Highland CPP – Board

3rd June 2015

Deprivation and Inequalities – Rural Analysis

Report by the Head of Policy and Reform and Head of Health Improvement

Summary
This report provides an up-date for the CPP Board on the work of the Health Inequalities Group to develop a joint understanding of deprivation and inequalities in rural Highland.

1.   Background
1.1   The CPP Board agreed in 2014 that one of the new priorities for the CPP is, 'To tackle deprivation and inequalities including by improving access and connectedness for communities.' This was motivated partly by the acknowledgement that the Scottish Index of Multiple Deprivation (SIMD) was less useful for understanding patterns of deprivation in rural communities and that to address inequalities across the region the CPP needed a better and joint understanding of where partnership intervention could have the greatest impact.

1.2   Since October 2014 the Board has been advised that work on this matter was being taken forward through the Health Inequalities Group and quarterly progress has been reported through the SOA Development Plan.

1.3   The last up-date (March 2015) stated that:
          "Initial HIE briefing on fragile areas was provided to members of the
          Planning Committee and partners in November 2014. Wider CPP
          views to be gathered and discussed at Health Inequalities Group
          March 2015. Recommendations on CPP view of fragility and what
          that means for intervention to be presented to the Board in June
          2015."

1.4   This report up-dates the Board on the work done through the Health Inequalities Group. The Group is grateful for the analytical support it received from staff in Public Health, NHSH, Highland Council and HIE.

2.   The process so far
2.1   The Health Inequalities Group was keen to try and develop a partnership understanding of deprivation / inequalities / need in rural areas. With HIE's recent review of their 'fragile areas' in 2014 this provided an opportunity to consider the data all partners held that might be combined to be of use. The group arranged for briefings on the 'fragile areas' defined by HIE and the 'fragile areas' defined by Highland Council with a view to inviting partner

discussion on these and any contributions of partner intelligence that might develop the view of fragility. Health data for example was seen to be important particularly given the CPP's interest in reducing health inequalities, but lacking from current definitions of 'fragile areas'.

2.2   The group was made aware of a new approach that was being used by the Scottish Government to support the distribution of EU LEADER funds. This was a new tool using further data sets to map the socio-economic performance (SEP) of rural Scotland. This was of interest because it included a more comprehensive set of indicators, including health data. The 20 indicators used are attached at Annex 1.

2.3   The group brought in expertise on socio-economic data and constructing indices to highlight the pros and cons of all three approaches. This involved Ian Douglas (Public Health, NHSH), Cameron Thomas and Alison Clark (Highland Council) and Ewen Sneddon (HIE). Ian and Cameron then produced a report with technical advice. This is attached at Annex 2.

2.4   The report at Annex 2 highlights that:
1. The classification of fragility currently used by the Council and HIE are similar and readily understood.
2. Maps 1 and 2 (page 6 of the Annex) shows the mapping of fragility for both the Council's and HIE's indices. Sutherland, Wester Ross, north Skye, Lochalsh and Lochaber show most fragility in both.
3. The SEP index takes a similar approach, using some of the indicators used by HIE for economic performance, but includes a wider set of indicators that is likely to be of interest to all CPP partners. Map 3 illustrates the index.
4. Table 3 in the Annex highlights the remote small towns that show as the worst performing in the SEP index and highlights those not included in either of HIE's or the Council's fragile areas work. The Board may want to comment on the usefulness of this information in considering intervention in small towns.
5. Table 4 in the Annex shows the relationship between the Council's fragile area scores and the SEP index score. This lists 16 communities that the COG may view as areas that the partnership may wish to focus on.
6. The three indices in use have all been developed for different reasons. The SEP index is the most comprehensive to date for partner interest, but as with all data, there are limitations. Appendix 2 of the Annex provides a critique of the SEP indicators.
7. It would be possible to build on the SEP indicators, adding indicators such as affordable housing (including fuel poverty), the nature and seasonality of employment (full and part-time) and a consideration of future demographic change. However it is not clear whether this might tell us anything new from the information we already have.

3.   Next steps
3.1   The analytical work shows that the CPP can:
1. Use the regional fragile indices currently in use – but they do not

capture indicators of interest for all partners;

2. Use the SEP index – it is more comprehensive and in use by the Scottish Government although could be further improved – (for example the use of Census data means time lags between up-dates);

3. Spend more time assessing the 'worst' performing/ most fragile areas across the three indices – although work done to date is useful;

4. Build on the SEP index with the indicators suggested in 2.4.7 above, although officer time to do work would have to be freed up;

5. Commission more work to create a new tool.

3.2   We need to bear in mind that the CPP wants to reduce inequalities in rural as well as urban areas and that the new Community Empowerment legislation will require CPPs to reduce inequalities. Therefore the fundamental question for the Board is whether the analysis attached in Annex 2, and in particular the areas identified in Table 3 and Table 4, is sufficient to begin to agree where the CPP should focus their efforts.

3.3   The view of the Chief Officers Group is that it is sufficient, particularly if we can agree that intervention would also mean sensitive engagement with residents in the areas identified including their views of their assets as well as their understanding of what is needed – so any partnership interventions would not be driven by national data sets alone.

