Consultation Document

Output Geography

for the

Updated Multiple Deprivation Measure

(NIMDM 2017)

Consultation Open: 10 February 2016 to 4 May 2016

CONTENTS

1. INTRODUCTION

1.1. Measures that describe the spatial distribution of deprivation or disadvantage have been developed and used by government and others in Northern Ireland since the 1970s. They have played a pivotal role in both informing the targeting of resources to the most deprived areas in Northern Ireland and monitoring the spatial impact of policy interventions.

1.2. The Northern Ireland Statistics and Research Agency (NISRA) has been commissioned by the cross-departmental Statistics Coordinating Group to undertake an update of the current Northern Ireland Multiple Deprivation Measures (NIMDM 2010), which were last published in 2010 and which remain the official measures until the update has been completed.

1.3. There are a number of reasons why the update is important at this time. Firstly, the current measures were largely based on information relating to 2008 and a variety of new or updated information sources will now be available, not least the new population data from the 2011 Census. Secondly, the updated information will be pivotal to the 11 new Local Government Districts in the discharge of the new responsibilities that will transfer to them in respect of Neighbourhood Renewal and Community Planning. Finally the other territories of the UK have either initiated an update of their MDM measures (i.e. Scotland) or conducted their update and published their results (i.e. both England and Wales). As such, an update of NIMDM 2010 will help ensure that Northern Ireland can continue to be considered on a more comparable footing with the other territories of the United Kingdom.

1.4. The work on the update, which was was initiated in October 2015, will be advanced in accordance with the high level plan summarised in Section 4. While it is expected that the planned new measures will be published in mid-2017, the timing will very much depend on the conclusions reached as a result of this consultation – as outlined in the discussion of options section (i.e. Section 6), Option II could delay the results by around six months. Throughout the remainder of the paper the updated measures will be referred to as NIMDM 2017.

2. PURPOSE OF THIS PAPER

2.1. The purpose of this paper is to consider the options for the geographical levels for which NIMDM 2017 will be produced and published and to formally consult users on their views.

2.2. The consultation period will run from 10 February 2016 to midnight on 4 May 2016. Given the strategic importance of the update, which is highlighted in Section 3, all key stakeholders are actively encouraged to engage in the consultation so that their views might be considered.

2.3. The best way to respond to this consultation is online, where you may comment on the proposal that is detailed in Section 7. If you wish to respond by email or on paper, please download the Consultation Questionnaire (PDF version or MS Word version). When you have completed the questionnaire, please return it:

by email to: deprivation.nisra@dfpni.gov.uk

or by post to: Deprivation
NISRA
McAuley House
2-14 Castle Street
Belfast BT1 1SA

2.4. In order to support transparency in the decisions taken by the Project Steering Group, all responses to this consultation will be made public (subject to our Moderation Policy). This will include the name of the responding organisation (if applicable). However, names of individuals will only be published if the individuals concerned have given their consent – contact details will not be published. It should be noted however, that any information provided in response to this consultation could be made publicly available if required under a Freedom of Information request.

3. STRATEGIC IMPORTANCE OF THE NIMDM UPDATE

3.1. The update of the NIMDM is an important area of work, which will be of both interest and importance to a variety of users. The resulting information from the update will be actively used in the years ahead by NI Departments and others to inform the allocation of significant funding to those areas considered in greatest need and to monitor the effectiveness of spatial policy interventions.

3.2. Accordingly, the work will be overseen by a representative cross Departmental/ Organisational steering group, which will meet at several key points throughout the life cycle of the project. The steering group will include representation from, for example, all NI Government Departments, Local Government Districts, the Rural Development Council and other organisations and will be responsible for all key decisions that are taken throughout the project. The group will consider evidence from the supporting domain specific expert groups covering Income/Employment, Proximity to Services, Health, Education, Living Environment, Crime/Disorder and Urban/Rural interests. This approach, coupled with the wide-ranging consultation events that are planned, will help safeguard the independence of the work, ensure that the interests of all key stakeholders are considered and foster a sense of collective ownership for the new measures.

4. HIGH LEVEL PROJECT PLAN

4.1. A high level project plan for the work associated with the update has been developed and will be signed-off at the first meeting of the Steering Group, which is currently being scheduled for March 2016. The plan comprises five main phases, which are summarised below.

