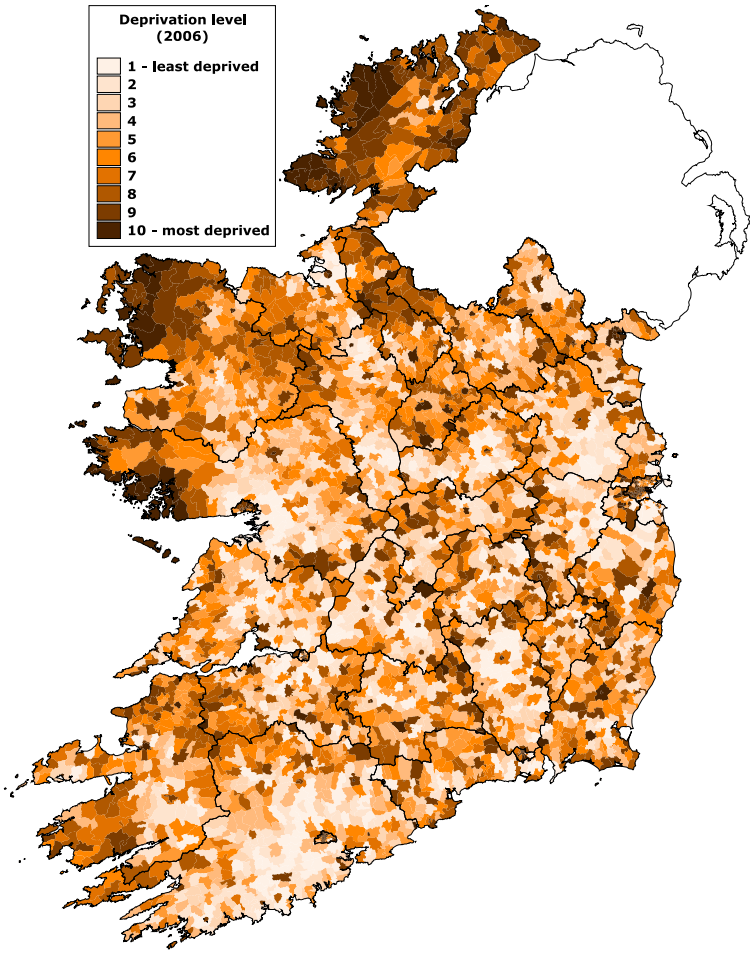
S M A L L A R E A H E A L T H R E S E A R C H U N I T (S A H R U)

The National Deprivation Index
For Health & Health Services Research



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SAHRU Technical Report December 2007

Summary of Key Points

Background

- SAHRU was commissioned in early 1997 by the Directors of Public Health in Ireland to produce the 1st national deprivation index for health and health services research. The index and report was subsequently placed in the public domain. The original version was based on the 1991 Census. In 2004 the index was updated to reflect the then newly released 2002 Census results. The present report does the same for the 2006 national Irish Census.
- There are nearly three and a half thousand electoral divisions (EDs) in Ireland, however, the Central Statistics Office (CSO) does not release small area population statistics (SAPS) on some sparsely populated EDs for reasons of confidentiality. These latter EDs are generally merged with neighbouring EDs. As a result, in 2002 the SAPS were made available on 3422 EDs whereas in 2006 the number was reduced again to 3409 EDs.
- A suitable index of deprivation must be based - in the first instance - on an appreciation of the functional role of the index. This requires that a distinction be made between an index of material deprivation and other potential *at risk* indices. A firm conceptual basis allows for the selection of the relevant individual indicators (subject to their availability in SAPS).
- The SAHRU index is similar in design to the widely regarded Carstairs and Townsend indices employed in the UK, with certain modifications in view of differences in definition and scope between census variables in the UK and Ireland.

Methods

- Principal components analysis (PCA) has been employed to construct a weighted combination of selected indicators from those available in SAPS. PCA objectively determines the weights (hence the influence) of individual indicators in the index. Previous versions of the deprivation index have been based on 5 carefully selected indicators (as detailed in the main text). These relate to unemployment, social class, type of housing tenure, car ownership and overcrowding. However, for purposes of constructing the current index, overcrowding has been dropped as this indicator shows less variability in the latest census and so it is now a poor discriminator between affluent and deprived areas and its inclusion actually degrades the quality of the index. For comparative purposes, the 2002 results have been recomputed based on 4 indicators.
- The 1st Principal Component provides a score for each ED that is the basis for the index. The scale (or Principal Component score) is ranked from low (least deprived) to high (most deprived) and then simply divided into 10 classes or deciles. The last decile therefore comprises the most deprived EDs (N=341) in the country.