3.4   It is worth noting too that the CPP has another priority 'To engage in dialogue with communities in order to empower them to participate in service planning and delivery.' To help with this the Highland Third Sector Interface is currently undertaking mapping of voluntary activity.   This information, particularly for the potential rural areas identified, would help us to consider the scope for voluntary action to improve outcomes and the need for the partnership to support it.

3.5   This approach to targeting CPP focus to reduce inequalities in rural areas could also support the work of the Strategic Community Learning and Development Group within the CPP which is undertaking work to identify where to focus partnership efforts for Community Learning and Development.

4. Recommendation

4.1 The Board is invited to comment on the progress made by the Health Inequalities Group and the analytical work produced in Annex 2.

4.2 The Board is asked to agree:
1. That there is sufficient analysis at this time from the three indices in use to identify rural areas for the CPP to focus efforts to reduce inequalities.
2. That the 16 rural communities listed in Table 4 and the small rural towns listed in Table 3 are the focus for CPP collaboration to reduce inequalities. This would complement the work underway in the four areas of urban deprivation.

4.3 If the priority areas above are agreed, the Board is asked to consider how best to progress this work together given the CPP Board's agreement that we '.. tackle deprivation and inequalities including by improving access and connectedness for communities.'

Authors: Carron McDiarmid, Head of policy and Reform and Cathy Steer, Head of Health Improvement (covering report), Annex 2 authors are Ian Douglas Health Intelligence Specialist (NHSH) and Cameron Thomas, Research Officer (Highland Council).

Date 27.5.15

The SEP Indicators

Table 4: The SEP Indicators Strategic Objective	Indicator	Source
Wealthier/ Fairer		
1	Median net equivalent household income after housing costs per week (£), 2008-9.	SNS
2	Per cent of families on low income (less than 70% median) and materially deprived, 2008-09	SNS
3	Per cent of population dependent on benefits (SIMD Income deprivation rate) 2012	SIMD
4	Unemployed as per cent of all people aged 16-74 2011	Census 2011
5	Average drivetime to key services (GP, petrol station, post office, primary school, secondary school, retail centre) 2012	SNS/SIMD
6	Average travel time by public transport to key services (GP, post office, retail centre) 2012	SNS/SIMD
Healthier		
7	Per cent of all people with one or more long term health conditions 2011	Census 2011
8	Per cent of all people assessing their general health as 'very good' or 'good' 2011	Census 2011
9	Per cent of all people whose day-to-day activities are limited by a long-term health problem or disability 2011	Census 2011
10	Comparative illness factor: standardised ratio 2011	SNS/SIMD
Safer/ Stronger		
11	Population change, 2001-2011 (% change)	Census 2001, 2011
12	Change in the economically active population, 2001-2011 (% change)	Census 2001, 2011
13	Old Age Dependency Ratio (persons 65+ as per cent of persons 16-64) 2011	Census 2011
14	Per cent change in the number of business sites 2008-13 (Intermediate geography)	SNS/IDBR
15	SIMD Crimes per 10,000 total population, 2010-2011.	SIMD
16	Rate of emergency stays in hospital 2007-10 (Scotland = 100)	SIMD
Smarter		
17	All people aged 16 and over: No qualifications. Expressed as % of expected count	SNS/SIMD
18	Percentage of 16-19 year olds not in education or training 2009-11	SNS
19	Per cent of population 16-74 who have level 4 qualifications or higher 2011	Census 2011
20	Per cent of population 16-74 who are in occupation groups 1-3 2011	Census 2011

Supporting the Highland Community Planning Partnership to identify areas of rural population need

Ian Douglas, Health Intelligence Specialist, NHS Highland and Cameron Thomas, Research Officer, the Highland Council

Background

The Highland Community Planning Partnership (CPP) requires an evidence based tool to support the priority of tackling deprivation and inequalities in rural areas, including improving access and connectedness for communities.

There are many different types of rural area in Highland and there is need to differentiate between these in order to best focus resource.

It is recognised by the CPP that the Scottish Index of Multiple Deprivation does not adequately identify deprived rural areas. In rural areas, poverty and deprivation are more spatially dispersed than in urban areas. In addition other factors, such as population decline, not included as a factor in SIMD, may particularly disadvantage rural areas with dispersed populations[1].

Highlands and Islands Enterprise (HIE) and the Highland Council (HC) have separately developed indices that try to capture factors that impact specifically on rural areas. These 'fragile area' indices bring together indicators that are considered specific to experience in rural areas.

In March 2015 the James Hutton Institute produced a report for the Scottish Government to target support to small businesses in rural Scotland over the course of the LEADER PROGRAMME (2014-20). This work created an index that combines 20 indicators organised to reflect four strategic objectives of the Scottish Government (Wealthier/Fairer, Healthier, Safer/Stronger and Smarter). The overall aim focuses on mapping rural socio-economic performance (SEP) and provides a Scotland wider overview. The index shows that different kinds of rural area have different profiles of need, and that rural policy needs to be fine-tuned to territorial context.

