD's population.

Local Concentration is an important way of identifying LGDs' 'hot spots' of deprivation. It highlights the most deprived wards in an LGD. These need not be contiguous but may comprise pockets of deprivation which can be seen from the ranks of the ward level Multiple Deprivation Measure. The Local Concentration measure defines the 'hot spots' by reference to a percentage of the LGD's population. The average of the population weighted ranks of an LGD's most deprived wards that capture *exactly* 10% of the LGD's population was selected. In many cases this was not always a whole number of wards. The population weights were calculated by determining the proportion that each of these selected wards contributed to the 10% (of the LGD's total population). For the purpose of *calculating* this score the wards are ranked such that the most deprived ward is given a rank of 566. Having calculated this measure, the scores are ranked, with a rank of 1 for the most deprived LGD.

Extent

Proportion of an LGD's population living in wards which rank within the most 'multiply' deprived 10% of wards in Northern Ireland.

The aim of this measure is to portray how widespread *high levels* of deprivation are in an LGD. It only includes LGDs which contain wards which fall within the top ten percent of the most deprived wards in Northern Ireland. Therefore some LGDs will not have an overall score for this measure and will be given an equal 'least deprived' rank. The Extent measure is the proportion of an LGD's population living in the wards which rank within the most deprived 10% of wards in Northern Ireland on the Multiple Deprivation Measure. The LGD scores are ranked in descending order, so the LGD with the highest percentage is given a rank of '1'.

Scale (two measures)

Income Scale is the number of people who are Income deprived; Employment Scale is the number of people who are Employment deprived.

These two measures show the sheer numbers of people experiencing Income deprivation and Employment deprivation at the LGD level.

Income Scale is a count of the number of people in each LGD who are included in the Income Domain i.e. the sum of the ward level numerators. This captures all people dependent on IS, JSA(IB), FC and DWA.

Employment Scale is a count of the number of people in each LGD who are included in the Employment Domain i.e. the sum of the ward level numerators. This captures the unemployment claimants, IB or SDA recipients aged 16-59 and New Deal participants not included in the unemployment claimant count.

The Deprivation Measures have been created in such a way as to be independent of population size. However, these two measures will identify LGDs with large numbers of people experiencing these deprivations. It is important to note that the scale measures do not pick up large populations, but large *deprived* populations. If two LGDs have the same percentage of Income deprived people, the larger LGD will be ranked as more deprived in the Income Scale measure because more people are experiencing the deprivation.

Average of ward ranks

Population weighted average of the combined Multiple Deprivation Measure ranks for the wards in an LGD.

This measures the LGD as a whole, including both deprived and less deprived wards. All the wards in an LGD need to be included to obtain an average, as each ward contributes to the character of that LGD. For the purpose of *calculating* this score the wards are ranked such that the most deprived ward is given the rank of 566. The ward ranks are population weighted within an LGD to take account of the fact that ward size can vary significantly in that LGD. The LGD scores are ranked in descending order, and the most deprived LGD (which has the largest score) is given a rank of '1' for presentation.

Average of ward scores

Population weighted average of the combined Multiple Deprivation Measure scores for the wards in an LGD.

This measure also describes the LGD as a whole, taking into account the full range of ward scores across an LGD. **The advantage of the Average of Ward Score measure is that it describes the wards by retaining the fact that the more deprived wards may have more 'extreme' scores, which are not revealed to the same extent if the ranks are used. This means that the more deprived ward scores will not be moderated to the same extent by the less deprived ward scores as they are for the Average of ward ranks measure.** This measure is calculated by averaging the ward scores in each LGD after they have been population weighted.

Presentations of the ED level Economic Deprivation Measure

The Economic Deprivation Measure has been summarized at ward and LGD level.

Economic Deprivation Extent

Proportion of a ward's population living in EDs which rank within the most Economically deprived 10% of EDs in Northern Ireland.

The aim of this measure is to portray how widespread *high levels* of economic deprivation are in a ward. It only includes wards which contain EDs which fall within the top ten percent of the most Economically deprived EDs in Northern Ireland. Therefore some wards may not have an overall score for these measures and would be given an equal 'least deprived' rank. The Extent measure is the proportion of a ward's population living in the EDs which rank within the most deprived 10% of EDs on the Economic Deprivation Measure in Northern Ireland. The ward level summary of the ED level Economic Deprivation Measure is calculated in the same way as the LGD level summary of the ward level Multiple Deprivation Measure, with the ED level populations used instead of the ward population. For this measure a rank of 1 was given to the ward which was the most deprived.

Local Concentration for the ED level Economic Deprivation Measure

The population weighted average of the ranks of a ward's most Economically deprived EDs that contain 10% of the ward's population (or the whole most deprived ED if this contains more than 10% of the ward's population).

Local Concentration is an important way of identifying a ward's 'hot spots' of deprivation. It highlights the most deprived EDs in a ward. These need not be contiguous but may comprise pockets of deprivation which can be seen from the ranks of the ED level Economic Deprivation Measures. It is calculated in the same way as the LGD Local Concentration summary measure.

For this measure a rank of 1 was given to the ward which was the most deprived.

Guidance

The Multiple Deprivation Measure is a new source of valuable information about spatial patterns of deprivation in Northern Ireland. Seven Domain Deprivation Measures have been constructed at ward level; a ward level overall Multiple Deprivation Measure; a supplementary Child Poverty Measure at ward level; two ED level Income and Employment Domain Deprivation Measures; an ED level Economic Deprivation Measure; six LGD level summaries of the ward level Multiple Deprivation Measure, and two ward level summaries of the ED level Economic Deprivation Measure. These can all be used to help focus policy and intervention on deprived areas and particular types of deprivation.

