

## **MEASURING DEPRIVATION IN SCOTLAND: SCOTTISH EXECUTIVE RESPONSE**

### **1. Background**

1.1.1 In December 2002, the Scottish Executive's Central Statistics Unit commissioned the Scottish Centre for Research on Social Justice to make recommendations for developing a long-term strategy for measuring deprivation in Scotland. The project had 3 main objectives:

- To provide a clear definition and conceptual basis for measuring deprivation. This included considering how the term deprivation related to others used to refer to social needs, such as poverty, social exclusion and social justice.
- To set out a long-term strategy for measuring area deprivation, building on the Scottish Index of Multiple Deprivation 2003, which the Executive published in February 2003.
- To explore approaches to measuring deprivation for individuals. This included consideration of whether individual-based measures should be developed as replacements for area-based measures, or in addition to them.

1.1.2 The Executive published the project's interim report in May 2003 (see <http://www.scotland.gov.uk/stats/neighbours/tables/depinterim.pdf>). The researchers then undertook consultation on the interim report: this included 3 open meetings in Edinburgh, Glasgow and Inverness. A number of organisations expressed views on the issues which the interim report raised.

1.1.3 The final report (see <http://www.scotland.gov.uk/library5/social/mdis-00.asp>) makes a number of recommendations for the Executive to consider in developing its strategy. This document sets out the Executive's response to these recommendations and outlines its initial views on the timescale for implementing them. A detailed list of the recommendations, with the Executive's comments, is given in Annex A of this paper (pages 6 +).

## **2. The Executive response**

### **2.1 General**

2.1.1 The Executive welcomes the final report. It provides a sound basis for developing a strategy for measuring deprivation. It will be of use not just to the Executive and other agencies whose interest is in measures for the whole of Scotland, but to other organisations, including community planning partners, with a more local focus. Area based measures of deprivation, such as the 2003 Scottish Index of Multiple Deprivation, are well-established, and the report provides a sound basis for their further development to support area regeneration initiatives. Other approaches, in particular, measuring deprivation at an individual level, are a more recent development. We should aim to incorporate what are currently innovative methods into our longer term strategy, if we are to increase our understanding of all aspects of deprivation. However, these will take some years to develop and consolidate into our regular and routine measures.

2.1.2 The Executive accepts all of the recommendations in principle, including those on

- definitions and conceptual framework (R2.1, R2.2),
- developing individual and area-based approaches (R3.1 - R3.5),
- the Scottish context (R4.1, R4.2), the development of individual measures (R6.1 - R6.7) and
- relationships with other measures (R7.1, R7.2).

2.1.3 However, as noted in above, some of recommendations, in particular, those on individual-based measures of deprivation, will take several years to develop and thinking may evolve over that period. The Executive believes that there is scope to bring the area- and individual-based measures into a common framework, based on Townsend's definition, and will consider this again during the development of the individual-based measures. In implementing the recommendations, the Executive will need to take into account practical considerations such as ensuring the confidentiality of individuals, data quality and costs.

2.1.4 The Executive will implement the recommendations for drawing on work elsewhere in the UK (R4.1) and considering relationship with other measures (R7.1, DWP and R7.2 Eurostat) as part of its ongoing programme.

### **2.2 Area-based measures**

The Executive has already indicated that it will produce a 'final' area-based measure, building on the Scottish Index of Deprivation 2003, in spring 2004. This will be used as a basis for defining the most disadvantaged areas for the Closing the Opportunity Gap indicators". The 2004 area based measure will use the most up-to-date data, which will, where possible, be for 2002, or from the 2001 Scottish Census of Population.

2.2.1 The Executive accepts in principle the recommendations in 5.1 to 5.8, and in particular, that it should develop a national area deprivation index based on domains for:

- current income,
- other financial resources, (1)
- housing,
- health,
- education,
- crime and social order, (1)
- physical environment, (1)
- geographic access to services and telecommunications and
- social relations and social capital (1).

(1) not by 2004

However, it will not be possible to include all of these domains in the 2004 area-based measure.