All three of these tools use the Scottish Government's small area data zone geography as their area building block. There are currently 292 data zones in Highland. 148 are classified as either accessible or remote rural areas by the Scottish Government 2011-12 Urban Rural 6-fold classification. Over 50 percent of the Highland population lives in these areas. There are nearly 600 data zones in the area covered by HIE that covers 7 CPPs.

This paper briefly reviews the three indices and the indicators used in their construction. Overview maps of the indexes are provided.

---

[1] Scottish Index of Multiple Deprivation (2012) http://www.gov.scot/Topics/Statistics/SIMD/FAQRuralIssues

The HIE and Highland Council Fragile Areas

The HIE Fragile Areas Review (2007) concluded that:

> [2]*Fragile areas are characterised by weakening of communities through population loss, low incomes, limited employment opportunities and remoteness.'*

This statement could equally well apply to the approach taken by the Highland Council in their work on fragility. There is a convergence and overlap in the indicators used by both organisations and both tools ground fragility in three basic components: the human, the economic and the spatial. Although the methodologies have different emphases – with HIE focusing on economic fragility and the Council looking at wider socio-economic fragility - the result in a list of areas that can be organised in a hierarchy according to the understanding of the state of fragility.

After review of potential indicators, HIE selected four for use in their latest index: population change, drive time to a mid-sized service centre, median household income and unemployment. Data zones categorised as urban and accessible rural by the Scottish Government Urban/rural classification 2011-12 were removed from the analysis and the indicators converted to scores between 1 and 5 and the four indicators added together. The cut-off points appear to be based on subjective thresholds. Data zones with an overall score of 7 or more are considered 'fragile'. Further analysis and adjustment is then undertaken for data zones that contain mainland and island areas. The HIE index is used by the organisation across seven CPP areas.

The Highland Council classification of fragility is very similar. Measures include population density, change in population, population age structure, median household income, benefits claimants and drive time / public transport access to local services. The decile distribution of each indicator is combined to create the overall fragility score for each data zone area. Only data zones classified as remote rural by the Scottish Urban Rural Classification are included in the analysis. The index applies to 121 data zones in Highland, just over 40 percent of the population live in these areas.

Face-validity is potentially an important factor for those using and explaining such tools. The methodologies used by both organisations to combine individual indicators into single indices are transparent and readily understood**.**

Rural Socio-Economic Performance (SEP) Index

The SEP index created by Andrew Copus and Jonathan Hopkins of the Hutton Institute combines twenty indicators that reflect the performance of rural areas across the first four themes of the National Performance Framework (Wealthier/Fairer, Healthier, Safer/Stronger and Smarter). Data is drawn from three key sources: Scottish Neighbourhood Statistics (SNS), Census 2011 and from component indicators of SIMD domains. The data focuses on the 2,014 data zones in Scotland classified as rural or rural small towns.

---

[2] Highlands and Islands Enterprise *Fragile Areas Review, 2007*

The indicators are combined in a manner analogous to that used by the Highland Council. Primacy has again been place on the transparency of construction of the index.

In the SEP, each indicator is converted to a score, on a scale of 1-10 (10 = best performing and 1 = poorest performing) based upon the decile distribution of the data. Each of the four strategic objectives is given a score based upon the unweighted average of its individual indicators. The overall SEP is calculated from the unweighted average of the four Strategic Objectives. Lower scores indicate the worst performing areas.

The scores for the four Strategic Objectives are positively correlated (table 1). This means that when the scores are combined they will not generally cancel each other out and the overall SEP should identify 'difference in experience' between data zones.

Table 1: Correlation matrix, showing the relationship between the four strategic objectives and the overall SEP index

	Wealthier/Fairer	Healthier	Safer/Stronger	Smarter	SEP Index
Wealthier/Fairer	1.00				
Healthier	0.38	1.00			
Safer/Stronger	0.18	0.54	1.00		
Smarter	0.57	0.55	0.48	1.00	
SEP Index	0.69	0.77	0.70	0.90	1.00

Note: All coefficients significant at 0.01 level (2 tailed)

The SEP flags the importance of the relationship between small towns and their related rural economies. The patterns are complex, but better performance nationally is seen in the group of data zones in accessible rural areas. At the other end of the spectrum, the poorest performance is associated with remote small towns. This parallels evidence from SIMD that highlights that some populations living in geographically isolated small towns in Highland can experience particular concentrations of deprivation.

Comment

All three indices have been constructed using similar approaches. Indicators reflecting aspects of rural experience have been combined using very simple methods to produce overall measures of 'fragility' and rural economic performance. There are considerable overlaps in the use of indicators –all four HIE indicators feature in the SEP.

The HIE and HC indices have the appeal of being straightforward to construct and understand. The work by the SEP team brings together more indicators and as a national measure might be developed as an alternative to SIMD in rural monitoring and funding. The SEP uses mainly standard data sets published for data zones and this makes analysis relatively straightforward. The organisation of the indicators by national strategic priorities provides a link to national performance measurement. The individual indicators within the Wealthier/Fairer, Healthier and Smarter themes are positively correlated suggesting that the measures are related. The composition of the Safer/Stronger objective looks less statistically coherent but alternative data is limited. The correlations between the scores of the four objectives suggest that they should work in combination to differentiate between data zone areas in the overall SEP measure.

