

Commission for Rural Communities

Tackling rural disadvantage

State of the countryside update

Rural analysis of the Index of Multiple Deprivation 2007

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November 2008		
State of the Countryside Update 5		

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State of the Countryside update – Index of Multiple Deprivation

State of the countryside updates

Our *State of the countryside* report provides a broad picture of social, economic and environmental conditions and change across rural England.

In addition to the full report, we have recognised the need for more detailed topic-focused bulletins, produced following the release of new data and information.

These *State of the countryside* updates allow us to monitor key national rural indicators and to track change over time. The updates form one way in which we fulfil our role as an independent watchdog.

As with our broader *State of the countryside* reporting, we hope that each update will assist in increasing the understanding of rural issues and will generate informed and active debate about the challenges facing rural England.

This, and our other updates, are available via our website www.ruralcommunities.gov.uk

The updates that we have completed to date are:

- State of the countryside Update 1 Population and migration
- State of the countryside Update 2 Working age benefit claimants in rural England 2000-2006
- State of the countryside Update 3 Cash purchases of housing stock
- State of the countryside Update 4 Pension credit take-up in rural areas

Key findings

- Sparsely populated areas of all types show higher levels of deprivation than their less sparsely populated counterparts.
- The lowest levels of deprivation are found in less sparse rural towns, with less sparse villages and hamlets also having low levels of deprivation.
- In each 'rural:urban geography' area type there is a different distribution of scores. Less sparse rural towns show the greatest concentration of least deprived areas.
- Our analysis of the Index of Multiple Deprivation (IMD) shows that, on average, rural areas suffer less deprivation than urban areas.
- In terms of numbers of people, there are many more people in the least deprived Lower level Super Output Areas living in urban areas than live in rural areas urban areas may have more deprivation, but they also have more people in the better off areas.
- Rural areas can be grouped according to their IMD characteristics, and many areas score
 poorly on particular aspects such as indoor environment, housing, or access to services,
 while scoring better on other domains.
- Change since 2004 has been positive only for sparse rural towns. Areas in the villages and hamlets category have seen the greatest deterioration in terms of their scores on the IMD¹.
- While the IMD can tell us much about deprivation in rural areas, comparison with other analysis, such as that by OCSI (2008) and DWP, shows that it does not give a full picture of where people suffering from rural deprivation can be found. While only 2.4% of the small areas (LSOAs) that are in the worst 20% of areas on the IMD are found in rural areas, 17% of households in rural areas overall have an income of less than 60% of the English median (after equivalisation²).

¹ Note that comparing 2004 area scores with those for 2007 has to be done with caution – changes in the ranking of individual areas cannot be viewed as an accurate reflection of change for that specific place, but we use IMD scores which are less subject to change errors.

² The median income is for all households. Equivalisation is a technique that takes household size into account, on the assumption that a single person household needs less income than a larger household.

Introduction

The Index of Multiple Deprivation (IMD) measures a range of factors that indicate whether people living in small areas are experiencing various forms of deprivation. The Summary Note (DCLG, 2008, p9) states that "The model of multiple deprivation which underpins the IMD 2007 is based on the idea of distinct dimensions of deprivation which can be recognised and measured separately. These are experienced by individuals living in an area. People may be counted in one or more of the domains, depending on the number of types of deprivation that they experience. The overall IMD is conceptualised as a weighted area level aggregation of these specific dimensions of deprivation."

In all, 38 indicators are used to create the seven separate domains of deprivation which (with their relative weightings) are:

Domain	Indicators used in calculation	Weighting (total = 100)
Income	Based on benefit claimants (6 indicators)	22.5
Employment	Job seekers, incapacity, disability claimants;	22.5
	participants in new deal schemes (6 indicators)	
Health and disability	4 physical and mental health indicators	13.5
Education, skills and training		13.5
Children sub domain	Average test scores, not staying on at school over 16 and absenteeism	
Skills sub domain	No or low skills indicator	
Housing and services		9.3
Wider barriers sub domain	Overcrowding, difficulty in becoming owner/ occupier, and homelessness decisions	
Geographical barriers sub domain	Road distance to services	
Crime domain	Burglary, theft, violence and criminal damage	9.3
Living environment		9.3
Indoors living sub domain	Housing in poor condition or without central heating	
Outdoors living sub domain	Air quality; pedestrian and cyclist injuries	

Fuller details of indicators used to construct the domains can be found in DCLG, 2008, and also at http://www.communities.gov.uk/communities/neighbourhoodrenewal/deprivation/deprivation07/

The published IMD therefore gives an indication of how deprived each Lower level Super Output Area (LSOA) is. There are about 32,000 LSOAs with populations of about 1,000 to 3,000 in England.

This *State of the countryside* update looks at how the IMD and its component domains are distributed across rural England, and discusses the extent to which these patterns reflect rural disadvantage and deprivation.

Urban and rural differences in IMD

Figure 1 shows median IMD scores for each rural and urban area type, using the Office for National Statistics' small area rural and urban definition (see Annex 1) (using the 6 categories for which the data allows analysis).