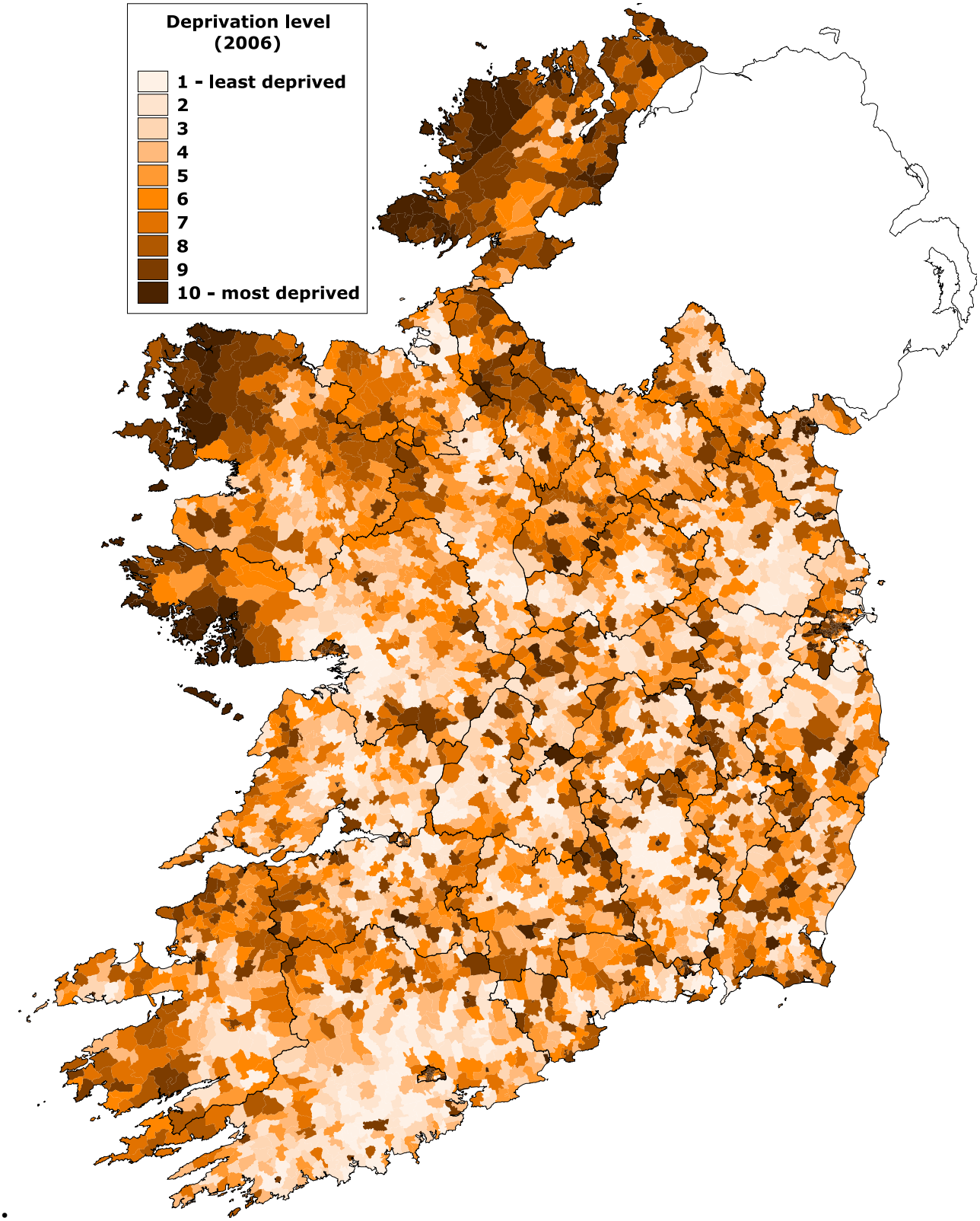
Main findings

- Maps 1 & 2 (pp3-4) display the index for 2006 and (recomputed) 2002, respectively. Inspection of these maps points to selected coastal areas, particularly in the North-West and West of the country, as experiencing high levels of deprivation. The pattern of deprivations is seen to be broadly similar for both years. Less obvious – due to the scale of these maps – is the fact that many urban centers – with large populations - also experience high levels of deprivation, most notably in the cities of Dublin, Cork, Galway, Limerick and Waterford (see maps 3-7, p5). Conversely, many of the highly deprived (yet highly visible) rural areas are sparsely populated.
- Comparisons between regions indicates that the bulk of the most deprived EDs (i.e. the top decile with 341 EDs) are located in the Eastern Region (Dublin, Kildare & Wicklow) followed by the North Western (Donegal, Sligo and Leitrim).

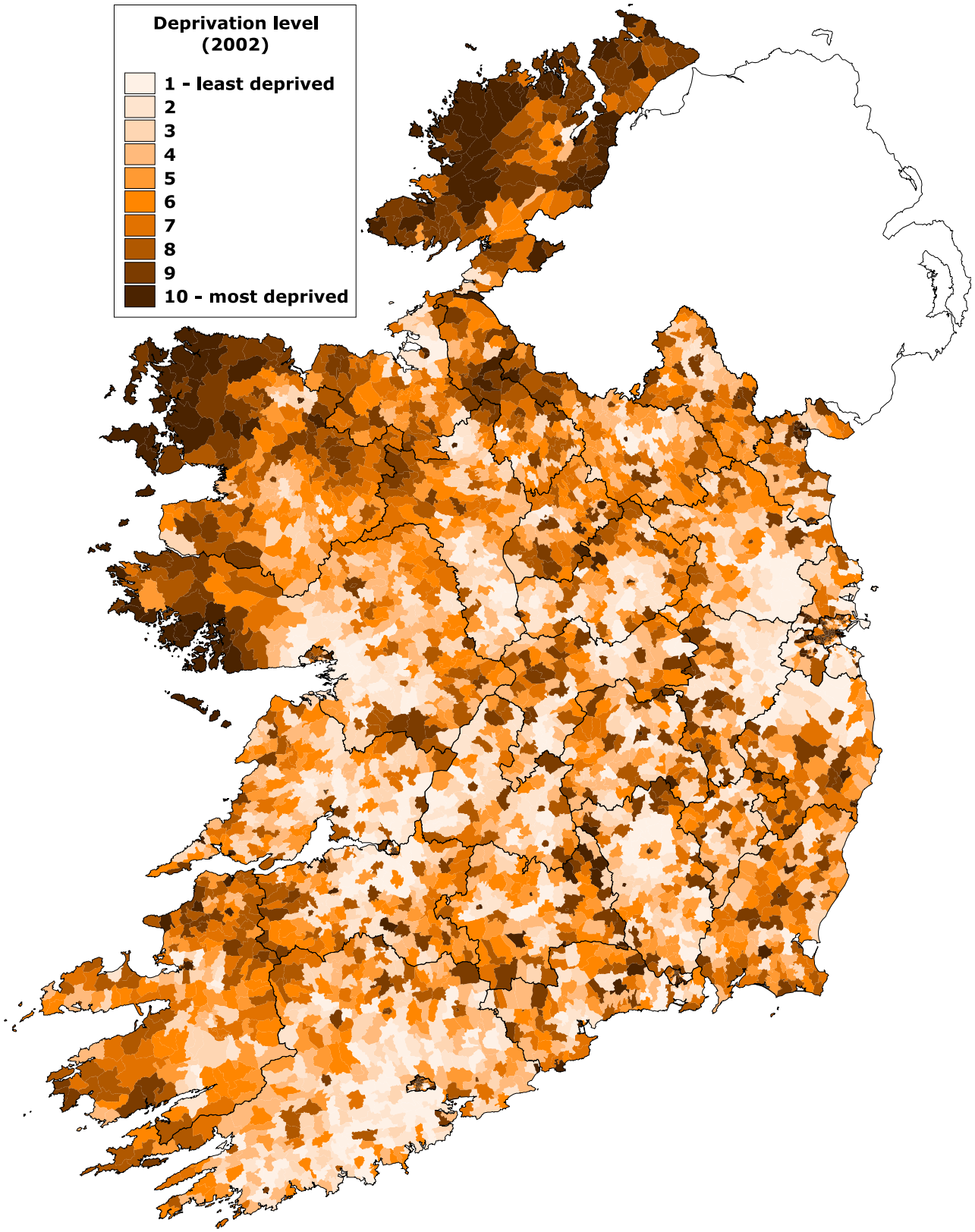
- In terms of numbers of individuals living in deprived EDs, in 2006 some 19% of the national population live in the 341 most deprived EDs. This corresponds to 803,719 persons. [NB: it must be emphasised that not everyone living in deprived EDs are themselves deprived and *vice versa*.] For purposes of comparisons between 2006 and 2002, 76% of all EDs retain the same index level or move up or down by just one level (i.e. by one decile) with the remaining 26% of EDs experienced more pronounced shifts in deprivation levels, some moving up or down the scale by 4 to 6 deciles. These latter EDs tend, by and large, to have small populations and are thus more susceptible to relatively large swings in percentages unemployed, in low social class, etc.