4.2. **Phase one** consists of methodological preparation and will be carried out during the remainder of the 2015/16 financial year. It includes the first meeting of the Steering Group, the preparation and initiation of this geography consultation and meetings of the planned domain specific expert groups. The **second phase** will be dominated by the development and preparation of the main Deprivation consultation document, which will be publish around September 2016. Having considered the 36 recommendations associated with NIMDM 2010, this document will set out detailed proposals in respect of the updated NIMDM 2017 and will be followed by public

consultation events later in 2016/17 (i.e. **phase three**). In the **fourth phase**, responses from the consultation will be considered by the Steering Group prior to the final approach being developed in early 2017. Finally, in the **fifth phase**, the updated deprivation measure will be produced and subsequently published in mid-2017, along with detailed supporting guidance for users. Tailored dissemination events will also be scheduled as appropriate.

5. OUTPUT GEOGRAPHY FOR NIMDM 2010 AND NIMDM 2005

5.1. The NIMDM 2010 comprised 7 domains and 52 indicators. While the primary outputs were released at Super Output Area (SOA) level, information for some domains (i.e. Income, Employment, Proximity to Services and Crime/Disorder) was released at the smaller Output Area (OA) level. Importantly, the latter allowed for the identification of smaller pockets of deprivation on the basis of key indicators, and was a recommended approach when looking at rural deprivation specifically[1]. It was also used to identify 36 Neighbourhood Renewal Areas that were to be considered for targeted intervention[2].

5.2. The same output geographies were also used in the NIMDM 2005, when SOAs were first designed. In Northern Ireland, Wards varied greatly in population size which was not ideal for regional and local comparisons or the identification of pockets of deprivation. Consequently, Wards that were deemed too large were split into two to five SOAs, as appropriate, by merging 2001 Census Output Areas. This was driven by optimising the similarity of population size of SOAs, taking account, as far as possible, of patterns of housing tenure and household type[3].

[1] See http://www.nisra.gov.uk/deprivation/NIMDM2010/using_area_based_measures.pdf#page=3

[2] See https://www.dsdni.gov.uk/articles/introduction-neighbourhood-renewal

[3] See also http://www.nisra.gov.uk/deprivation/archive/geog_presentation.pdf and http://www.nisra.gov.uk/deprivation/archive/dep_consult.pdf#page=25

5.3. Both the NIMDM 2005 and NIMDM 2010 also released indicators of deprivation for larger geographies such as Local Government Districts and Parliamentary Constituencies. However, all of these indicators are variants of population-weighted[4] findings at the SOA or Output Area level. In NIMDM 2005, indicators of deprivation for Wards were also population-weighted findings at the SOA level, whilst in NIMDM 2010, Ward-level deprivation was derived using the SOA-level methodology. This was possible as Wards were exact aggregates of SOAs and OAs and the relevant underlying data were already available at the levels in question.

6. OUTPUT GEOGRAPHY FOR NIMDM 2017 – DISCUSSION OF OPTIONS

Background

6.1. As already outlined, the more recent measures of Deprivation in Northern Ireland (i.e. NIMDM 2010 and NIMDM 2005) were primarily produced and published for each of the SOAs covering Northern Ireland.

6.2. There were minor changes to the geographical boundaries of three pairs of SOAs in 2011[5] in order to align them with the changed boundaries of Parliamentary Constituencies in 2008 (Derryaghy) and the availability of improved mapping around HMF barracks (Aldergrove and Loughview). At the same time a reduced set of 4,537 Small Areas (SAs) were developed from the 5,022 Census (2001) output areas for the purposes of disseminating the results from the 2011 Census. Importantly, these SAs nested within both the 890 SOAs covering Northern Ireland and the 582 Electoral Wards that existed at that time. The Electoral Wards in turn nested within Local Government Districts (LGDs) and Parliamentary Constituencies/Assembly Areas (PCs/AAs).

[4] Further information on this approach is available at http://www.nisra.gov.uk/deprivation/archive/Updateof2005Measures/NIMDM_2010_Report.pdf#page=70

[5] See http://www.nisra.gov.uk/archive/geography/SOAPaperJan2013.doc

6.3. Indeed, there was a direct association between the statistical geography (i.e. SAs and SOAs) and the administrative geography (i.e. Wards, LGDs, Parliamentary Constituencies/Assembly Areas, etc) as the majority (55 per cent) of the old Wards were identical to one of the 890 SOAs, with the remainder comprising between two and five SOAs. As such, deprivation information for larger administrative geographies could be readily derived from the SOA level information for NIMDM 2010.