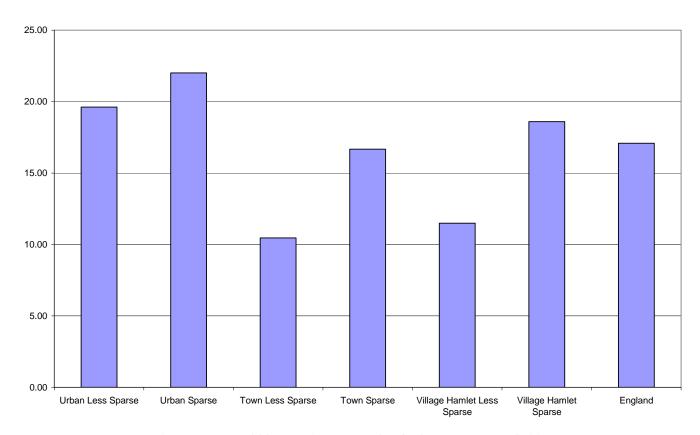


Figure 1 – IMD 2007 median scores for ONS small area definition

Urban areas show the highest scores (which means that they tend to be more deprived). Sparse areas show higher scores whether they are urban, town and fringe, villages and hamlets or dispersed settlements. Less sparse rural areas containing both small towns and smaller settlements show the lowest scores.

Figure 2 shows the change that has occurred since 2004 when the Index was last calculated.

(These results should be treated with caution because of the complex calculations involved, but DCLG, 2007 says that "as far as possible most indicators are equivalent to their IMD 2004 counterparts. Therefore most change is likely to reflect real relative change between to two time periods". (DCLG, 2007 p12-13).

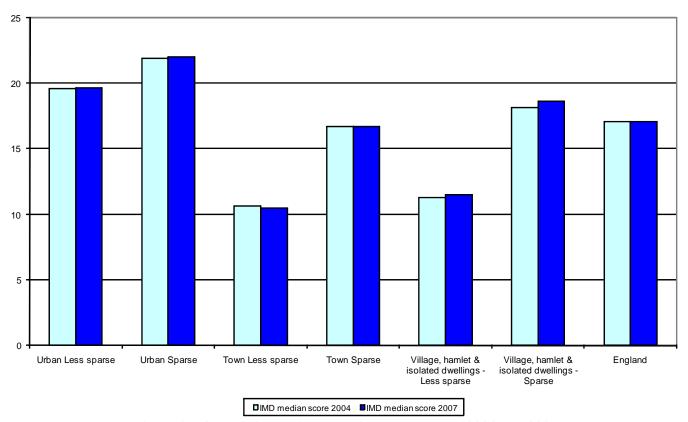


Figure 2 - Change in median score for IMD between 2004 and 2007

In Figure 2 an increase in the score shows a deterioration while a negative score shows an improvement. It can be seen that all changes (in the median score) are very small compared to the median for 2004 or 2007 – there has not been much overall change.

Less sparse rural towns are the only category that have seen an improvement, while villages (both sparse and less sparse) have seen the greatest deterioration. Sparse areas of all types have deteriorated.

So, on average across rural areas, the picture is that rural areas have less deprivation than urban areas. However, while less sparse rural towns have improved, other rural areas have deteriorated.

Figure 3 shows how IMD scores for each LSOA are distributed for each rural:urban category. The graph divides all scores into tenths (deciles), so that the graph for all LSOAs would be a flat line, with 10% for each tenth of the results. This form of analysis shows how much each area type differs from the whole of England.

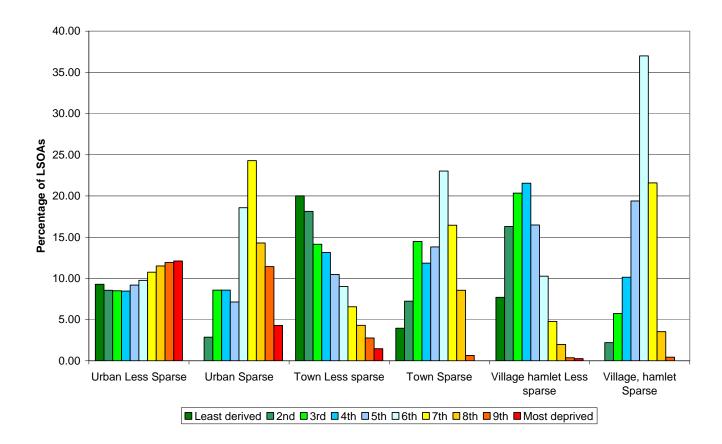


Figure 3 – Distribution of IMD scores for different ONS rural:urban definition area types (percentage of LSOAs in each 10th of the IMD scale)

Starting with the urban less sparse group it can be seen that all deciles are fairly close to the 10% line. This is mainly because less sparse urban areas account for 80% of the population (and LSOAs) and makes up so much of the total. However, the percentage of LSOAs in the most deprived deciles increase towards the more deprived end, which is consistent with these urban LSOAs generally having a higher than average score.

This pattern is not mirrored by any of the other categories. Less sparse rural towns show the opposite trend, while the others all have a marked peak. All types of sparse area have the peak towards the more deprived while less sparse village and hamlets peak nearer the less deprived.

The patterns shown in Figure 3 fit the fairly widely held view that rural areas are better off than urban areas, but it is worth pausing to look at the numbers of people in different categories, rather than the percentages.

Figure 4 shows the same data as Figure 3 but by population numbers rather than percentage of population.