Important points to note on interpretation

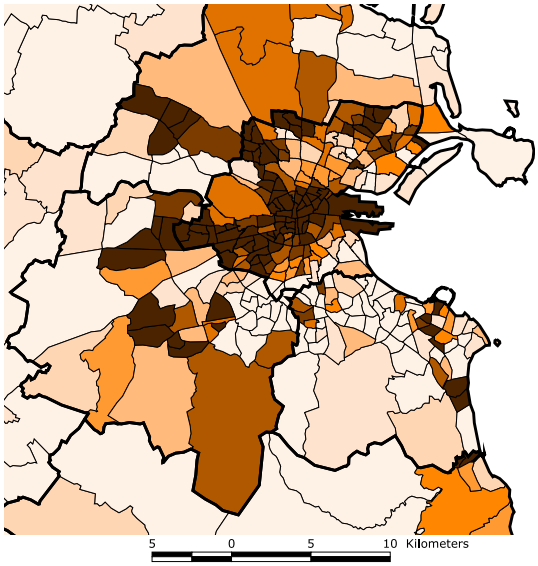
- Do not compare scores over time. An ED with the same score for 2002 and 2006 does not necessarily mean that the indicator profile is unchanged. The score is relative: it is dependent on the national distribution of the 4 constituent indicators which change with time. Comparison of levels between censuses is more acceptable.
- Do not compute an average score or average decile level for a group of EDs, for example, a county. Do compute the percentage population per decile in each group of EDs (e.g. Kilkenny versus Carlow) and contrast and compare.
- Do not use the *deprivation index* as a proxy measure for poverty. Do use it as a measure of *relative material deprivation.*
- In the report deciles are used for convenience but feel free to group the scores into quintiles of percentiles as required. Do use the scores rather than the deciles for modeling, for example, in calculating correlations.
- Not everyone in a deprived ED is deprived and *vice versa*. By extension, the 10% most deprived EDs do not correspond to the 10% most deprived individuals!
- The deprivation scale is non-linear, that is, individuals in EDs in decile 10 are not *twice* as deprived as individuals in decile 5.
- Two EDs with the same deprivation level, need not share the same profile across the constituent indicators. One might achieve a given deprivation level due to high unemployment whereas another might achieve the same level due to a high proportion of local authority housing.



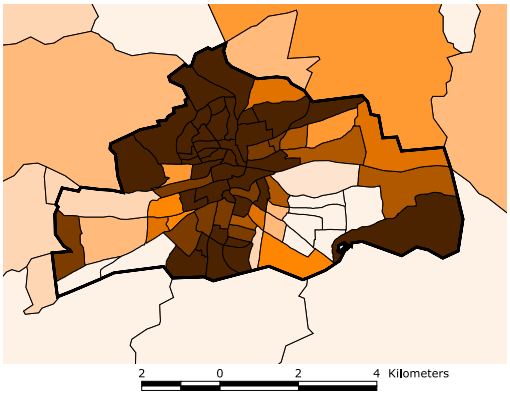
Map 1. Deprivation Index 2006



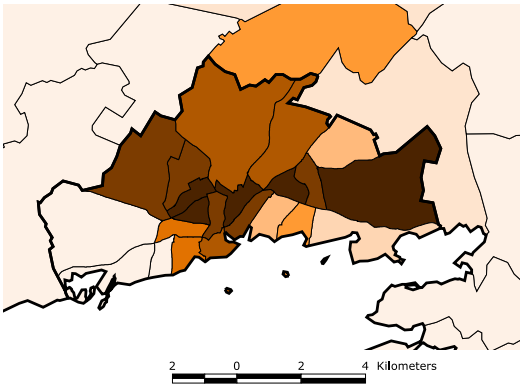
Map 2. Deprivation Index 2002



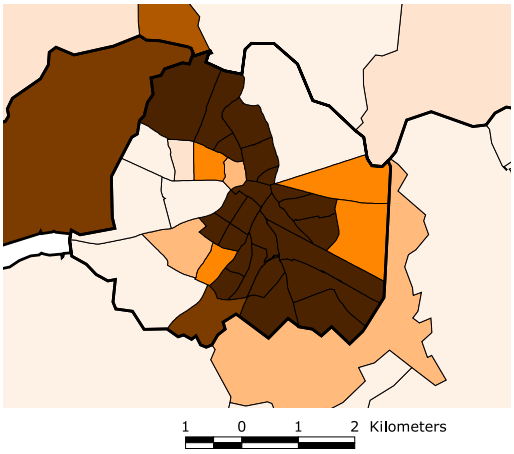
Map 3. Dublin



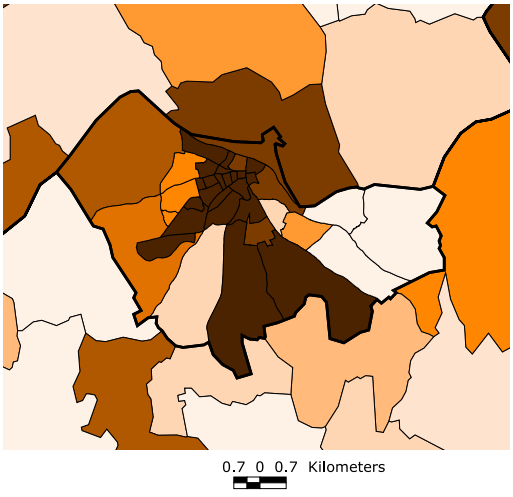
Map 4. Cork



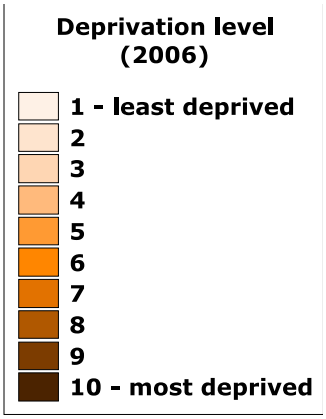
Map 5. Galway



Map 6. Limerick



Map 7. Waterford



1. Background

The Republic of Ireland is divided into 3,440 Electoral Divisions (or Wards in County Boroughs) for census purposes. These are the smallest administrative area for which population statistics are gather by the Central Statistics Office (CSO). For convenience the terms Electoral Division and Ward will henceforth be abbreviated to ED. The CSO may not make data available for all EDs - some are sparsely populated and therefore for reasons of confidentiality these will be merged with neighbouring EDs. For instance, the Small Area Population Statistics (SAPS) for the 2006 census is only available on some 3409 EDs. These data were released by the CSO in October 2007.[1]
SAPS only contain detailed classifications of the census variables; data pertaining to the individual within the household are not available.