Individual indicators are reviewed below, but the use of Census data in the SEP construction presents a problem for the frequency of any potential update. All three indices rely on data published nationally.

All three tools use the Scottish Urban Rural 6-fold data zone classification to define the extent of the geographic coverage for analysis. However, different area exclusions are used in each index.

Table 2 shows the difference in the area types covered by the three indices reviewed.

Table 2: Percentage of the Highland population by SGURC (6-fold) and potential coverage by index

	Large Urban Areas	Other Urban Areas	Accessible Small Towns	Remote Small Towns	Accessible Rural	Remote Rural
Percentage of the Highland population	0.0	26.2	0.0	23.0	10.5	40.4
Highland Council Fragile Areas - coverage						X
Highlands and Islands Enterprise Fragile Areas [1]						X
SEP -coverage			X	X	X	X

1. Includes additional areas and sub division of data zone geography

The use of unweighted domains in the SEP would make it technically easy to add weightings if this were required to prioritise a particular theme. To preserve face validity this would require reference to a further evidence base.

The inter-relationship between health, disadvantage, inequality, child hood development and education, employment, the social and physical environment and economic growth should be at the heart of Community Planning. The SEP index is the only tool that includes a measure of population health.

Recommendations

The SEP index shows that different kinds of rural area have different profiles of need. A Fragile Area approach is already embedded within the work of HIE to target resource across multiple CPPs. A similar set of constituent indicators and methodology is also referenced by Highland Council in trying to understand differences in rural experience in relation to demographic, social and economic dynamics.

All three index approaches examined are analogous and overlap in terms of indicators. However, all were developed for slightly different purposes.

The Highland CPP needs to agree a common definition that supports the work of tackling deprivation and inequalities in rural areas. Deprivation and inequality have multiple constituents and the question would seem to be whether none, any or all of the existing tools identify the elements of the stated priority.
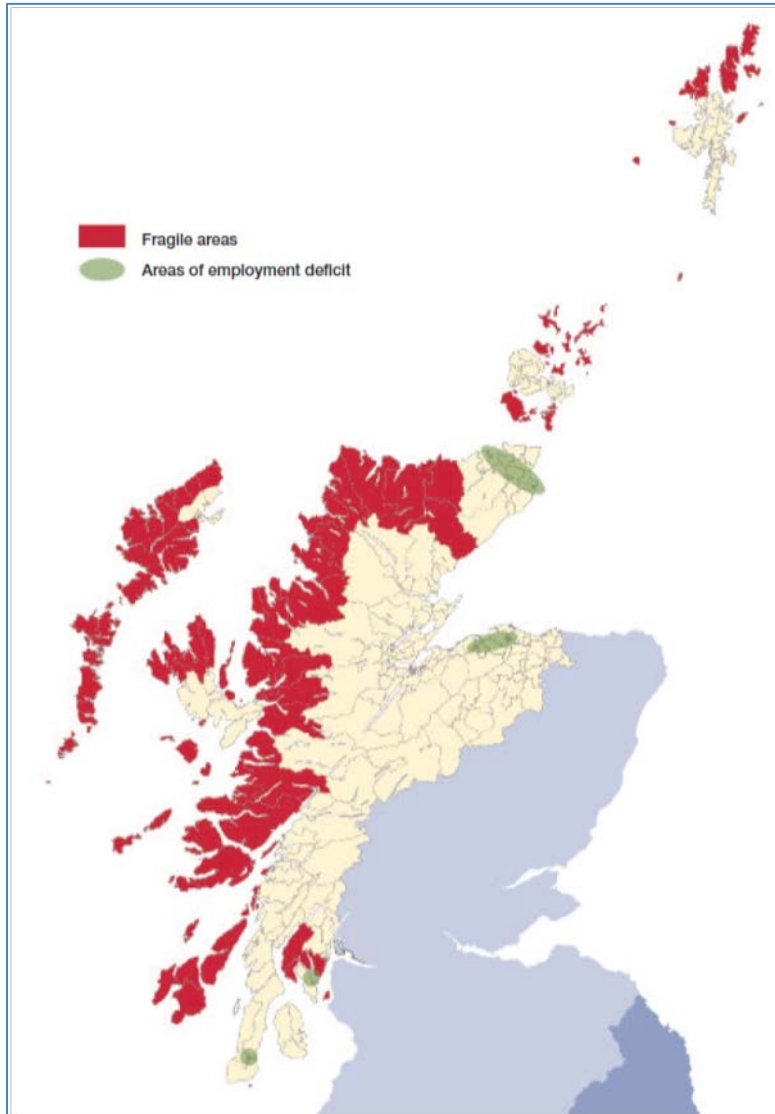
A number of options exist for the Highland CPP