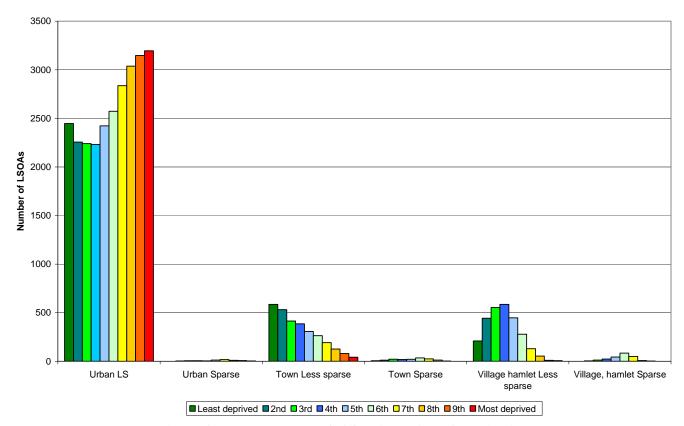


Figure 4 – Total numbers of LSOAs in deciles of deprivation

It is apparent that while rural people tend to live in less deprived areas there are a greater number of less deprived LSOA areas in less sparse urban areas than there are in all other area types. This does not belittle the fact that there are very many more deprived people living in urban areas, but shows that the least deprived sections of the population are also more prevalent in urban than in rural areas. This point is made simply to show that the least deprived areas are by no means all found in rural areas.

Analysis of IMD domains for urban and rural areas

The IMD is calculated by combining a number of 'domains' relating to Employment, Income, Education and skills, Health, Crime, Barriers to housing and services, and Living environment. Each domain is given a score. Scores are weighted, then added together to produce the overall level of multiple deprivation.

Figure 5 shows how each of these domains are distributed across each rural:urban classification type. Most show higher (worse) scores for urban areas, but for Housing and Environment this is not the case – village and hamlet areas both score much worse on Housing, and sparse hamlets score worse for Environment³. Health and Crime also have profiles that are similar to each other.

³ It may seem surprising that rural areas can score badly on environment. This is because it includes house condition, lack of central heating and road traffic accidents as well as air quality. State of the Countryside update – Index of Multiple Deprivation

It is not surprising that the barriers to housing and services domain score is lower as much of the calculation for this domain is based on distance to services.

What is also noticeable is that the Employment, Income, and Education and skills domains all have very similar profiles.

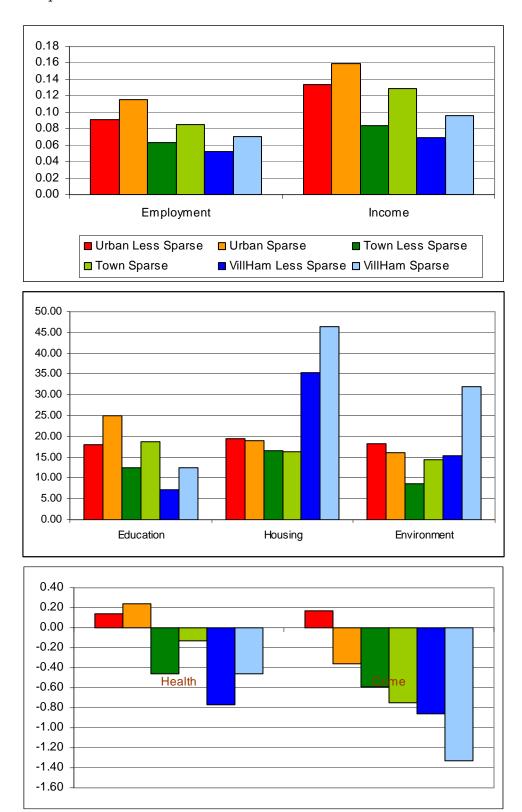


Figure 5 – Median scores for each domain of IMD 2007 by ONS rural:urban definition area type⁴

 $^{^4}$ For Health and Crime domains, a negative score equates to less deprivation State of the Countryside update – Index of Multiple Deprivation

Figure 6 shows the percentage of LSOAs in each area type that are in the highest quartile of scores – that is the 25% of small areas that are the most deprived. On most of the domains less sparse urban LSOAs have about 30% of their small areas in the worst quartile. In almost all other geographical areas lower proportions of LSOAs are in the worst quartile on each domain. However, Housing and Environment again stand out as being different, with over 70% of villages and hamlets scoring badly on Housing and access to services, and 50% of sparse villages and hamlets scoring badly on Environment.

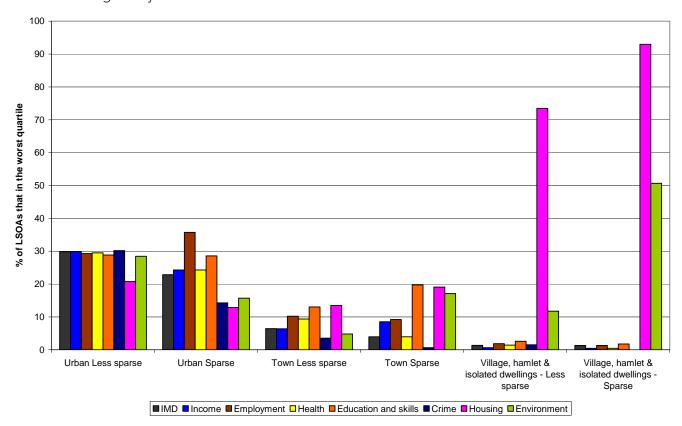


Figure 6 - % of LSOAs with scores in worst quartile by ONS rural:urban area type

Mapping rural deprivation

Figure 9 shows the overall IMD score for 2007⁵, grouped into fifths (quintiles) from the highest to lowest scores. The mauve colour shows the highest scores (most deprived) and the yellow shows the lowest scores (least deprived).