Deprivation has been defined by Townsend as a state of "*observable and demonstrable disadvantage relative to the local community to which an individual belongs*". (1) The idea has come to be applied to conditions (i.e. physical and social circumstances) rather than resources or income and can therefore be distinguished from the concept of poverty, though the two are closely related. This conceptualisation can explain why people can experience deprivation but do not necessarily live in poverty. In the original (1997) SAHRU report on the development of the national deprivation index we set out a rationale for the choice of 5 variables from the SAPS data on which to base the index. (2,3) The following is based on that report describing the constituent variables. It should be noted that minor, but not necessarily unimportant changes have occurred in the way the CSO provide information in relation to two of these variables, i.e. 'unemployment' and 'overcrowding'. The past definition is presented alongside the current for clarity.

Indicators considered for the national deprivation index

As originally developed, a total of five census based indicators, widely believed to represent or be a determinant of material disadvantage, were considered for possible inclusion in the SAHRU Deprivation Index. (1) These were:

Unemployment

Low social class

No car

Rented accommodation

Overcrowding

The rationale for choosing each indicator is given below.

Unemployment (UE)

Unemployment reflects lack of access to earned income and the facilities of employment. Moreover it may impose other pressures on individuals through loss of self-esteem, and on families through problems and tensions generated.

The 'unemployment' indicator is:

> Proportion of the economically active population (15 years or older) unemployed or seeking a first time job.
>
> [NB: Previously this read: Proportion of the economically active population (15 – 64 years of age) unemployed or seeking a first time job.]

[1] See www.cso.ie and follow links to Census

Low Social Class (SC)
The Irish Social Class Scale is an ordinal scale from 1 (higher professional) to 6 (unskilled manual). It is based on the concept of groups whose members possess capacities for the generation of income through their occupations, not the status/prestige associated with particular occupations. A social class code of seven is assigned to people who can not be assigned to any of the other six groups. Being in a low social class — i.e. Class 5: semi-skilled manual occupations (including farmers farming less than 30 acres) and Class 6: unskilled manual occupations — reflects earnings at the lower end of the income scale. Low income limits access to material resources and the ability to make choices in life.

The 'low social class' indicator is:

> Proportion of population (social classes 1 to 6 only) in social class 5 or 6.

No Car (NC)
Car ownership has been suggested as a surrogate for current disposable income. Apart from the cost of purchasing a car there are the necessary licensing, insurance, maintenance and repair costs, as well as day-to-day running expenses. Car ownership also confers benefits in terms of access to other resources. It might be argued that in city areas, with good access to public transport services, owning a car is not a necessity. Nevertheless despite the availability of public transport ownership of a car appears to be something that many households do wish to achieve. This may be a reflection of the inconvenience and/or limited scope of public transport as well as the prestige associated with owning a car. In rural areas car ownership is more of a necessity and its value as a discriminator between affluent and deprived areas may be diminished.

The following 'no car' indicator has been used:

> Proportion of permanent private households with no car.

Local Authority Rented Accommodation (LA)
Non-owner occupation has been suggested as a surrogate for income in the long term. Taken together with car ownership these two indicators are likely to provide a fairly good reflection of income levels in different areas.

The 'rented accommodation' indicator is:

> Proportion of permanent private households rented from a local authority, or in the process of being acquired from a local authority

Overcrowding (OC)
Overcrowded accommodation reflects living circumstances and housing conditions. It may also reflect wealth as people in overcrowded circumstances are likely to wish to improve their circumstances provided financial resources are available.
For purposes of the 2006 index, the 'Overcrowding' indicator has been dropped. This decision was taken in view of the comparative lack of variation in overcrowding across EDs nationally as reported in recent censuses. As a consequence, 'overcrowding' no longer serves adequately as a discriminator between affluent and deprived EDs.

Steps in index construction

Given the 4 indicators measured on 3,409 EDs, the task is to reduce the dimensionality of these data whilst preserving as much of the original information content as possible. For example, if the original 4 indicators can be combined into a single index then this would constitute a more manageable model, provided the reduction in dimensionality is not at the expense of excessive information loss as we discuss below. In our previous report on deprivation we employed a population weighted Principal Components Analysis (PCA) (2), that is, the contribution of each ED to the PC model was weighted by the population size of the ED. This practice is typical in the statistical analysis of areal (i.e. geographically aggregated) data. An obvious consequence is that EDs with larger populations (i.e. urban areas) are inevitably more influential in the formation of the model. Since the 2002 Census and the corresponding update to the SAHRU index (4) and having regard to recent developments in the construction of deprivation indices for England & Wales, Scotland and Northern Ireland (5,6), an alternative approach was employed, namely 'shrinkage' (7). This latter technique is intended to reduce the impact (on the model parameters) of EDs with quite small populations prone to exceptionally large swings in levels of unemployment, or low social class, etc. In such populations, a very slight change in absolute numbers (for example, in numbers unemployment) can result is a very large shift in the corresponding proportion. To remedy this, we computed an adjusted estimate for all EDs for each constituent indicator such that EDs with small populations had their proportions 'shrunk' towards the respective county average.

Results

Summary statistics for the 4 variables are provided in Table 1 while Table 2 lists the correlation coefficient between each pair of indicators following shrinkage. It will be noted that these are all positive and range from a low of 0.52 (between Social Class and No Car) to a high of 0.69 (between Unemployment and Local Authority housing). All 6 pairwise correlations (corresponding to each off-diagonal cell in Table 1) are highly significant with $p<0.0001$.

Table 1. Summary statistics for constituent variables

VARIABLES	MEAN	STD. DEV.	MINIMUM	MAXIMUM
UE (%)	0.0466	0.023	0.011	0.2559
SC (%)	0.191	0.0659	0.0236	0.57
LA (%)	0.0631	0.0779	0.001	0.7636
NC (%)	0.1519	0.1128	0.0224	0.8217

Table 2. Correlation between each pair of indicators

	UE	SC	LA	NC
UE	1.00	0.65	0.69	0.65
SC		1.00	0.58	0.52
LA			1.00	0.64
NC				1.00

The 1st principal component retains over 71% of the information content in the constituent variables.