- Adopt one or both of the locally developed fragile areas indices
- Adopt the SEP tool
- Further assess the 'worst' performing / most fragile areas in all three indexes
- Develop a new tool - this would require a review of available indicators, developing and agreeing a methodology and the target geography for inclusion.
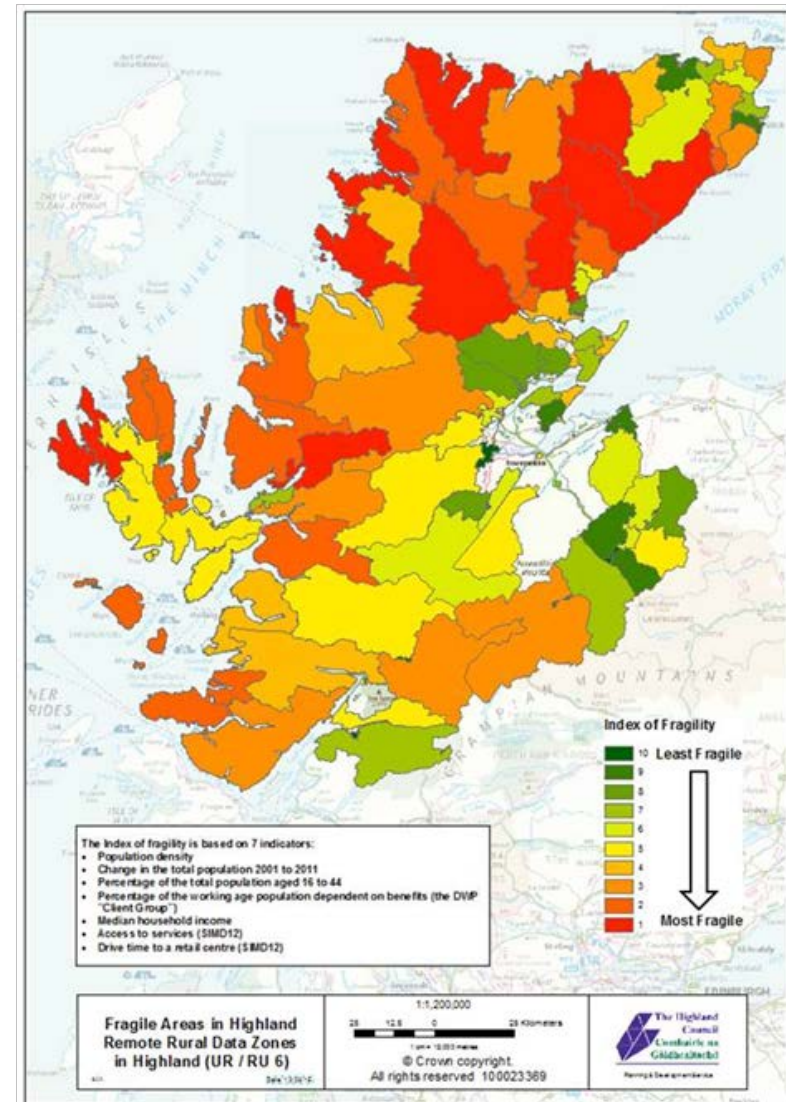
Alternative indicators are reviewed below.

There are different potential costs attached to these options in terms of resource and time required.

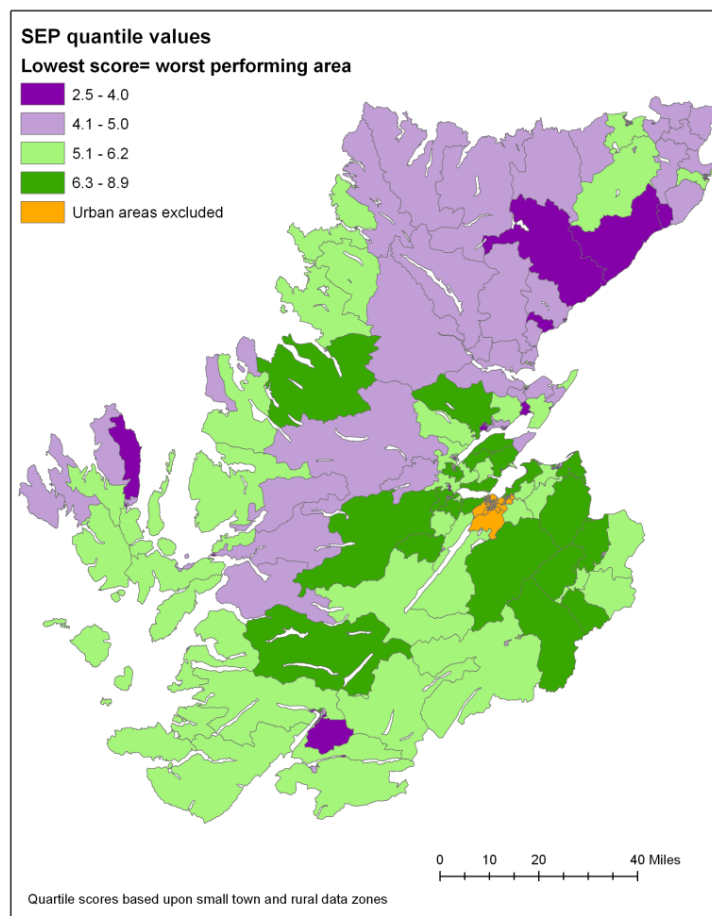The methodology should remain transparent for the end user.