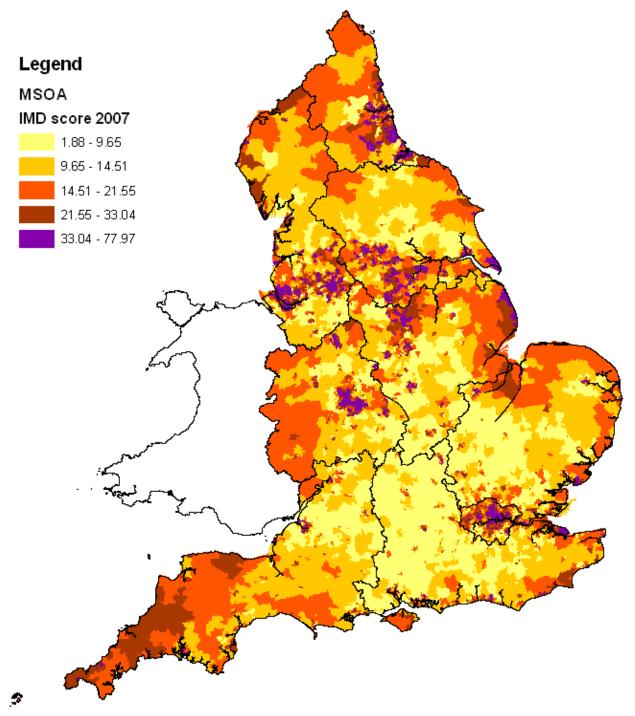


Figure 9 IMD Overall Score 2007 for all areas (high score = most deprived)

It is readily apparent that this is basically a map showing urban areas, with a few rural areas, such as West and North Cornwall, Dungeness, the Fens, the Lincolnshire coast, the Cumbrian coast and parts of the North East having a 'medium' level of deprivation. However, it is apparent that many parts of cities such as London have large suburban areas with low levels of deprivation.

⁵ For mapping, Middle Level Super Output Areas have been used, rather than Lower Level, to make the maps clearer and simpler.

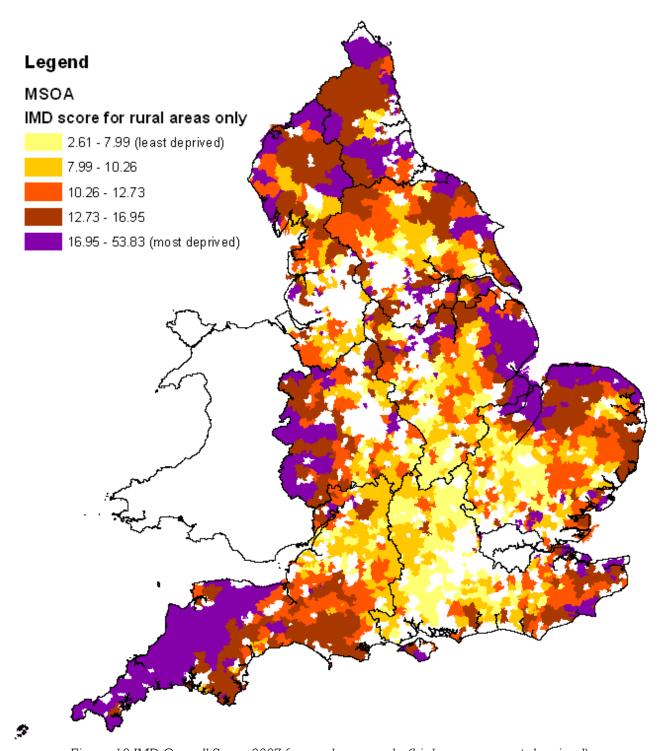
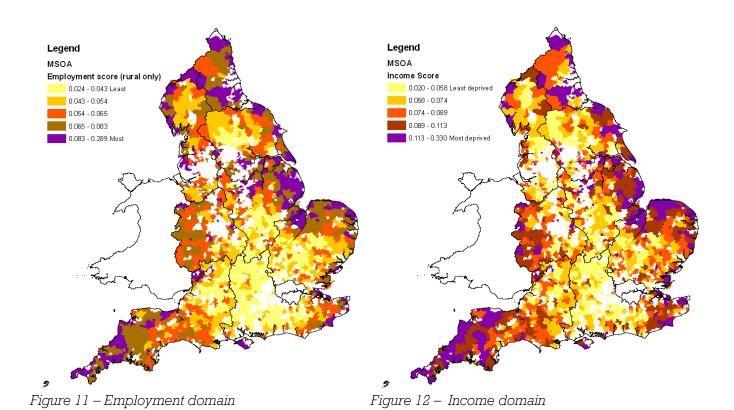
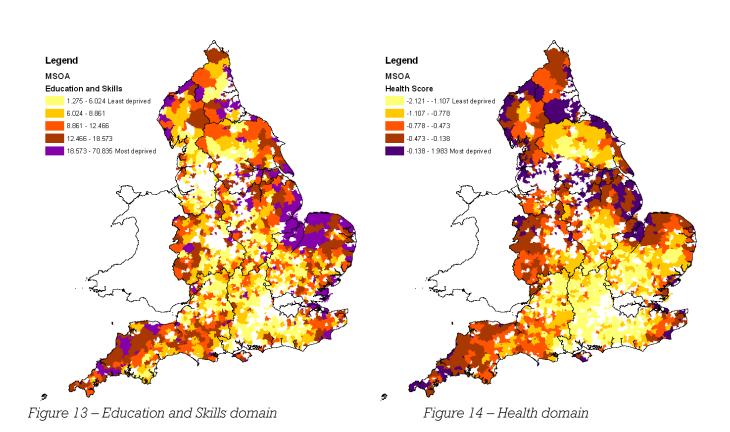


Figure 10 IMD Overall Score 2007 for rural areas only (high score = most deprived)

It is apparent that most areas defined by ONS as 'sparse' (see Annex 1) have high levels of deprivation, as do former mining areas on areas such as the North East, Yorkshire and the Humber and the East Midlands, as well as some areas less commonly thought to be deprived such as Kent, Essex and the Isle of Wight.