Using Scores and Ranks

As outlined above, it is valid to compare wards *within* a domain using either the score or the rank. For example, it is valid to say that Ward A has a score of 29.92 and Ward B a score of 6.87 in the Income Domain, ranking 152 and 538 respectively, and that Ward A is more deprived than Ward B.

However, when comparing a ward *between* domains, ranks should be used. It is not appropriate to compare Ward A's score of 29.92 in the Income Domain and its score of 2.54 in the Health Domain. This is the case for all of the domains because the range and the minimum and maximum scores vary.

For the overall Multiple Deprivation Measure, wards can be compared using either the scores or ranks. But again, for any given ward, the MDM cannot be compared to other domains using the score: only the rank should be used.

Because the Income and Employment Domain scores are rates, it is possible to say that Ward X with a score of 40% in the Income Domain is twice as deprived as Ward Y with a score of 20% in the Income Domain. However, in the five other Domains, it is **not** possible to do this, as the scores are not rates. The domain ranks cannot be described in this manner either and it is not possible to say that Ward X with a rank of 100 is twice as deprived as Ward Y with a rank of 200.

Using individual Domain Deprivation Measures and the overall Multiple Deprivation Measure

Individual Domain Deprivation Measures can be used to identify particular types of deprivation. For example, it is possible to describe an LGD's wards solely in terms of its Health deprivation. The ward level Multiple Deprivation Measure's main purpose is to describe the overall picture of multiple deprivation, based on the combined Income, Employment, Health, Education, Geographical Access to Services, Social Environment and Housing Domain Deprivation Measures.

Comparing different wards using individual Domain Deprivation Measure ranks and Multiple Deprivation Measure ranks

The individual Domain Deprivation Measures and the Multiple Deprivation Measure can be used to make comparisons between wards across Northern Ireland. For example, it is possible to say that 11 wards in LGD A are ranked in the most deprived 50 in the Income Domain compared with 0 wards in LGD B in the Income Domain.

Comparing the Domain Deprivation Measures in a single ward

It is valid to describe a ward in terms of more than one domain, and this will usually be entirely appropriate. For example, Ward A has a rank of 41 for the Income Domain and a rank of 23 for the Health Domain. However, these two pieces of information cannot be combined to make a single score or rank: the only accepted combination of the Domain Deprivation Measures is the ward level Multiple Deprivation Measure which incorporates all seven Domain Deprivation Measures. This is because combining the Domain Deprivation Measures selectively does not take into account the compensation between domains, and the domain weights which were carefully selected and consulted upon during the construction of the Multiple Deprivation Measure.

Re-ranking within an LGD

The ward ranks within an LGD for the Domain Deprivation Measures and the overall Multiple Deprivation Measure are the Northern Ireland ranks. LGDs may wish to re-rank the wards within their own area for local purposes e.g. an LGD with 21 wards might find it easier to use the Measures by ranking their own wards 1 through 21.

Adding new data to the Domain Deprivation Measures and the overall Multiple Deprivation Measure

Supplementary information cannot be incorporated into the Domain Deprivation Measures and the Multiple Deprivation Measure as they are constructed using agreed data sources from fixed points in time. However, additional information e.g. data from Community Audits, can of course be presented alongside the results to reach targeting or other decisions.

Summarising the overall Multiple Deprivation Measure at LGD and other levels

The Multiple Deprivation Measure can be summarised at LGD level (see above). It can also be summarised for other area units, so long as they are made up of whole wards with 1991 boundaries.

Domain Deprivation Measures and Domain Weights

The domain weights have been agreed through a process of consultation. Combining the Domain Deprivation Measures using alternative weights should not be undertaken. Similarly, none of the Domain Deprivation Measures should be removed from the Multiple Deprivation Measure. Multiple deprivation must take account of the substantial range of domains included in the Multiple Deprivation Measure.

4: Consultation

Throughout the development of the new Measures of Deprivation for Northern Ireland, the research team have welcomed the very useful process of consultation which has been undertaken. This has taken several forms.

First, there has been a widespread consultation with statutory bodies, voluntary and community organisations through a series of seminars. Members of the research team and NISRA gave presentations in Belfast in July 2000, Lurgan in September 2000, Derry in October 2000, and Omagh in November 2000. These allowed interested groups, such as NICVA, the Housing Executive, and NIPSA, to have the opportunity to participate in early discussions regarding the conception and construction of the new Measures of Deprivation.

Second, a website was set up for project. This described the project and held documents for downloading. In addition a dedicated email address was distributed, through which a number of suggestions and useful comments were received by the research team. Three newsletters were produced by the research team to inform interested groups about the review process. All three newsletters were made available on the website.

Third, NISRA gave several presentations about the project to a number of members of the Northern Ireland Executive, Departmental committees and political parties.

Fourth methodological issues were explored at a meeting organized by the local group of the Royal Statistical Society in Belfast on 24th November 2000 following a presentation by the research team. Following the meeting a working paper on the proposed Measures of Deprivation methodology was posted on the project website.

The research team has also been supported by a Steering Group containing experts from NISRA, central and local government, the voluntary sector and the Equality Commission. This group has reviewed the consultations, and advised on data collection, on the development of the deprivation indicators and on the completion of the final Measures of Deprivation and report.