Appendix 1: Maps and supporting analysis
Map 1: Highland and Islands Fragile Areas

Map 2: Highland Council Fragile Areas

Fragile areas
Areas of employment deficit

Index of Fragility
10 Least Fragile
9
8
7
6
5
4
3
2
1 Most Fragile

The Index of fragility is based on 7 indicators:
- Population density
- Change in the total population 2001 to 2011
- Percentage of the total population aged 16 to 44
- Percentage of the working age population dependent on benefits (the DWP "Client Group")
- Median household income
- Access to services (SIMD12)
- Drive time to a retail centre (SIMD12)

Fragile Areas in Highland
Remote Rural Data Zones
in Highland (UR / RU 6)

1:1,200,000

© Crown copyright.
All rights reserved. 100023369

The Highland Council
Comhairle na Gàidhealtachd

Map 3: SEP INDEX – Highland data zones

SEP INDEX: Unweighted average of the four strategic objective scores.

Directorate of Public Health
Health Intelligence & Knowledge Team
Assynt House

NHS Highland

Date: May 2015

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office. © Crown copyright and database right. All rights reserved. 100010825 2015

Contains data from and derived from Data Zone Boundaries 2001. Copyright the Scottish Government ©Crown copyright and database right (2015). Urban Rural Classification, 2011-12 copyright Scottish Government ©Crown copyright.

Table 3: SEP Index – Highland data zones 'worst' performing areas

Data zone	Data zone name	2011 population	SEP INDEX	Urban Rural Classification
S01003937	Seaboard South	745	2.7	Remote Rural Areas
S01003924	Invergordon Strath Avenue	507	3.0	Remote Small Towns
S01003968	Helmsdale & Kinbrace	864	3.0	Remote Rural Areas
S01003978	Wick South Head	512	3.0	Remote Small Towns
S01003722	Kinlochleven	896	3.1	Remote Rural Areas
S01003736	Caol North East	799	3.1	Remote Small Towns
S01003882	Nairn Moss-side	500	3.1	Remote Small Towns
S01003928	Alness Firhill	840	3.1	Remote Small Towns
S01003878	Ardersier	1089	3.2	Accessible Rural Areas
S01003907	Dingwall Central	748	3.2	Remote Small Towns
S01003969	Dunbeath	762	3.2	Remote Rural Areas
S01003977	Wick Pultneytown South	491	3.2	Remote Small Towns
S01003985	Wick Hillhead North	743	3.3	Remote Small Towns
S01004001	Castletown	620	3.3	Remote Rural Areas

Areas marked in orange excluded from Highland Council and HIE fragile areas

The table looks only at the data zones areas with a population total of 10,000.

Figure 1: Relationship between overall SEP unweighted values and Highland Council fragile area scores in 121 rural data zones
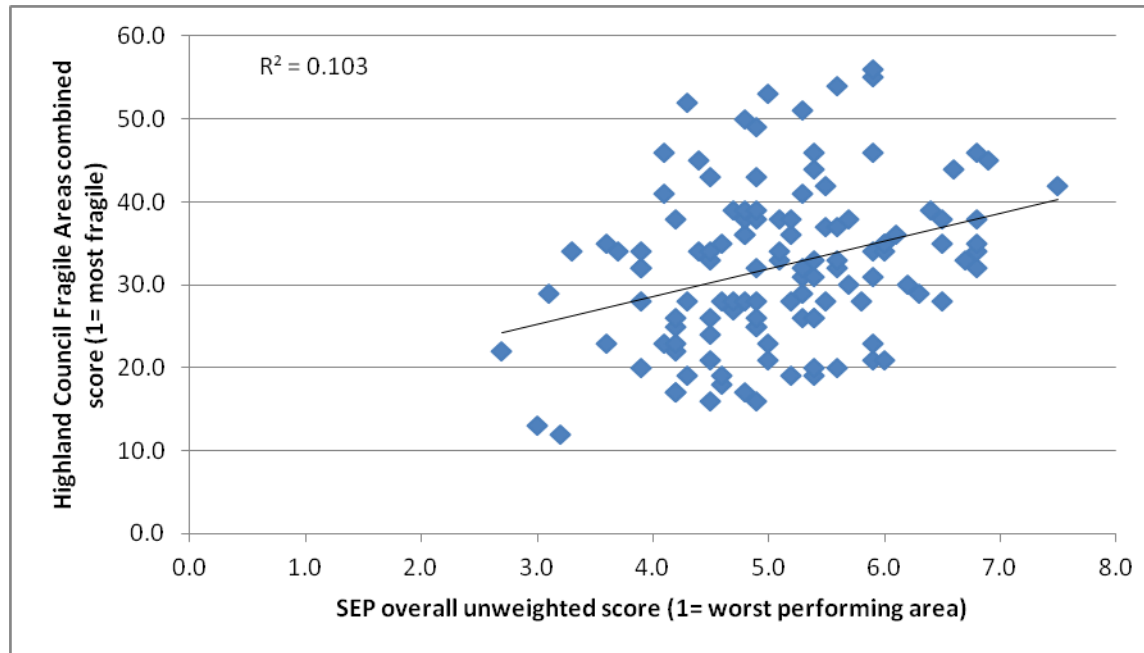
There is a positive correlation between the two indices (0.30 Spearman's rank correlation). The correlation is relatively modest and regression on the SEP index would account for 10.3 percent of the variation in the Highland Council Index.
That table below flags that a number of the 'worst performing' Highland data zones are also identified as fragile area in the Highland Council tool.