Figures 11 to 17 show maps for individual domains.





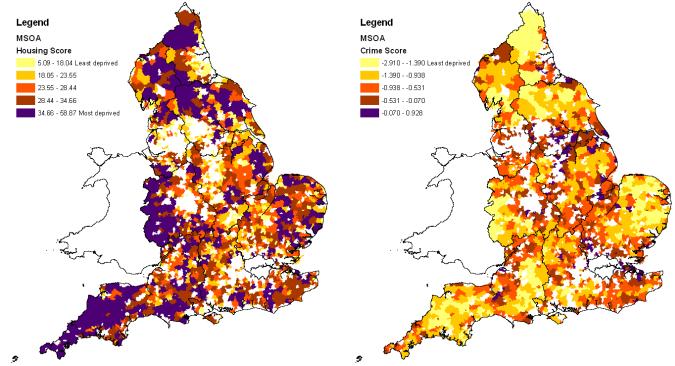


Figure 15 - Housing and services domain



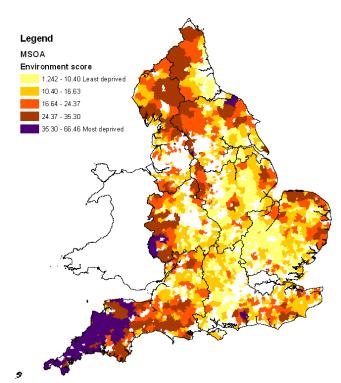
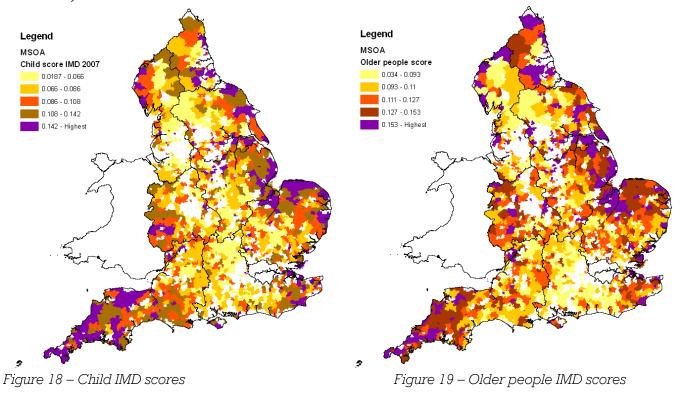


Figure 17 – Environment domain

It is striking that Figures 11 to 14 are remarkably similar, showing, broadly speaking, sparse areas and some ex-mining areas as deprived and most less sparse areas as less deprived. The only maps that diverge from this pattern widely are those for Housing and Services, and for Environment.

Younger and older people

Scores are also published for children and young people, and for older people (shown in Figures 18 and 19).



The patterns for older and younger people are largely similar, and roughly mirror those for the overall IMD score.

Are there rural areas that show similar patterns in terms of deprivation, as measured by IMD?

The analysis so far has shown that for many of the domains for the IMD similar patterns can be seen. Here we look at whether there are different areas of rural England that display markedly similar patterns of deprivation (or lack of it) to each other and how we can differentiate them. To do this we use a technique known as 'cluster analysis'. Cluster analysis is commonly used in market research, to 'classify' shoppers according to their spending patterns. The technique works by looking for the most similar people (or in this case, areas). Careful study of the groups found by cluster analysis is then used to characterise the cluster groups. Terms such as 'affluent greys' and 'aspiring singles' are often the result of cluster analysis.

For this analysis we show a map (Figure 20) that distinguishes seven types of rural area, in terms of the scores for each of the domains. Underneath the map the key differentiating characteristics of the groupings are described. Interpreting this analysis is not straightforward, but it seems that many areas score poorly on particular aspects such as indoor environment, housing, or access to services, while scoring better on other domains.

 $^{^6}$ Middle level Super Output Area level data have been used for this analysis. State of the Countryside update – Index of Multiple Deprivation

