



THE CONDUCT OF THE 2011 CENSUSES IN THE UK

STATEMENT OF COMPLIANCE WITH THE AGREEMENT OF THE NATIONAL STATISTICIAN AND THE REGISTRARS GENERAL FOR SCOTLAND AND NORTHERN IRELAND.

1 Introduction

The National Statistician and the Registrars General for Scotland and Northern Ireland collectively committed to joint working on the 2011 Census and an agreement was made between the three census offices (the Office for National Statistics (ONS), National Records of Scotland (NRS)¹ and the Northern Ireland Statistics and Research Agency (NISRA)).

The agreement recognised that each country was autonomous, with final decisions lying with, respectively, the National Statistician and the relevant Registrars General. Subject to that autonomy, the National Statistician and Registrars General agreed that the three census offices would aim to work in unison to ensure that the 2011 Censuses were a success in providing high quality population and housing statistics, meeting the needs of data users and reflecting UN-ECE and Eurostat requirements.

The statement of agreement was published in February 2005 and was periodically monitored and updated. Two annexes covering output aims, and statistical disclosure control policy, were subsequently added to the agreement. The final version of the agreement, incorporating an update on meeting the aims, was published in August 2012 - <http://www.nisra.gov.uk/census/2011/background/uk-harmonisation.html>.

With the majority of the outputs from the 2011 Census now available, it is timely to evaluate compliance with the agreement.

2 Background

In England and Wales and Scotland, the 2011 Census was taken under the terms of the Census Act 1920 and in Northern Ireland under the Census Act (Northern Ireland) 1969. The necessary subordinate legislation, relating to the specific arrangements for the census in each country, was approved by the UK Parliament in Westminster, the Scottish Parliament and the Northern Ireland Assembly, for England and Wales, Scotland and Northern Ireland respectively. Welsh Ministers were consulted on the census in Wales, and were responsible for making Census Regulations for Wales.

The different legislative arrangements across the UK, as outlined above, introduced a risk that census outputs across the UK may not be comparable. The agreement acknowledged that risk and outlined how the census offices would aim to ensure the highest possible degree of harmonisation.

¹ Formerly the General Register Office for Scotland (GROS)

3 Harmonisation on the conduct of the UK Censuses

Subject to the need for approval where appropriate by the relevant legislature, the agreement set out a number of aspects where harmonisation was the aim. The table below lists the aims of the original agreement and reports on the offices' compliance. Section 4 lists the aims of the subsequent annexes and reports on the offices' compliance.

Aim	Compliance	Outcome
Date of census – The three censuses should be carried out on the same date in 2011.	The three censuses were taken on the same date – 27 March 2011	Aim achieved
Population base – A common population base should be agreed.	A common population base - 'usually resident population' - was agreed and all standard census outputs have been on this population base.	Aim achieved
Topics and questions – Common questions should be agreed wherever possible, diverging only in response to user needs, with such divergences minimised and the scope for cross-comparison maximised.	<p>A high degree of harmonisation was achieved, helped significantly by the decision to include a fourth page of questions per person. In addition, EU Regulation 763/2008 required Member States to provide the Statistical Office of the European Communities (Eurostat) with census-derived statistical information, or equivalent data. Aggregated statistics, agreed by the National Statistical Institutes of Member States, and prescribed by a subsequent Commission Regulation 519/2010, have been supplied to Eurostat.</p> <p>The questions were approved by the relevant legislatures. The majority of questions were the same throughout the UK and where the question wording or response options differed because of local user requirements, most could be aggregated to provide consistent statistics across the UK. Further details on the number of questions that were common across the UK, and otherwise, were published in the August 2012 update.</p>	Aim mostly achieved