6.4. These important features were however lost in the recent Review of Public Administration (RPA) in Northern Ireland, which resulted in the 11 new Local Government Districts and a new administrative geography based on a reduced number of Electoral Wards (462 as opposed to 582) and DEAs (80 as opposed to 101). This negated the long standing relationship between statistical geographies and administrative geographies in Northern Ireland with the consequence that SAs no longer completely nest within Wards and, in the vast majority of cases, there is no direct equivalence or relationship between Wards and SOAs (only 32 of the new 462 Wards are made up from whole SOAs). Annex A shows the hierarchy of current and former geographies in Northern Ireland. As such, in the absence of a statistical geography that fully nests within the new administrative geography, any statistical information that may be required for either Wards, DEAs or Local Government Districts would have to be generated (a) on a best fit basis (for example, using postcode data) or (b) using individual record level data that is grid referenced thus permitting data to be attributed precisely to specific geographic boundaries. In terms of the latter, it is unlikely that the full suite of indicator level data for NIMDM 2017 will be available on a grid reference basis and where they are, data custodians would have to assess the actual and/or perceived disclosure risk of releasing. Such an assessment would consider the risks associated with, for example, the differencing of outputs for overlapping geographies which can now be readily undertaken given recent advances in GIS capabilities.

6.5. In terms of the precision of any Ward and/or DEA estimates that would be generated on a best fit basis, preliminary work was undertaken by NISRA's Geography team to create a lookup table from Census SAs to Wards and DEAs based on the majority population principle (i.e. an entire SA was assigned to a Ward or DEA if the majority of its population fell within the area in question). Due to overlapping boundaries, SAs (with an average population of 400 people) can in some instances be split over up to four Wards, or up to three DEAs. Equivalent lookup tables from SOA or SA level data to the new 11 Local Government Districts were published in September 2013[6].

6.6. Using information from the 2011 Census, NISRA found that the accuracy of a best fit lookup table from Census Small Areas to District Electoral Areas was comparable, if not better than, commonly used lookup tables to create official statistics for Electoral Wards from record-level postcode data. As such, best fit lookup tables from Census Small Areas to the new District Electoral Areas and Local Government Districts are acceptable approaches and could be used in the NIMDM 2017. An accurate aggregation method based on Census Small Areas is not however viable for the new 462 Electoral Wards.

6.7. It is also important to consider the size of the various areas that are defined by both statistical and administrative geographies. This is particularly important in the context of the multiple deprivation measure, which seeks to give a spatial measure of relative deprivation at low geographical levels (i.e. each area is ranked from 1 to n, with 1 signifying the most deprived area and n signifying the least deprived). In this context, the estimated average population of a new Electoral Ward in mid-2014 was 4,000 people. This is nearly double the population of 2,100 people in an average SOA, and almost ten times that of an average SA (410 people).

[6] See http://www.nisra.gov.uk/archive/geography/11DC_Lookup.xls

Options

6.8. There are broadly two options for the output geography for NIMDM 2017. Option I is to continue (as was the case with NIMDM 2010 and NIMDM 2005) to base the primary outputs on the SOA geography, which has been in use for over a decade. The SOA geography was specifically developed in the run up to NIMDM 2005 in order to yield spatial areas that were more comparable in size than, for example, Electoral Wards - which were considered too variable in terms of population size and characteristics. The SOA geography has, arguably, a number of significant advantages including:

- the continuity of geography over time;
- data availability and quality – it is fully expected that the necessary data that will be required for the NIMDM 2017 update will be both readily available at SOA level and of sufficient quality;
- both the SOA/SA geographies and their associated disclosure risks are familiar to data suppliers;
- the SA geography is crucial in terms of identifying pockets of deprivation, which is particularly important in terms of rural areas;
- the vast majority of deprivation users are already familiar with the SOA geography, which fully nests within current Parliamentary Constituencies and current Neighbourhood Renewal Areas;
- Small Area (SA) data, which nest completely within SOAs, can be aggregated to generate SOA and, for example, DEA level based results for particular domains and/or indicators where appropriate – albeit the latter on an approximation basis;
- the approach broadly aligns with that taken in both England and Wales which use Lower Layer SOAs, with an average population of around 1,600 people, as their primary geographical level for the dissemination of results; and
- the results from the update could be released in mid-2017.

6.9. However, under this approach there would be no precise read across from SOA or SA results to the new 462 Electoral Wards that resulted from the RPA. In view of this, the consultation questions that are posed in Section 7 seek to ascertain how important it is to users that information is available for the new Electoral Wards arising from the RPA. Under Option I, work would be undertaken by NISRA to produce deprivation measures at DEA and Local Government District level, on a best fit basis.