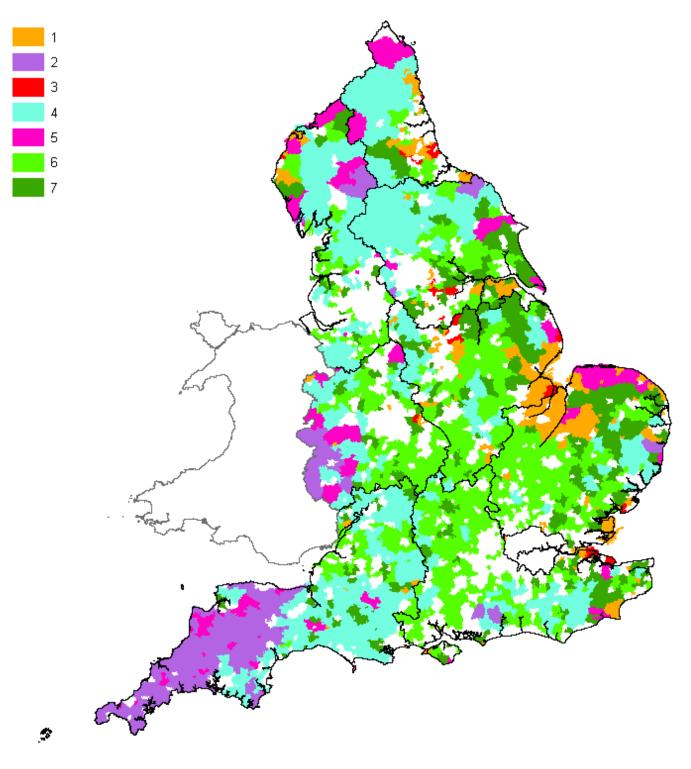


Figure 20 – Areas of similarity (cluster analysis) for rural areas (MSOA level data)

Key characteristics (a rough guide only)

- Group 1 Orange Poor on education (142 cases)
- Group 2 Mauve Low score on indoor environment and housing (70 cases)
- Group 3 Red Low scores for most domains, showing an 'urban' style of deprivation. (34 cases)
- Group 4 Light blue Generally affluent, but low score for geographical services sub domain (access to services) (244 cases)
- Group 5 Pink Poor on outdoor environment but good on housing (60 cases)
- Group 6 Light green Relatively affluent areas (503 cases)
- Group 7 Dark green Good on housing and crime (240 cases)

Mapping the change since 2004⁷

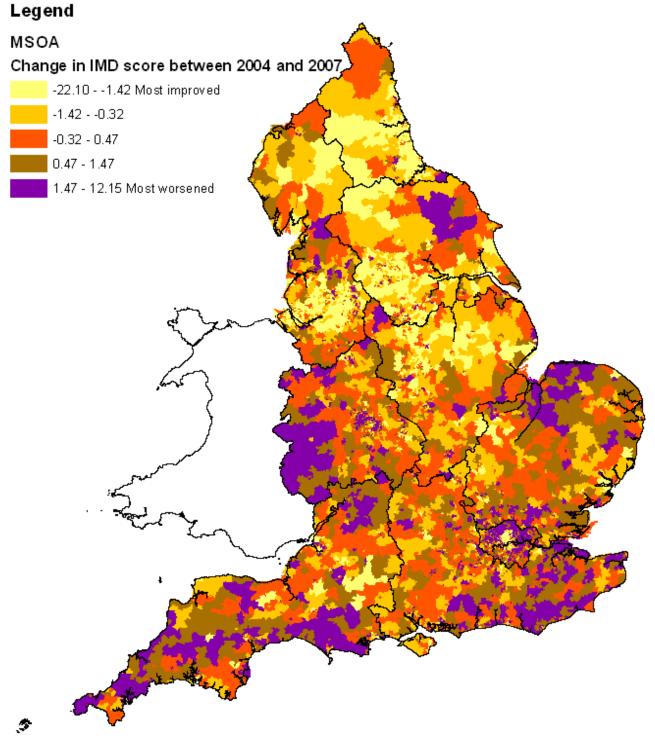


Figure 21 – Change between 2004 and 2007 (see note on Page 6 about comparisons)

Figure 21 seems to show that there is a 'north-south' divide in terms of change in the IMD in rural areas. Broadly speaking, while those north of a line connecting the Mersey and the Wash have improved, while those south of this have deteriorated, with sparse rural areas such as Herefordshire, Norfolk and parts of the South West faring especially badly – housing affordability is thought to have been a major factor here.

 $^{^{7}}$ As was pointed out on page 6, care has to be taken when comparing scores for 2004 and 2007. State of the Countryside update – Index of Multiple Deprivation

Figure 22 shows the change in median score by region and by urban:rural category. It is apparent that there is indeed a marked difference between changes in the North East, North West, Yorkshire and the Humber, the East Midlands and the rest. Virtually all categories in the Northern four regions have seen improvements in the averages, while all in the other more Southern regions have seen a deterioration.

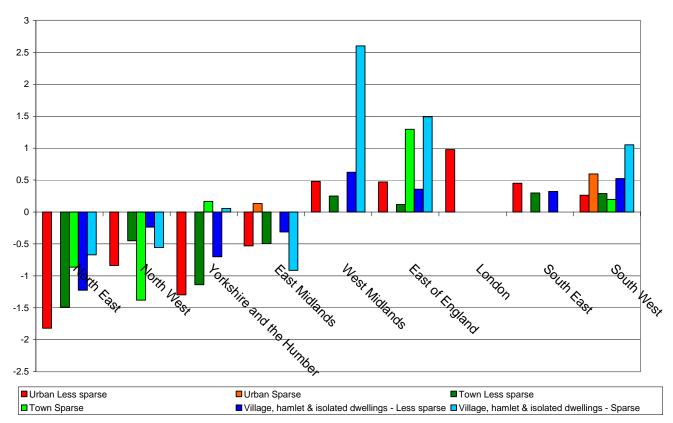


Figure 22 - Change in IMD median score by region and by rural:urban definition category.

Looking at Figure 21 again, however, it does not seem that this pattern shows rich areas becoming poorer while poorer areas become richer, but that those rural areas in the south that had been already relatively deprived are deteriorating.