<p>Census materials – The design of the census forms and other materials should be co-ordinated.</p>	<p>Census materials, in particular the questionnaires, were similar in design and layout to maximise harmonisation and meet requirements unique to each of the three countries.</p>	<p>Aim partially achieved</p>
<p>Definitions – Common definitions and classifications should be agreed and published.</p>	<p>Where questions were common the definitions and classifications were common.</p> <p>Each office has published similar documents that cover common questions but also refer, as required, to country specific questions.</p> <p>ONS variables and classifications - http://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-user-guide/information-by-variable/index.html</p> <p>ONS Glossary – http://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-user-guide/glossary/index.html</p> <p>NISRA Definitions and output classifications - http://www.nisra.gov.uk/archive/census/2011/definitions-and-output-classifications.pdf</p> <p>NRS Variables and classifications – http://www.scotlandscensus.gov.uk/variables-classification</p> <p>NRS Glossary - http://www.scotlandscensus.gov.uk/glossary</p>	<p>Aim mostly achieved</p>
<p>Disclosure control and estimation methodology – Common methodologies for disclosure control and for estimation should be evaluated, tested and agreed in advance of the census.</p>	<p>A consistent estimation and adjustment methodology was applied by the three census offices to address under-enumeration.</p> <p>A consistent disclosure control methodology was applied by the three census offices to protect the confidentiality of individuals, or groups of individuals, in the published statistics. A recommended statistical disclosure control policy was finalised in summer 2009. Annex B to the main agreement sets out the UK statistical disclosure control policy.</p>	<p>Aim achieved</p>

<p>Publicity – A common approach to publicity, tailored to local needs, should be agreed.</p>	<p>A coordinated publicity and engagement strategy was developed and implemented for 2011.</p> <p>For earlier census tests and rehearsals, publicity was approached separately as a result of either different timings or testing strategies.</p>	<p>Aim achieved</p>
<p>Procurement of systems and services – The different scale of the census offices may dictate different procurement solutions but a common strategy should be adopted and a common approach generally taken where that maximises value for money, operational effectiveness and (especially) consistency of outputs.</p>	<p>The different scale of the censuses dictated different procurement solutions, although there was a common approach to maximise value for money, operational effectiveness and consistency of outputs. The contract to provide support services for England, Wales and Northern Ireland was awarded to Lockheed Martin UK, and a separate contract was awarded by the Scottish census office to CACI (UK) Ltd. Each census office contracted with the same company (Space Time Research) for table production software.</p>	<p>Aim not achieved</p>
<p>Outputs – The final product should be consistent, coherent and accessible statistics for the UK and for each component country, a joint database (and/or a common data schema) being a desirable way of facilitating that outcome, with a common approach taken to output specifications, quality, data format and timing of releases.</p>	<p>A single source for UK wide census outputs was established on the ONS website, signposted as appropriate on the NRS and NISRA websites. The NISRA sign-posting is given as an example -</p> <p>http://www.nisra.gov.uk/census/2011/results/uk-outputs.html</p> <p>UK-wide statistics were provided to Eurostat and the United Nations.</p> <p>A separate statement on joint output aims was included as Annex A to the main agreement.</p>	<p>Aim achieved</p>
<p>Cost sharing</p>	<p>Cost sharing arrangements were implemented by the census offices wherever possible, typically on a population and percentage benefit basis. Costs were managed and reviewed as part of the major contract and HQ functions.</p>	<p>Aim achieved</p>

4 Compliance with the high level aims for 2011 Census outputs (Annex A of the agreement)

The aims set out below were originally published as an annex to the original agreement as high level aims for ensuring, as far as practicable, that the outputs from the 2011 Census would meet user needs and maximise harmonisation.

The table below indicates how well these aims have been achieved.

Aim	Achievement	Outcome
Data access – Outputs free at point of delivery	<p>All published standard census outputs are available free of charge via the Open Government Licence (OGL). Any requirements not in these standard products can be requested as part of a commissioned table service. Subject to the request passing checks for disclosure, a small charge will be applied to recover the cost of production.</p> <p>Each census office has provided information on charges in their output prospectuses:</p> <p>http://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-prospectus/index.html</p> <p>http://www.scotlandscensus.gov.uk/future-outputs</p> <p>http://www.nisra.gov.uk/archive/census/2011/outputs/1_release_plans_section.pdf#page=17</p>	Aim achieved
Data access – Dissemination methods and media to keep up to date with technological innovation	<p>The principal objective of free online dissemination of census results is common across the three census offices, although each uses its own dissemination method.</p> <p>ONS publishes outputs on the ONS website, through the NeSS and NOMIS website and more recently through an application programming interface (API) and enhanced data explorer to further maximise the dissemination and access to census results. The first 2011 Census results were produced in printed format and laid before Parliament and the Welsh Assembly.</p> <p>NISRA disseminates data through the redeveloped Northern Ireland Neighbourhood Information Service (NINIS). Where appropriate, NISRA (i) produced 2011 Census results in printed format and laid them before the NI Assembly and (ii) accompanied its releases with appropriate statistical bulletins.</p>	Aim achieved