2.2.2 The Executive notes the points made by the researchers, based on the conceptual framework, about the inclusion of the employment domain in the area-based measure. However, the Executive considers that an employment domain should be retained, that it should measure 'exclusion from the world of work' and that it should continue to be measured using benefits data (R5.1.6). In future, it should move to measuring long-term or persistent unemployment. The definition of 'long term unemployed' will be consistent with that used in other policy.

2.2.3 For the 2004 area-based measure, the Executive plans to

- move to the use of data zones as the geographic analysis unit, with a fall-back position of using wards (R5.3)
- publish of as many of the individual indicators as possible (R5.5), subject to resolving issues of confidentiality of individuals with the data owners. The indicators will be released through Scottish Neighbourhood Statistics
- include a housing domain using 2001 Census data on physical conditions and overcrowding, and data on the origins of homeless people applying to local authorities (R5.1.3)
- extend the Comparative Mortality Factor to cover the population over 75 and adopt Census data on limiting long-term illness as the basis of the Comparative Illness Factor (R5.1.4)
- base examination performance data on average results for 2000-2002 and incorporate information on qualifications of the adult population from the 2001 Census (R5.1.5)
- change the choice of services included in the geographic access to services and telecommunications and measure drive times rather than drive distances (R5.1.9)

2.2.4 There are a number of issues to resolve in sourcing and releasing data for a geography the size of data zones. In particular, the confidentiality of individuals must be protected. If the Executive is unable to resolve these issues in time to ensure the release of the 2004 area-based measure based on data zones in spring 2004, it will use wards as the analysis unit.

2.2.5 It is unlikely that the Executive can commission further work to improve the 'shrinkage' technique in time for the 2004 area-based measure, but it will reconsider the use of factor analysis for combining indicators into domain scores.

2.2.6 The Executive expects to produce the next update of the area-based measure in October 2006 and thereafter at 3 yearly intervals.

2.2.7 The Executive will aim to include the following recommended changes in the 2006 update, though it is possible that some will require a longer timescale:

- improvements to the 'shrinkage' technique, depending on the outcome of research (R5.8)
- introduction of adjustments to benefits data for differential take-up, depending on the outcome of research, and changes to tax/benefit system (R5.1.1)
- introduction of the other financial resources domain (R5.1.2)
- revised housing domain to use data developed through Scottish Neighbourhood Statistics (R5.1.3). Measures of the physical condition of the stock should take into account the proposed Scottish Social Housing Standard (see <http://www.scotland.gov.uk/consultations/housing/mssh-03.asp>) and any other current guidance on housing standards.
- introduction of adjustment of health indicators for control for population structure, depending on the outcome of research (R5.1.4)
- inclusion a measure of school attendance which uses individual pupil level data (R5.1.5),
- introduction of crime and social order domain (R5.1.7)
- introduction of the physical environment domain (R5.1.8). There are links to developing measures of environmental justice which should be considered
- inclusion of geographic access to employment and measures of availability of the communications infrastructure (R5.1.9).

2.2.8 Post 2006, there would be further enhancements in the domains of health, education skills and training, and geographic access to services and telecommunications, as required, and the social capital domain would be introduced.

2.2.9 The implementation of recommendations R5.6, on updating the indicator set periodically, and R5.7, introducing changes to the weights, will reflect the planned 3 yearly schedule of updates.

### **2.3 Other approaches to measuring deprivation**

2.3.1 The Executive accepts the usefulness of the 'life stages' approach, and will aim to produce a first version of this in late 2004 (R5.4).

2.3.2 There is a considerable lead time for survey development: this suggests that the soonest that the individual based approach could be introduced is 2006 and that 2007/8 may be more realistic.

2.3.3 The Executive believes that it would be best to release area-based and individual-based measures simultaneously, and these should relate to the same time period. This suggests that the updates to the standard for individual-based measures would be at 6 yearly intervals, rather than the 5 proposed in R6.7.