The 1st PC was computed as follows (with original indicators standardised):

$$PC_1 = 0.52\ UE + 0.47\ SC + 0.51\ LA + 0.48\ NC$$

It is useful to back translate the coefficients associated with the scaled variables as employed in the PCA to the original units as reported in the SAPS but after shrinkage. These coefficients follow.

Equation of the 1st PC for the unstandardised variables:

$$PC_1 = 22.74\ UE + 7.22\ SC + + 6.55\ LA + 4.33\ NC - 3.51$$

It will be seen that proportion 'Unemployed' carries the highest coefficient (22.74) while proportion 'No Car' carries the lowest coefficient (4.33).

The distribution of the Index for 2006 as a raw score derived from the 1st PC (prior to grouping into deciles) is graphed in Fig. 1 over. The score ranges from –2.53 to + 11.21; the median score is slightly less than zero at –0.44. Negative score values correspond to more affluent EDs, while the more positive the score the more deprived the ED. The distribution of this score is highly positively skewed meaning that the distribution displays a long tail to the right. This is due in large part to the distribution of scores in decile 10, which spread from a score +2 to +11.2 giving a range of 9.2 (see Fig. 2 and the table in the Appendix). Contrast this decile with that for decile 5 (score from -0.7 to -0.43; range = 0.27).

Selection of cut-off points

In the original version of the SAHRU index (2,3), we employed a 5-point scale (1 = least deprived, 5 = most deprived). The considerations in choosing the cut-off points were explained in the report. Unfortunately, after due consideration for the preparation of the report based on the 2002 Census (4), it proved impossible to continue this format – in spite of its advantages – in that this would preclude a valid comparison between the then new (2002) index and the original index for 1991. For this reason we chose (as with similar indices in the UK) to simply express the index as deciles (i.e. tenths) of the distribution of the ranked raw scores. This format is maintained for the latest update. This is illustrated in Fig. 2. The index is now scaled from 1 to 10 with approximately equal numbers of EDs per decile, i.e. 3409/10 to give either 340 EDs (for decile 1) or 341 EDs (for deciles 2 to 10). Note the score spread for the final, most deprived, decile (FIG. 2).