Many urban areas, especially inner urban areas, have seen improvements, while suburbs have become worse. It is possible that the policy of targeting regeneration on the most deprived areas may have been effective in raising scores for those areas from the lowest levels, but that most rural areas have not benefited, and in some areas fallen behind.

Comparing analysis of the concentration of low income households with IMD areas

Data available in the National Travel Survey 2002-4 (NTS) makes it possible to analyse income quintile against 2004 IMD scores at the lower super output area level. The data are based on a sample of over 45,000 people for England. It allows us to analyse the data by settlement size⁸ and shows whether people with low incomes⁹ live in areas that are categorised as being deprived using the IMD.

⁸ At the time of analysis, available NTS data used settlement size as the best variable for urban:rural area. For this analysis 'Urban' is >10,000, 'Town' is 3,000 to 10,000, and 'Village/ Hamlet' is <3,000. There is no variable for 'Sparse'.

⁹ NTS uses equivalised income data, such that the relative income needs of households are taken into account. Larger households are reckoned to need higher incomes. State of the Countryside update – Index of Multiple Deprivation

It is clear that in urban areas there is a much greater likelihood of a low income household living in the same area as other low income households (Figure 23). 40% of those in the lowest income quintile lived in areas with the lowest fifth of IMD 2004 scores, compared with 13% in town sized settlements and just 4% for settlements of under 3000 population. 58% of those in the lowest income quintile (NTS) in village and hamlet sized settlements lived in areas that were in the highest two IMD quintile areas.

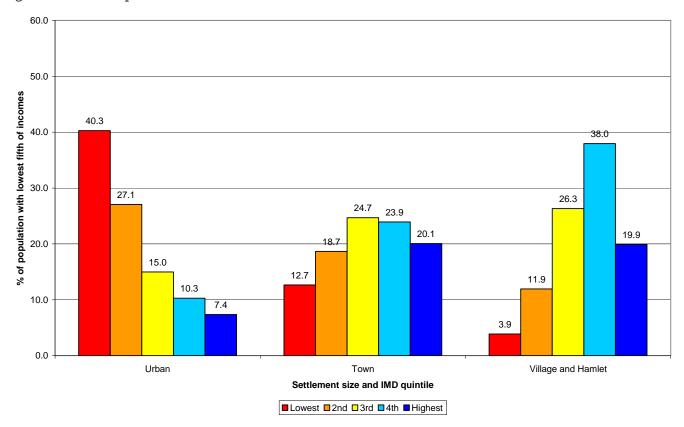


Figure 23 – Placement of low income households within IMD quintile Lower level Super Output Areas (2004).

Of course, there are fewer lowest quintile income households living in rural areas, so one would expect that those on lower incomes would be more likely to live in higher IMD score areas. In the NTS data 24.5% of those in urban areas were in the lowest income quintile, compared with 20.8% in towns, and 15.7% in smaller settlements. But this does not alter the conclusion drawn from Figure 23 that rural people with low incomes are more likely to live in areas classified by the IMD as less deprived.

Although having a low income does not necessarily equate to having a deprived IMD score in any area type, the distribution does tend to mean that the IMD is a poor indicator of the location of the majority of low income households in rural areas.

Summary

This analysis has shown that when the IMD is used to measure deprivation, it shows deprivation to be less concentrated in rural areas than in urban areas.

But it has also highlighted that the picture is not of a uniformly 'affluent' rural England. The distribution across different area types shows that the sparse areas show greater deprivation, while there is much variation in the scores across all rural area types.

Analysis of individual household incomes from 2002 to 2004 compared to 2004 IMD area data shows that in rural areas people with lower incomes are less likely than those in urban areas to live in deprived locations.

Discussion

The CRC's *Disadvantage Study* (CRC, 2006) investigated aspects of deprivation, disadvantage and exclusion in rural areas in great detail. The report concluded that there are characteristics of life in rural areas that mean the use of summary measures, such as IMD, that produce area based scores for deprivation, do not give a full picture. Rural deprivation has some particular characteristics which are not picked up by the indicators and the methodology underlying the IMD. In particular:

- deprivation in rural areas tends to be dispersed and not concentrated in small areas as it is in urban areas (see Figure 22) and in general;
- the factors that contribute to deprivation in rural areas are often different than those in urban areas. People with low incomes in rural areas tend to be working and not claiming benefits. There is a tendency for people who are eligible not to claim benefits, especially older people. People with poor health are less likely to have called upon health services, particularly in the case of poor mental health, so are not recorded in the health service statistics.

More recently, analysis conducted for the CRC by Oxford Consultants for Social Inclusion (2008) has shown that only 158 (or 2.4%) of the 6496 (lowest 20%) most deprived Lower level Super Output Areas on the IMD, are rural. Even when the data are analysed at the Census Output Area level (populations of about 250 to 300), only around 3.6% of the most deprived 20% are in rural areas, which means that more, but by no means all, rural deprivation is picked up.

However, using other indicators of deprivation, the OCSI report reveals that for the population of rural England:

- 18% of all people with limiting long term illness;
- 16% of those claiming pension credit guarantee;
- 15% of all adults with no qualifications;
- 13% of benefits claimants; and
- 14% of those in housing with no central heating.