## **2.4 Other points**

2.4.1 The Executive plans to undertake the work on measure of deprivation in-house from now on. The work programme will be informed by input from research, academics and others as required.

2.4.2 The Executive intends to release future measures of deprivation as National Statistics, beginning with 2004 area-based Index.

## Measuring Deprivation in Scotland: detailed recommendations

### 1. Definitions and Conceptual framework

We recommend that the Executive

- R2.1 - adopts the definition of deprivation set out by Townsend as the starting point for its work
- The Executive accepts this recommendation. There are no implications for the forward programme of work to develop deprivation measures.
- R2.2 - recognises that poverty or lack of financial resources is the central cause of deprivation and that both should be captured in deprivation measures.
- The Executive generally accepts this recommendation, but considers there may be a need to also consider other causes. There are no implications for the forward programme of work to develop deprivation measures.

### 2. Individual and area approaches

We recommend that the Executive

- R3.1 - develops both individual and area based measures of deprivation, as these are complementary rather than alternative approaches
- The Executive accepts this recommendation. There are no implications for the forward programme of work to develop deprivation measures.
- R3.2 - recognises that the two measures need to be based on rather different conceptual bases and adopts the conceptual framework for individual and area measures set out
- The Executive generally accepts this recommendation, but considers it may be possible and desirable to bring the conceptual frameworks into greater alignment. This will be reviewed during the introduction of the individual-based approach. There are no short-term implementation implications for the area-based measures.
- R3.3 - uses a household survey approach to measuring individual deprivation
- The Executive accepts this in principle, but recognises that the lead time for survey development means that it is unlikely that this can be introduced quickly. It will be considered along with other aspects of the Executive's programme of surveys and other social research. Costs will be an important consideration.
- R3.4 - continues to monitor developments in linking data from existing administrative sources as a possible means of measuring individual deprivation in future
- The Executive accepts this recommendation and will build it in to its on-going work programme. However, issues such as individual confidentiality make it likely that progress will not be possible in the near future.

R3.5 - takes the recommended steps to ensure that comparisons can be made between individual and area-based measure on a valid basis. The Executive accepts this recommendation.

### **3. Scottish Context**

We recommend that the Executive

R4.1 - continues to draw on work on deprivation undertaken in the rest of Britain, given the fundamental similarities between Scotland and the rest of Britain in terms of the nature of deprivation, its underlying causes, social perceptions of the minimum acceptable standards and the institutional context. The Executive accepts this recommendation, which it will progress as part of its ongoing liaison with the other administrations. It will consider whether more formal arrangements for co-ordination of work on deprivation are desirable.

R4.12 - continues its approach of developing measures of deprivation which cover the whole of Scotland. The Executive accepts this recommendation. There are no implementation implications.

#### 4. Developing area-based measures

We recommend that the Executive

R5.1 - develops a national area deprivation index based on domains for: current income, other financial resources, housing, health, education, crime and social disorder, physical environment, geographic access and telecommunications, and social relations and social capital.

The Executive accepts this recommendation in principle. It will work to phase in the full set of domains as soon possible, but this is unlikely to be before 2006 and may take longer.

R5.2 - makes the detailed changes to the relevant indicators specified in Section 5.1 and follows up on longer term actions

Responses are set out in the following section.

R5.3 - retains the use of wards for now but looks at moving to smaller "data zones" in future, possible using a two-tier approach

The Executive will aim to move to data zones as the analysis unit for the 2004 area-based measure. This will be subject to resolving issues on the supply and release of data. If it is not possible to resolve these in time to ensure the release of the 2004 measure in spring 2004, the Executive will continue the use of wards as the analysis unit.

R5.4 - summarises results using both domain and life-stages approaches and ensures that individual indicators can be disaggregated by life-stage groups and gender on a consistent basis

The Executive accepts the usefulness of the life-stage approach and will introduce this in 2004. The results may be released slightly later than the domain approach.