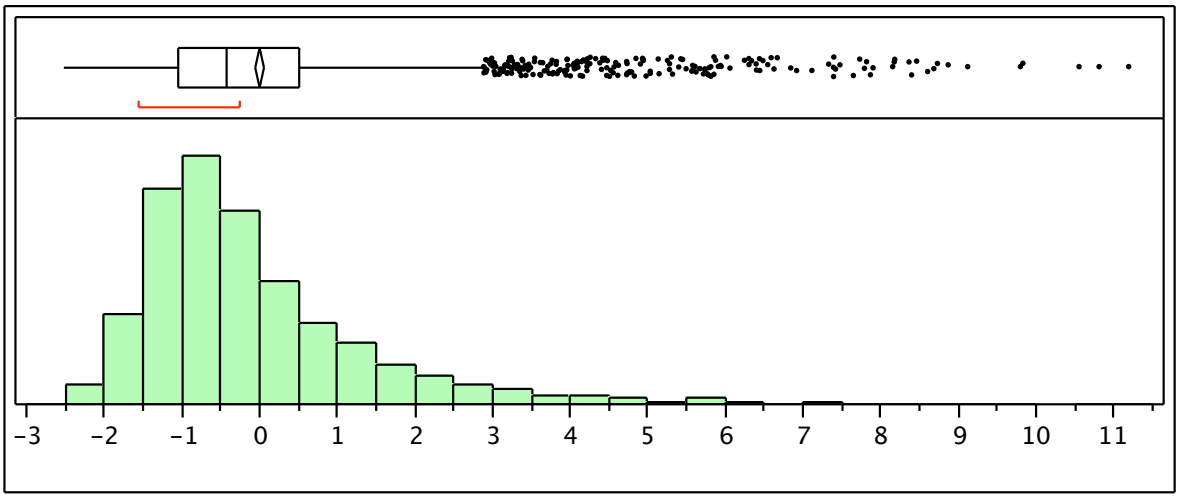


Figure 1. Distribution of Raw Deprivation Score

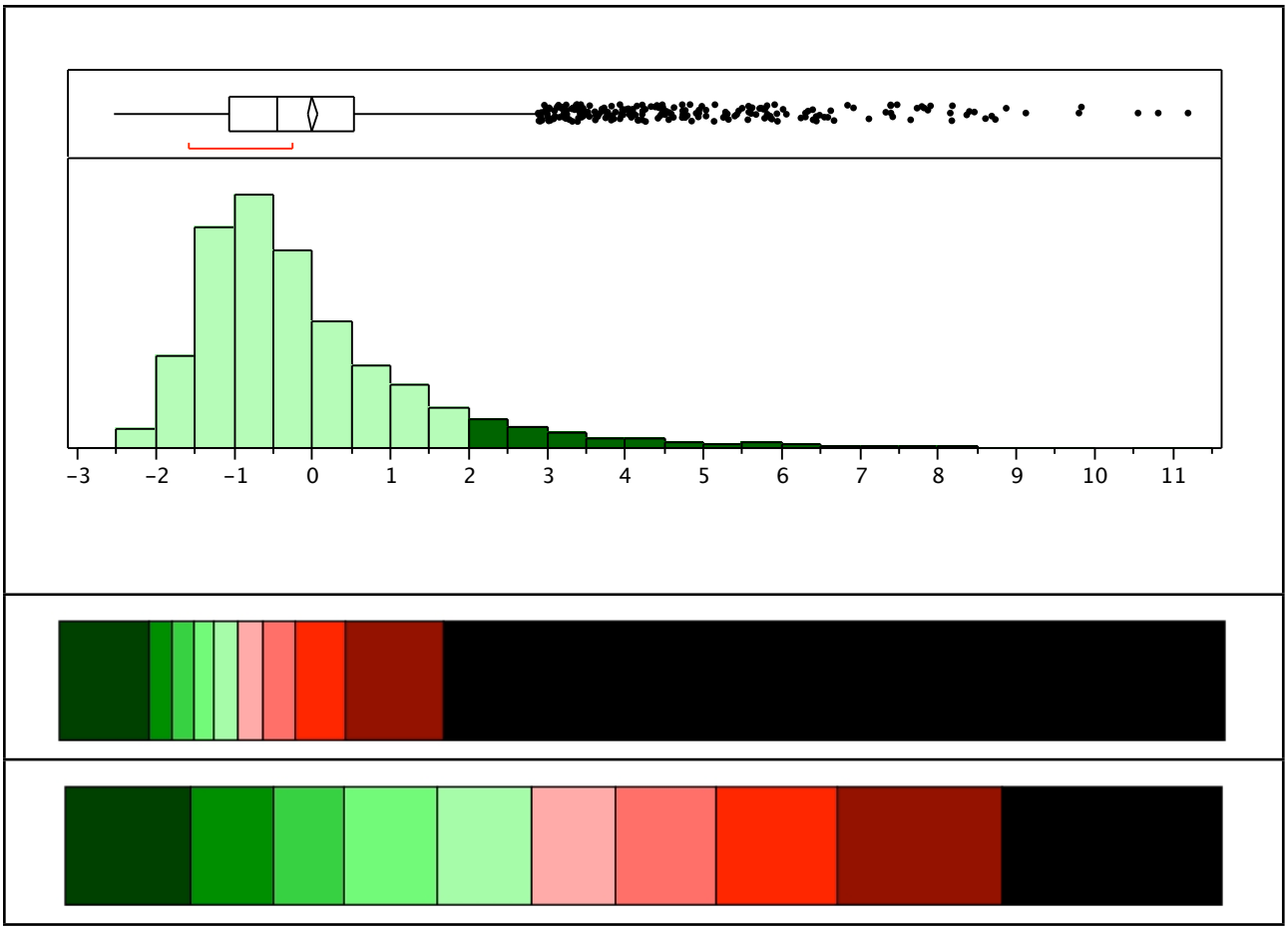


Figure 2. Top - Distribution of the raw score with the last decile (most deprived) highlighted.; Middle - Distribution of deprivation score by decile from 1 to 10; Bottom - Distribution of population numbers within each decile.

The top and middle graphics clearly emphasise the extent of the skewness in the deprivation score. The middle graphic shows how the score is allocated to each of the 10 levels of the index. Level 10 (most deprived), followed by level 1 (least deprived - most affluent) are more prominent than any other decile. The bottom graphic is scaled to show the population numbers within each decile. Deciles 10, 9 and 1 will be seen to embrace the largest proportion of the population.

What's in a label?

The index is intended to reflect degrees of material (not social) deprivation and the rationale for this was originally set out by Townsend (1) and in the previous SAHRU report (2). It is natural to refer to EDs with an index of 10 as 'most deprived' and those with an index of 1 as "most affluent" or perhaps "least deprived". The scale is of course relative, that is, EDs with an index value of 10 have generally higher levels of unemployment, low social class, etc. than EDs whose index value is lower (see Table 3). However, this is not to imply that an ED with an index level of '5' has 5 times more unemployment, etc. as compared to an ED with an index of '1'; the scale in not linear in that sense. EDs that are considered as deprived on this scale may well be far from deprived on another scale (for example, a scale measuring community cohesiveness). And, of course, it is important to recall that not everyone living in a deprived ED will be personally deprived, and conversely, not everyone living in an affluent ED will be personally affluent – the index is a reflection of the average profile of the ED with regard to the selected factors. Nevertheless, this profile has been shown to be predictive of health outcomes and health service demands.

The typical levels of each variable within each decile of the score is shown in Table 3. Note the progressively increase in percentages from index 1 to index 10 for each variable. The right hand column shows the range of the score (1st principal component - see Figure 2) within each decile. The range for decile 10 is dramatically larger than than for each of the other deciles; evidently the constituent EDs differ from each other considerably.

Table 3. Median proportions for each variable within each decile

INDEX	UE	SC	LA	NC	SCORE RANGE
1.00	0.03	0.11	0.01	0.07	1.05
2.00	0.03	0.14	0.01	0.08	0.28
3.00	0.03	0.16	0.02	0.09	0.25
4.00	0.04	0.17	0.02	0.10	0.23
5.00	0.04	0.18	0.03	0.11	0.28
6.00	0.04	0.19	0.04	0.12	0.30
7.00	0.05	0.20	0.05	0.13	0.39
8.00	0.05	0.22	0.08	0.15	0.59
9.00	0.06	0.24	0.12	0.19	1.15
10.00	0.09	0.30	0.18	0.38	9.20

The location of the worst 10% of EDs (top decile of ranked scores) is presented in Table 4 (sorted by the population number in EDs labelled as 10). Dublin City has the highest number of persons

living in the most deprived EDs (246,458). This is followed by Cork City, South Dublin, and County Louth.

Table 4 – Location of the most deprived (N=341) EDs

Area	No. EDs in Area	Total Population in Area	No. EDs in Decile 10	Population in EDs in Decile 10	Percentage population in EDs in Decile 10
Dublin City	162	600173	69	246458	41
Cork City	74	119370	40	58577	49
South Dublin	49	152936	19	57057	37
Louth	43	111263	7	39903	36
Donegal	149	147095	28	31639	22
Limerick City	37	52530	24	28741	55
Waterford City	37	45703	26	25997	57
Galway City	22	72412	7	25689	35
Wexford	124	131675	9	25266	19
Tipperary SR	95	83170	9	20962	25
Fingal	42	239977	4	19923	8
Galway County	214	159130	17	16995	11
Wicklow	82	126139	4	15496	12
Offaly	86	70819	3	15355	22
Dun Laoghaire-Rathdown	69	194029	5	15332	8
Cork County	324	361700	4	14900	4
Carlow	54	50315	6	13409	27
Longford	54	34357	6	12975	38
Kildare	89	186291	3	11514	6
Kilkenny	113	123738	4	11246	13
Kerry	164	87467	3	11132	8
Mayo	152	123738	11	10733	9
Sligo	79	60843	2	10680	18
Clare	151	110778	5	9532	9
Tipperary NR	80	65983	2	8591	13

Area	No. EDs in Area	Total Population in Area	No. EDs in Decile 10	Population in EDs in Decile 10	Percentage population in EDs in Decile 10
Westmeath	105	78875	2	8191	10
Monaghan	70	55980	6	7851	14
Cavan	89	63947	3	6572	10
Meath	92	162784	2	5212	3
Limerick County	136	131441	3	4955	4
Laois	97	66967	3	4836	7
Waterford County	92	62141	1	4680	8
Leitrim	73	28876	3	1721	6
Roscommon	110	58693	1	1599	3

Persons by Deprivation Level

Table 5 shows the population numbers and percentages in each index level. The distribution of the percentages will be seen to be rather higher for levels 1 and 8 through 10 – with the highest percentage in level 10.

In terms of numbers of individuals living in deprived EDs, in 2006 just 19% of the national population lived in the 341 most deprived EDs. This corresponds to 803,719 persons. [NB: clearly not everyone living in deprived EDs are themselves deprived and vice versa.] Some 45.5% of the 803,719 persons living in the most deprived EDs (top decile) are in the Greater Dublin Region comprising Dublin City & County, and Counties Wicklow and Kildare.