6.10. Option II is to undertake a complete re-design of the underlying statistical geography with a view to developing a new set of small statistical geographies that nest within the new Electoral Wards. This would enable the production of deprivation outputs for geographical areas that nest within or equate to Wards, while at the same time enabling Ward level, DEA level and Local Government District level results to be produced should they be required.

6.11. There are however distinct disadvantages with this approach. Firstly the generation of the new statistical geography represents a significant piece of work which would (a) considerably delay the release of the NIMDM 2017 results – potentially by more than six months – (b) result in a loss of data continuity over time, and (c) the new sub-ward geography areas will not nest perfectly within the 18 Assembly Areas. The latter will create challenges for assessing deprivation within Assembly Areas. Importantly, the loss of data continuity could of course span all statistical releases and, as such, be wider in scope than the deprivation work should data providers elect to base their future outputs on the new statistical geography rather than the old.

6.12. Secondly, data custodians would have to consider the implications of any move to generate statistics for new statistical and/or administrative geographies both on the grounds of the resource implications and any real and/or perceived disclosure risks (e.g. regenerating historical data for new geographical areas, which inevitably will overlap the old). This could have implications for the range of data that may ultimately be available which, if lacking, could have implications for the viability of producing the new measure. In the event of this real risk materialising then Option I, as the backup position, would have to be deployed despite the lengthy delay to the work and associated increased costs.

7. OUTPUT GEOGRAPHY FOR NIMDM 2017 – PROPOSED WAY FORWARD

7.1. On balance and against the background outlined in Section 6, it is proposed that Option I is the most viable given (a) current circumstances and (b) the demands from key users within government to complete the update as speedily as possible. In summary, under Option I, SOAs would continue to be the primary geographical unit for the generation of NIMDM 2017 results, with SAs being used to further disaggregate results to identify pockets of deprivation wherever possible (as previously noted, the latter is particularly important in terms of rural deprivation). In parallel, work will be undertaken to generate NIMDM 2017 results, on a best fit basis, for the new DEAs and Local Government Districts that resulted from the recent RPA.

7.2. In responding to the consultation via the channels outlined in paragraph 2.3, users are asked to:

- Consider and advise on the extent to which this proposal is fit for their purposes;
- Outline if they have a specific need for deprivation information for new Electoral Wards and, in that event, outline (i) why the information is important, (ii) what it will be used for, (iii) how it will be used and (iv) the implications should the information not be available.

7.3. As outlined in Section 2, this consultation will close at midnight on 4 May 2016. Any queries regarding the consultation should be emailed to deprivation.nisra@dfpni.gov.uk. Alternatively, telephone enquiries should be directed to Dr Jos IJpelaar on 02890 348271. Given the strategic importance of the update, which is highlighted in Section 3, all key stakeholders are actively encouraged to engage in the consultation so that their views might be considered.

7.4. The responses to this consultation may result in the decision being taken to not create a new statistical geography, which fully nests within the new Electoral Ward, DEA, and Local Government District Boundaries, at this time. Importantly, this would not prejudice any future decision making in this area.

8. EVALUATION CRITERIA FOR CONSULTATION RESPONSES

8.1. The NISRA evaluation of responses to the consultation on the "***Output Geography for the updated Multiple Deprivation Measure (NIMDM 2017)***" will be based on a combination of both the user requirements and the operational considerations as outlined below. The results of the evaluation will be presented to a meeting of the Steering Group, which ultimately will take a decision on the proposed way forward, and will be made publicly available.

User requirements

- Proposed purpose for which the updated deprivation measures will be used
- Need for information on lower-level geographical areas
- Need for information for the new administrative geographies arising from the RPA
- Assessment of need for comparability beyond Northern Ireland
- Need for continuity with previous Multiple Deprivation Measures

Operational Considerations

- Data availability and quality
- Public acceptability
- Burden on data suppliers
- Actual and perceived data disclosure risks
- Continuity of outputs over time more generally
- Timescales

ANNEX A: HIERARCHY OF GEOGRAPHIES IN NORTHERN IRELAND

The diagram below shows the hierarchy of administrative and statistical geographies in Northern Ireland. Figures in brackets indicate the number of areas. Arrows indicate if an exact (straight) or best fit (dashed) relationship is available and valid for all of the larger geographies.