R5.5 - publishes as many of the individual indicator scores as possible in order that people can assess absolute changes over time as well as being able to explore the relationships between each indicator and the overall index

The Executive accepts this recommendation in principle for implementation from 2004 onwards, but will need to ensure that the confidentiality of individuals is respected. The interaction with introducing a smaller geographic unit of analysis, the data zone, may impose constraints on which data can be released. If individual indicators can be released, they will be included in Scottish Neighbourhood Statistics.

R5.5 - uses the same set of indicators from year to year but updates the set periodically and, in the change years, publishes results using both old and new sets of variables.

The Executive accepts this recommendation: its implementation will be affected by the timescale for introducing the full set of changes recommended in section 5.1.

R5.6 - uses the same set of weights from year to year when combining indicators to determine domain scores but updates the weights periodically (at the same time as new data is brought in to the index) and, in the change years, publishes results using both old and new weights.

The Executive accepts this recommendation: its implementation will be affected by the timescale for introducing the full set of changes recommended in section 5.1.

R5.7 - commissions further work to consider improving the "shrinkage" technique applied to scores for small areas and re-considers the use of factor analysis for combining indicators into domain scores.

The Executive will aim to commission research on the "shrinkage" technique in 2003, but it is unlikely that results will be available in time for the 2004 work. Any improvements suggested by the research would be included in the next update. The Executive will re-consider the use of factor analysis for the 2004 work.

## 5.1 Domains and indicators

### 5.1.1 Current income

We recommend that the Executive

- Retains benefits take-up rates as the means of identifying the population on low income in the short term, with the list of benefits updated to include Working Tax Credit and Pension Credit, Working Tax Credit and Pension Credit will be introduced in 2003. As the 2004 measure will use 2002 data, these tax credits would be included in subsequent updates. The list of benefits/tax credits will be reviewed for each update and amended to reflect the current tax/benefit system.
- Commissions research to explore how benefit take-up rates vary between areas with the aim of producing correction factors so that take-up rates can be used to estimate eligibility rates in the medium term, The Executive will discuss this recommendation with the Department for Work and Pensions, which is responsible for the benefit system, and the Inland Revenue, which is responsible for tax credits. Changes are unlikely before 2006.
- Monitors developments in estimating local income distributions as a potential replacement for benefits data as the basis for this element in the longer term, The Executive accepts this recommendation, and will include such monitoring in its on-going programme, but results are unlikely to be available before 2006.
- Adds its voice to calls for the Inland Revenue to make data on incomes and wealth available for small areas The Executive has already supported moves to make a wider range of Inland Revenue data available, and will continue to do so.

### 5.1.2 Other financial resources

R 5.1.2 We recommend that the Executive

- Discusses with DWP the possibility of providing estimates of numbers who have been on low income benefits for more than one year; The Executive will discuss with DWP: it is possible that information might be available for 2004, but 2006 is more likely.
- Explores acquisition of commercial data on debt and savings levels; The Executive will explore this, with the aim of including information in 2006.
- Considers modelling incidence of financial stress and savings from household surveys; The Executive will consider this, with the aim of including information in 2006.
- Considers the development of local cost of living measure in the longer term The Executive will consider this, but this is a difficult and complex area, with a number of issues to resolve, and rapid progress is unlikely.

- Monitors the development of standardised money advice systems as a potential source of data on debt problems in future The Executive will monitor this, with the aim of including information in 2006.

### 5.1.3 Housing

R 5.1.3 We recommend that the Executive

- focuses the housing domain on direct measures of inadequacy of housing, covering physical conditions, suitability and security of tenure; The Executive accepts this recommendation. There are no implementation implications.
- uses the Census in the short term to provide indicators of physical conditions and overcrowding; The Executive will use 2001 Census data in the housing domain for the 2004 measure. In the longer term, indicators of physical condition should take into account the proposed Scottish Social Housing Standard (see <http://www.scotland.gov.uk/consultations/housing/mssh-03.asp> and any other current guidance on housing standards.
- examines data on origins of homeless people applying to local authorities once it becomes available; The Executive will implement this recommendation for 2004.
- gives the Housing Working Group within the Neighbourhood Statistics project the responsibility to develop appropriate measures of housing deprivation in the longer term. The Executive accepts this recommendation. There are no implications for the forward programme of work to develop deprivation measures.