Table 5. Persons living in EDs by level of deprivation

INDEX LEVEL	NO. EDS	POPULATION	% POPULATION
1	340	461592	10.9
2	341	299501	7.1
3	341	258074	6.1
4	341	338349	8.0
5	341	346276	8.2
6	341	306365	7.2
7	341	370893	8.8
8	341	444987	10.5
9	341	607590	14.3
10	341	803719	19.0

NB: there are only 340 EDs for Index Level 1; all other index levels contain 341 EDs .

Comparison with 2002 and 2006

In the following, we have reconfigured the 2002 EDs so that they are consistent with those for 2006.

Changes in deprivation level between 2006 and 2002 are summarised in Table 6. About 40% of the EDs show no change in level between the two time periods. If we ignore slight changes (up or down 1 level), then the agreement rises to nearly 77%.

In considering these changes (or indeed, lack of change) it should be recalled that coefficients associated with the set of variables in 2006 differ from that for 2002 (as would levels of unemployment, etc.) as noted above. Also, the population in any given ED will have changed to a greater or lesser degree in terms of numbers (inward and outward migration) and socio-economic status and other demographic and social characteristics.

Table 6. Cross-tabulation of deprivation index for 2006 and 2002

		2006 INDEX										
	Level	1	2	3	4	5	6	7	8	9	10	Total
2002 INDEX	1	213	66	33	17	7	2	1	1	0	0	340
	2	76	120	76	43	16	7	2	1	0	0	341
	3	26	81	86	66	47	24	8	2	1	0	341
	4	12	46	58	83	72	43	20	5	2	0	341
	5	7	20	50	64	81	68	34	14	3	0	341
	6	6	7	26	43	64	78	79	32	5	1	341
	7	0	0	11	19	39	81	97	76	18	0	341
	8	0	1	1	4	15	34	87	126	70	3	341
	9	0	0	0	2	0	4	13	77	195	50	341
	10	0	0	0	0	0	0	0	7	47	287	341
	Total	340	341	341	341	341	341	341	341	341	341	3409

With this *caveat* in mind, the ED-level changes are mapped in Map 8 below.

Comparison of persons living in EDs by Deprivation Level

It is of interest to compare the numbers of persons living in more or less deprived areas in 2002 and 2006. The caveat already noted is repeated: it should be borne in mind that not everyone living in a deprived area is necessarily personally deprived and conversely, relatively deprived individuals will be found living in affluent areas. For purposes of the comparison of areas, the number of EDs in

common between both periods is 3409 as already indicated. Table 7 and Fig. 3 display the population percentage in each decile of deprivation for 2002 and 2006. The general profile across the deprivation level is broadly similar with a reduction in percentages in deciles 1 through 3 and a slight rise in deciles 4 and 5 in 2006 compared to 2002; the remaining deciles are within 1% of the 2002 figure.

Table 7 Percentage of the population in each decile of deprivation in 2002 and 2006 (NB: for N=3409 comparable EDs only)

DEPRIVATION LEVEL	%POPULATION 2002	%POPULATION 2006
1	15.04	11.18
2	8.23	7.78
3	9.04	7.81
4	6.24	7.24
5	6.77	8.01
6	7.36	6.42
7	7.44	9.36
8	10.14	11.28
9	12.09	12.38
10	17.66	18.54

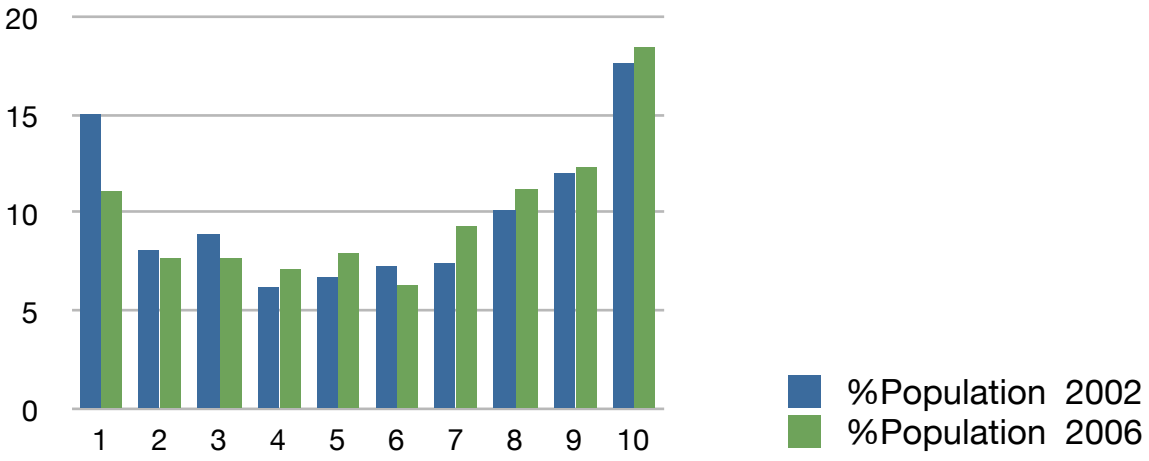
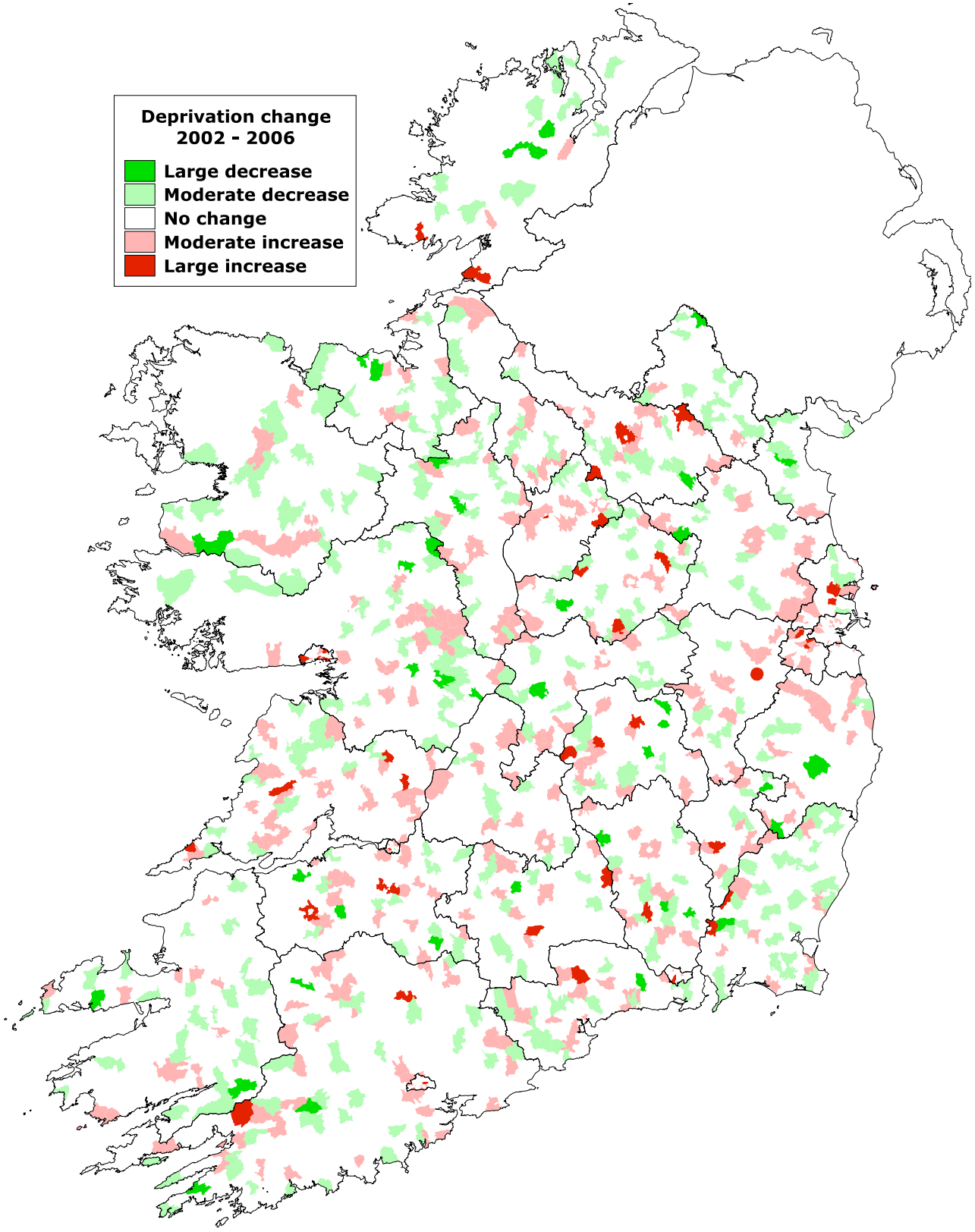