Table 4: Relationship between Highland Council fragile area scores in 121 rural data zones and SEP overall index values

Data zone	Data zone Name	Highland Council Fragility score (lowest =most fragile)	SEP overall index score	2011 population
S01003969	Dunbeath	12.0	3.2	762
S01003968	Helmsdale & Kinbrace	13.0	3.0	864
S01003988	Melvich	16.0	4.5	490
S01003841	Duirinish	16.0	4.9	609
S01003846	Lochcarron	17.0	4.2	757
S01003959	Rosehall	17.0	4.2	747
S01003965	Rogart	17.0	4.8	576
S01003990	Durness	18.0	4.6	522
S01003871	Dunvegan & Waternish	19.0	4.3	771
S01003953	Aultbea	19.0	4.6	577
S01003963	Achiltibuie	19.0	5.2	474
S01003970	Stoer & Scourie	19.0	5.4	631
S01003911	Skye North East	20.0	3.9	626
S01003933	Poolewe & Badachro	20.0	5.4	701
S01003779	Skye East & Raasay	20.0	5.6	501
S01003973	Kinlochbervie & Achfary	21.0	4.5	450

The table looks only at the data zones areas with a population total of 10,000.

Appendix 2: FRAGILITY IN HIGHLAND – POTENTIAL INDICATORS

Strategic Objective		Indicator	Source	Comment
HUTTON INSTITUTE: MAPPING RURAL SOCIO-ECONOOMIC PERFORMANCE(SEP) 2015				
Wealthier/ Fairer	1	Median net equivalent household income after housing costs per week (£), 2008-9.	SNS	A good measure but dated and there is uncertainty over whether it will be updated (source: Bramley for IS and Councils including Highland). Could consider using gross income, rather than net income, in combination with an additional house affordability indicator (see suggested additional indicators below). Do we need both 1 and 2?
	2	Per cent of families on low income (less than 70% median) and materially deprived, 2008-09	SNS	A good measure but dated and there is uncertainty over whether it will be updated (source: Bramley for IS and Councils including Highland). Do we need both 1 and 2?
	3	Per cent of population dependent on benefits (SIMD Income deprivation rate) 2012	SIMD	Recognised indicator but not easily updateable between SIMD releases: next SIMD release expected Autumn 2016.
	4	Unemployed as per cent of all people aged 16-74 2011 Census 2011	Census 2011	Recognised indicator but not updateable. Arguably unemployment for age range 16 to 64 is a better indicator and is also available.
	5	Average drivetime to key services (GP, petrol station, post office, primary school, secondary school, retail centre) 2012	SNS / SIMD	Recognised indicator: robust and a good measure of rurality. Not updateable between SIMD releases but relatively stable through time. Is the single measure of drive time to a retail centre a good measure of fragility?
	6	Average travel time by public transport to key services (GP, post office, retail centre) 2012	SNS / SIMD	Recognised indicator: robust and a good measure of rurality. Not updateable between SIMD releases but relatively stable through time. Is the single measure of drive time to a retail centre on its own a good measure of fragility?
Healthier	7	Per cent of all people with one or more long term health conditions 2011	Census 2011	All three Census indicators are recognised as good measures and, although they appear to duplicate each other, the Hutton report suggests that there are subtle differences highlighting real world issues. The Hutton report also hints that age standardisation might be useful as poor health and LLTI is more prevalent among the elderly.
	8	Per cent of all people assessing their general health as 'very good' or 'good' 2011	Census 2011	
	9	Per cent of all people whose day-to-day activities are limited by a long-term health problem or disability 2011	Census 2011	
	10	Comparative illness factor: standardised ratio 2011 SNS/SIMD	SNS / SIMD	Recognised indicator but not easily updateable between SIMD releases: next SIMD release expected Autumn 2016.