## 5.1.4 Health

R5.1.4 We recommend that the Executive:

- specifies the aim of the domain as identifying areas with health problems attributable to deprivation; The Executive accepts this recommendation. There are no implications for the forward programme of work to develop deprivation measures.
- commissions further work to explore whether it is necessary to adjust all the health indicators to control for population structure; The Executive will explore this, with the aim of including adjustments, if required, in 2006.
- extends the Comparative Mortality Factor to cover the population over 75; The Executive will implement this recommendation for 2004.
- adopts Census data on limiting long-term illness and general health as the basis of the Comparative Illness Factor in the short term, and uses the SHS to update this in future years; The Executive will use 2001 Census in the 2004 measure, and will consider how this might be updated in future years.
- monitors the development of small area data on life expectancy and healthy life expectancy as alternatives to existing mortality and morbidity indicators; The Executive will monitor this, but it is unlikely that information will be available before 2006 and a longer timescale may be more realistic.
- seeks to include an additional indicator on smoking rates. The Executive will monitor this, but it is unlikely that information will be available before 2006 and a longer timescale may be more realistic.

### 5.1.5 Education, skills and training

R5.1.5 We recommend that the Executive:

- specifies that the focus of this domain should be on low educational achievement or low skills as both an outcome and a cause of poverty and deprivation; The Executive accepts this recommendation. There are no implications for the forward programme of work to develop deprivation measures.
- bases the pupil exam performance indicator on an average for three years; The Executive will implement this recommendation for 2004.
- improves the indicator on absence rates by taking advantage of new pupil-level data on this area; Pupil level information on attendance will first be collected for the 2003-4 school session and will not be available in time for the 2004 measure. The Executive will implement this recommendation for the 2006 update.
- replaces the indicator on qualifications for working age adults by direct figures from the Census and, in future, updates these figures using a revised method; The Executive will use 2001 Census data for 2004, and probably also for 2006, but will aim to introduce a revised method thereafter.
- improves coverage of the working age and older population by estimating the proportion of adults with poor literacy or numeracy. The Executive will consider how this might be done, but it is unlikely that information will be available until after 2006.

### 5.1.6 Employment

R5.1.6 If the employment domain is retained, we recommend that the Executive:

- considers whether the domain is intended as a measure of “exclusion from the world of work” (as at present) or as an indirect measure of deprivation; The Executive will retain the employment domain, as a measure of exclusion from the world of work, and continue the use of the existing measures. In the longer term, the domain will move to measuring long-term or persistent unemployment, using a definition of long-term employment consistent with other measures. The Executive will review the available information on seasonal fluctuations in unemployment and consider whether averaging would be helpful.
- if the latter) measures the opposite of the (full-time equivalent) employment rate;
- (if the former) retains the existing benefits-based measure;
- in any case, uses benefits data averaged over four successive quarters to remove problems of seasonal fluctuations in unemployment;

### 5.1.7 Crime and social order

R5.1.7 We recommend that the Executive:

- bases the domain on a combination of crime incidence data, fear of crime measures, incidence of social disorder or incivilities, and fire service data on malicious fires and false call-outs; The Executive accepts this recommendation. There are no implications for the forward programme of work to develop deprivation measures.
- estimates crime incidence from police recorded crime statistics and crime survey data; The Executive will consider this, but it is unlikely that information will be available before 2006 and a longer timescale may be more realistic.
- works with police forces to make recorded crime statistics available for small areas on a consistent basis in the longer term; The Executive will consider this, but it is unlikely that information will be available before 2006 and a longer timescale may be more realistic.
- estimates fear of crime and incidence of social disorder or incivilities using survey data modelled to small area level; The Executive will consider this, but it is unlikely that information will be available before 2006 and a longer timescale may be more realistic.
- works with the fire service to secure data on malicious fires and false call-outs. The Executive will consider this, and it may be possible to secure data for 2004. However, the data should be included in an area-based measure only when the complete domain can be introduced. In the meantime, data can be released through Scottish Neighbourhood Statistics.