Figure 3. Percentage population in each decile of deprivation for 2006 and 2002



Map 8. Changes in deprivation level between 2002 and 2006

Consistency

Health information is not routinely coded by small area in Ireland. Hence, it is not possible to offer any (external to SAPS) validation of the index at this time. Consistency checks are however possible to some degree. A number of relevant variables have been selected from SAPS (and elsewhere) to check the consistency of the index (see Appendix 2 for details of these variables). These are:

1. Proportion of persons with a disability
2. Proportion households with no central heating
3. Proportion early school leavers
4. Proportion unable to work due to long-term illness

Table 8 Non-parametric correlation between the deprivation score and selected variables

Deprivation Score % Disability	0.463, p<.0001
Deprivation Score % No heating	0.381, p <.0001
Deprivation Score % Early school leaver	0.191, p<.0001
Deprivation Score % Unable to work	0.522, p<.0001

The magnitude of these correlation are generally modest and this serves to underline the fact that health outcomes have many determinants and that area-level deprivation is but one factor in explaining area-to-area variations in these .

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Appendix A

This is a list of the 50 most deprived EDs nationally starting with the highest score.
NB: all of these are index level 10.

ED NAME	LOCAL AUTHORITY	DEPRIVATION SCORE	POPULATION
John's A	Limerick City	11.21	1211
Ballymun D	Dublin City	10.82	3522
Galvone B	Limerick City	10.57	1574
Priorswood C	Dublin City	9.84	3557
Ballymun B	Dublin City	9.81	3949
Priorswood B	Dublin City	9.13	2879
Knocknaheeny	Cork City	8.88	4558
Blanchardstown-Tyrrelstown	Fingal	8.74	1559
Ballybeg North	Waterford City	8.70	2590
Mountjoy A	Dublin City	8.62	3760
Prospect B	Limerick City	8.48	1026
Cherry Orchard A	Dublin City	8.41	2861
Merchants Quay A	South Dublin	8.38	2062
Tallaght-Killinardan	Dublin City	8.19	4135
Glentworth C	Limerick City	8.19	549
Cherry Orchard C	Dublin City	8.17	3794
Ballynanty	Limerick City	7.91	3468
Custom House	Limerick City	7.88	533
Mayfield	Cork City	7.83	3205
Ballymun C	Dublin City	7.80	5921
Ballymun A	Dublin City	7.74	2101
Ushers C	South Dublin	7.66	3089
Gurranebraher C	Cork City	7.49	1021
The Glen A	Cork City	7.43	2488
Tallaght-Fettercairn	Dublin City	7.41	6600
Wood Quay A	South Dublin	7.41	2743

ED NAME	LOCAL AUTHORITY	DEPRIVATION SCORE	POPULATION
Ballybough A	Dublin City	7.41	3624
Inns Quay C	Dublin City	7.34	2672
Shortcourse	Waterford City	7.13	332
Rotunda A	Dublin City	6.93	4672
Mountjoy B	Dublin City	6.85	3446
Rathbane	Limerick City	6.68	1702
Clondalkin-Rowlagh	Dublin City	6.64	4187
Morrisson's Road	Waterford City	6.60	576
Longford No. 1 Urban	Longford	6.56	3134
Killeely A	Limerick City	6.50	1573
Ushers E	South Dublin	6.46	1934
Gurranebraher B	Cork City	6.45	587
Merchants Quay F	South Dublin	6.41	2459
Rathmichael (Bray)	Wicklow	6.41	2431
Larchville	Waterford City	6.35	861
Finglas South C	Dublin City	6.32	2600
Custom House A	Waterford City	6.32	367
Royal Exchange B	South Dublin	6.26	2020
John's B	Limerick City	6.07	1053
Mount Sion	Waterford City	6.03	760
Churchfield	Cork City	5.96	1398
Farranferris B	Cork City	5.95	917
Shannon B	Limerick City	5.92	519
Kilmore C	Dublin City	5.89	1458

Appendix B

Here is the list of Census Small Area Population Themes employed in deriving the indicators:

LA housing
"Theme 6 - 3(a) : Number of permanent private households by type of occupancy, 2006"

UE
"Theme 8 - 1 : Persons aged 15 years and over by principal economic status and sex, 2006"

Low SC
"Theme 9 - 1 : Population by sex, age group and social class, 2006"

NC
"Theme 15 - 1 : Number of households with cars, 2006"