Similarly, figures from the Department for Work and Pensions, published in this year's *State of the countryside* report (CRC, 2008) estimated that in 2006, 17% of households in rural areas were living below the poverty line.¹⁰

OCSI's analysis at the local level has provisionally identified the types of rural areas that are most likely to be deprived based on analysis of the 1,178 most deprived Census Output Areas. These are:

¹⁰ households with an income of less than 60% of the median income after levels are adjusted to take account of household size (known as 'equivalisation').

Rural:urban area type Provisional socio-economic classification of deprived rural

areas

Small town and fringe Manufacturing economy with high levels of social housing

Older people and social housing Younger families and terraced housing

Older people and private flats

Villages Accessible villages with high levels of social and terraced housing

Agricultural areas with poor quality housing

Older workers and private accommodation in poor quality

Hamlet & isolated Hamlets with terraced housing dwelling Remote agricultural areas

Older people and poor quality private housing

In general, housing type and quality appear to be the most common characteristic identifying rural disadvantage.

The findings from analysis of the IMD in this update tend to support the picture of rural deprivation shown by the OCSI analysis and our earlier Disadvantage Study. Very few rural LSOAs have concentrated deprivation and in many relatively affluent rural areas there are people suffering deprivation. The presence of rural people who need support to move out of deprivation will not be 'picked up' by an approach that looks at average scores for geographic areas, even at a low spatial scale.

The analysis which breaks down the IMD into its component domains shows that the factors these measure are not as strongly linked in rural areas as in urban areas. The model of multiple deprivation which associates low levels of educational qualification, poor employment levels and low incomes, which in turn influence health and poor housing with high crime rates and a poor environment, is more applicable in areas of concentrated deprivation in large towns and cities.

The overall conclusion of this analysis therefore, is that whilst analysis of the IMD shows some interesting patterns of deprivation across rural areas, there is a strong need to use other measures in addition to give a full picture of rural deprivation and provide a strong evidence base for policies designed to address rural disadvantage.

References

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Noble M., Wright G., Dibben C., Smith, GAN., McLennan D., Anttila C., Barnes H., Mokhtar C., Noble S., Gardner J., Braswell S., Covizzi L. and Lloyd M. (2004), *The English Indices of Deprivation 2004*, Office of the Deputy Prime Minister, London

Oxford Consultants for Social Inclusion (2008) Deprivation in rural areas: Quantitative analysis and socio economic classification. CRC, Cheltenham

Further information

The tables included in this update, as well as additional national and regional analysis undertaken in the production of this bulletin will be made available in Excel format on the CRC's website:

www.ruralcommunities.gov.uk

Contact

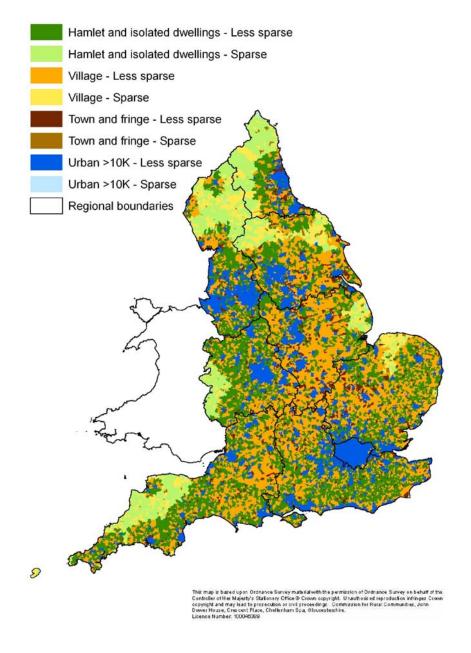
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Annex One

Definition of rural used in this report

In 2004, a project involving the Countryside Agency, Department for the Environment, Food and Rural Affairs (Defra), Office of the Deputy Prime Minister (now the Department for Communities and Local Government (DCLG), National Assembly of Wales and the Office for National Statistics (ONS) produced the official definition of rural and urban areas. It defines settlements of over 10,000 people as 'urban', and defines smaller 'rural' settlements into three categories: 'town and fringe', 'villages', or 'hamlets and isolated dwellings'. In addition, settlements are defined as to whether they are in 'sparse' or 'less sparse' areas. This definition can be used at most official levels of data collection from individual address and postcodes up to Ward and Super Output Area. Under this definition, people living in rural areas comprise 19.3% of the population, about half of whom live in small towns. Only 3.1% live in settlements smaller than villages and only 1.5% are defined as living in sparse areas. Figure 24 shows how the definitions are distributed around England. For more information, please visit: http://www.statistics.gov.uk/geography/nrudp.asp

Figure 24: ONS rural and urban definition, 2004.



For more information about different administrative and statistical geographical units, please visit:

http://www.statistics.gov.uk/geography/default.asp

Annex Two

Index of Multiple Deprivation

The following is taken from Chapter One of the DCLG report on the Indices of Multiple Deprivation 2007. Further detail on its calculation can be found in that report. http://www.communities.gov.uk/communities/neighbourhoodrenewal/deprivation/deprivation/7/

The Index of Multiple Deprivation 2007 (DCLG 2007) is a measure of multiple deprivation at the small area level. The model of multiple deprivation which underpins the IMD 2007 is the same as that which underpinned its predecessor – the IMD 2004 (Noble et al., 2004) and is based on the idea of distinct dimensions of deprivation which can be recognised and measured separately. These are experienced by individuals living in an area. People may be counted as deprived in one or more of the domains, depending on the number of types of deprivation that they experience. The overall IMD is conceptualised as a weighted area level aggregation of these specific dimensions of deprivation.

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