### 5.1.8 Physical environment

R5.1.8 We recommend that the Executive:

- bases the domain on measures of air, water or noise quality, as well as proximity to positive or negative features; The Executive accepts this recommendation in principle and will aim to introduce a physical environment domain. There are links to environmental justice which need to be considered. The soonest a physical environment domain could be developed is for 2006 and a longer timescale may be more realistic.
- looks to develop a measure of access to open space or play areas for children. The Executive will consider this, but it is unlikely that information will be available before 2006 and a longer timescale may be more realistic.

### 5.1.9 Geographic access and telecommunications

R5.1.9 We recommend that the Executive:

- changes the name of the domain to “geographic access and telecommunications”, reflecting the broader focus; The Executive accepts this recommendation. There are no implications for the forward programme of work to develop deprivation measures.
- changes the list of services to which distance is calculated as discussed; The Executive will implement this recommendation for 2004.
- moves to measuring distance in terms of drive or travel times rather than road/ferry distance in the short term, and consider the use of generalised travel costs in the longer term; The Executive will move to measuring distance in terms of travel times for 2004 and will consider the use of generalised travel costs for 2006, though a longer timescale may be more realistic.
- includes a measure of geographic access to employment and measures of the availability of telecommunications infrastructure; The Executive will aim to implement this recommendation for 2006.
- continues to explore how wider issues of access to services, service quality and service availability might be captured. The Executive will consider this, but it is unlikely that information will be available before 2006 and a longer timescale may be more realistic.

### 5.1.10 Social relations and social capital

- R5.1.10 We recommend that the Executive monitors the work led by ONS to develop measures of social capital for small areas and considers including all or some of those measures within the index. The Executive is already represented on the Working Group overseeing the ONS work to develop measures of social capital and will continue to be involved. It will consider whether such measures can be introduced for 2006 but a longer timescale may be more realistic.

## 6. Developing individual measures

In implementing the individual measure of deprivation, we recommend that the Executive:

- R6.1 - determines the most appropriate standard to use to assess levels of deprivation (the list of “necessities”) following original qualitative and quantitative research in Scotland; The Executive accepts these recommendations in principle.
- R6.2 - recognises the high level of demand for data on individual deprivation down to the level of local authority areas and, consequently, collects data on deprivation through the Scottish Household Survey and publishes it annually; However, the development of the approach will take several years. We will need to take into account developments in the UK or Europe, for comparability. It is unlikely that it could be introduced before 2006 and a longer timescale may be more realistic.
- R6.3 - tracks change over time using a range of thresholds or cut-off points to determine levels of deprivation; The lead time for developing new surveys or changing existing ones can be considerable, with a further period before results become available and fit for purpose.
- R6.4 - uses a single standard to measure deprivation for all adults and a separate standard to measure deprivation for children; The costs of developing the approach will also need to be considered.
- R6.5 - ensures that it is possible to disaggregate results (at national level) by age, gender, household type, ethnicity, and (if possible) disability and sexual orientation; The Executive believes that results for the area-based and individual measures should be released and updated on the same timescales. This implies that the standard might be updated at 6 yearly intervals, rather than the 5 years suggested in R6.7.
- R6.6 - carries out further research on the demand for separate standards for individual groups once the results of using a single standard have been published;
- R6.7 - maintains the same standard for consecutive years but reviews the standard periodically (at least every five years).

## 7. Relationships with other measures

We recommend that the Executive:

- R7.1 - liaises with the Department of Work and Pensions over the proposed inclusion of child deprivation indicators in the Family Resources Survey to ensure compatibility with any measure of child deprivation developed in Scotland, if appropriate; The Executive has established arrangements for liaison with the Department for Work and Pensions. It will continue to keep in touch with its work to develop measures of child deprivation.
- R7.2 - monitors development of the work on deprivation indicators by Eurostat. The Executive will monitor such developments as part of its continuing programme of work.