HUTTON INSTITUTE: MAPPING RURAL SOCIO-ECONOOMIC PERFORMANCE(SEP) 2015				
Strategic Objective		**Indicator**	**Source**	**Comment**
Safer / Stronger	11	Population change, 2001-2011 (% change)	Census 2001 2011	Recognised indicator and updatable annually. Weakness is that it is retrospective and arguably does not give an indication of likely future population change.
	12	Change in the economically active population, 2001-2011 (% change)	Census 2001 2011	Recognised indicator and updatable annually. Weakness is that it is retrospective and arguably does not give an indication of likely future population change.
	13	Old Age Dependency Ratio (persons 65+ as per cent of persons 16-64) 2011	Census 2011	A good indicator that we have tended to overlook in the past. Can be updated annually and will probably flag up areas where we are likely to experience problems in recruiting care workers.
	14	Per cent change in the number of business sites 2008-13 (Intermediate geography)	SNS / IDBR	The Hutton report states that *This pattern is less reliable than most of the others we have shown in this report, due to the relatively small numbers involved, and the use of intermediate geography data.* Similar data is available at datazone level through the Business Register and Employment Survey but subject to strict confidentiality rules. The smallest business units considered are traders registered for VAT and with at least one employee: the measure therefore misses out many self employed people (self employment typically around 20% in remote rural areas). Potentially a useful indicator but too many shortcomings?
	15	SIMD Crimes per 10,000 total population, 2010-2011.	SIMD	Recognised indicator but not easily updateable between SIMD releases: next SIMD release expected Autumn 2016. Rates in Highland rural areas tend to be low – is there enough variation to make the indicator meaningful?
	16	Rate of emergency stays in hospital 2007-10 (Scotland = 100)	SIMD	Recognised indicator but not easily updateable between SIMD releases: next SIMD release expected Autumn 2016. Prone to variation in approaches to treatment between GP practices?
Smarter	17	All people aged 16 and over: No qualifications. Expressed as % of expected count.	SNS / SIMD	Recognised indicator but not easily updateable between SIMD releases: next SIMD release expected Autumn 2016.
	18	Percentage of 16-19 year olds not in education or training 2009-11	SNS	Not sure that this this exact indicator is available by data zone on SNS – is it the % of school leavers not in positive destinations? Potentially useful but needs some research into exactly what is measured and available, as many young people leave rural areas to find work etc and may be recorded elsewhere.
	19	Per cent of population 16-74 who have level 4 qualifications or higher 2011	Census 2011	Recognised indicators but not updateable. Elementary occupations and low qualification levels are directly linked to low incomes, but other than this we need to consider whether they are

HUTTON INSTITUTE: MAPPING RURAL SOCIO-ECONOOMIC PERFORMANCE(SEP) 2015				
Strategic Objective		**Indicator**	**Source**	**Comment**
	20	Per cent of population 16-74 who are in occupation groups 1-3 2011	Census 2011	a contributor to fragility.

OTHER POTENTIAL INDICATORS

Housing: The cost of housing (to buy, rent and maintain) and its availability is often cited as a reason for people moving out of rural areas. It is arguably a major contributor to fragility, particularly as younger people and families who tend to have low incomes are most affected.

Indicator	Source	Comment
Social rented housing stock (both Council and Housing Association) as a percentage of the total housing stock	Highland Council records	Social rented stock is affordable by definition and many rural areas have little or no stock.
Affordability of house purchase on the open market – ratio of price to income (probably using the Centre for Housing Market Analysis indicator of lowest quartile house price divided by median household income and using 4.0 as the affordability benchmark)	Centre for Housing Market Analysis – annual sales data pack: House prices all open market sales by data zone (see comment to right) Household incomes CACI Paycheck by intermediate zone	This is monitored as a matter of routine and the analysis forms part of our Housing Need and Demand Assessment. CACI Paycheck used to be the income data but the contract for this has lapsed and it is not clear whether there will be a replacement, or what this will be. Note that all of Highland is "unaffordable" using the benchmark, apart from small areas in Caithness.
Estimated percentage of households in fuel poverty.	Change works (need to purchase numeric data).	Uses 6 individual indicators as below to produce estimates of fuel poverty, choosing the Census 2011 indicator that best matches the definition. The approach has promise but needs more investigation. Note that The SG SIMD team rejected fuel poverty as an indicator on the basis that it was not possible to produce robust figures for data zones. Final list of weighted indicators: 1. **Unemployed**; highest income householder is under 60 and unemployed — Highest indication / weight 2. **Single pensioner**; households with one adult resident aged over 65, if a man, or over 60, if a woman 3. **EPC rating E-G** 4. **Permanently sick or disabled**; highest income householder 5. **Looking after the home or family**; highest income householder 6. **Central heating system other than gas or electricity** — Lowest indication / weight

Employment – full time and part time working: There is a long standing believe that there is more part time working in rural areas, although analysis by the SG SIMD team in the mid 2000s suggested that this was also a feature of deprived urban areas and therefore not unique to rural areas. Seasonality of employment is also an issue but difficult to analyse other than looking at seasonality in the JSA monthly count rate.

Indicator	Source	Comment
Percentage of jobs that are full time	BRES (some confidentiality rules apply but probably not significant)	BRES data not particularly robust at data zone level but useable.
Unemployment seasonality factor	Ratio of highest monthly count to lowest monthly count (average of last three years)	Needs further investigation, also complicated by move to Universal Credit in half of Highland.
Population Age Profile: The SEP population indicators look at the past and may not be a reliable guide to the future.		
Indicator	Source	Comment
Percentage of the population aged 16 to 44.	2011 Census and NRS Small Area Population Estimates (annual)	This is the child bearing age group with the most economically active people, and is a reasonable indicator of the probable future total population and labour force for some years into the future.
Percentage of school leavers moving on to higher and further education	NEET records (See SEP Indicator 18 and caveat about availability)	Very speculative and possibly not a good indicator: basically a proxy for young people moving away. A high proportion moving to FE and HE is good for the school and the pupils themselves but arguably bad for the area as it distorts the age profile and reduces the labour force.