	<p>NRS has developed the Census Data Explorer (CDE) to disseminate the 2011 Census results, which is available on Scotland's census website. As well as providing access to all standard outputs, the CDE provides maps and charts and area profiles. NRS also produced all parts of releases 1 and 2 in printed form and laid them before the Scottish Parliament, as well as producing statistical bulletins to accompany the releases.</p> <p>Writable media are available from the respective census office for any user who requires these.</p> <p>All three offices have developed and used, to varying degrees, innovative tools, such as infographics, interactive graphics, YouTube channels, Facebook and Twitter.</p>	
Data access – Flexible table generation online	<p>Facilities that enable users to more readily access the relevant information and amend/create bespoke views of the data have been implemented through NOMIS and data explorer and open API. The extent of the ability for users to create their own views of census outputs is more limited than the census offices had planned. This has come about for a number of reasons, for example, the requirements of statistical disclosure control. It is envisaged that further flexibility will be made available over time.</p>	Aim partially achieved
Data access – Online facility to produce graphs and maps of standard and user-defined output	<p>All three census offices have produced a range of visualisations, mapping and dynamic content to accompany online data releases. This has been very successful, with visualisations being syndicated to numerous third party commentators, such as the BBC and The Guardian.</p> <p>All three offices have been improving their online dissemination tools, and these provide the facility for users to map and chart census results.</p> <p>Interactive maps and charts and supporting information are available to help users understand the results.</p>	Aim achieved
Data access - Comparisons between 2001 and 2011 Census outputs	<p>Commentary on the outputs reported on change between 2001 and 2011 wherever possible. This focused primarily on change at higher geographies - local authorities. Comparison for lower geographies is less reliable as a result of changes in boundaries and the methodology employed for allocating adjustments for under-enumeration.</p>	Aim achieved

	<p>+A report on the comparability of the 2001 and 2011 census outputs has been published for all three census offices</p> <p>http://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-user-guide/comparability-over-time/index.html</p> <p>http://www.nisra.gov.uk/Census/comp_2011.pdf</p> <p>http://www.scotlandscensus.gov.uk/changes-2011</p>	
Data access – to maximise data utility	<p>Different levels of detail for different census outputs have been designed and published in order to maximise data utility. For example, census results have been suppressed at low level geographies where the results are very sparse and there is a risk that the results disclose individuals or information about an individual or group of individuals. Tabular outputs are considered ‘fit for purpose’ within disclosure control constraints, while maximising the extent of output detail.</p> <p>Anonymised unit record level data have been made available to users under special licence or accessed in data laboratories with outputs checked prior to removal. For instance, the origin/destination tables are very sparse, and for some geographies have been made available under licence at output area (OA) level, allowing those users interested in specific journeys access to detailed micro-data in a safe setting.</p>	Aim achieved
Data access - Output prospectus and timetable to be published pre-release	<p>Each census office published and maintained an outputs prospectus outlining the publication plans for all census products. All releases of census results follow the UK Statistics Authority code of practice, pre-announcing publication dates at least 28 days in advance.</p> <p>Every endeavour was made to keep to the published timetable subject to quality assessments. The vast majority of outputs were published on schedule; any delays were explained and communicated to users as early as possible, with revised publication dates.</p>	Aim mainly achieved
Data access - Concurrent first release of statistics across the UK	<p>Due to differences in the processing timetables, it was not possible to publish statistics concurrently across all parts of the UK. The first results - census population estimates - for England and Wales and Northern Ireland were published 16 July 2012, while NRS published results for Scotland on 17 December 2012.</p> <p>Across virtually all outputs, there were concurrent first</p>	Aim not achieved

	releases for England and Wales and Northern Ireland.	
Data access - Statistics will be released concurrently for all areas within England and Wales/Scotland/Northern Ireland	<p>Due to the breadth and depth of the census, outputs were published in four releases (Population, Key and Quick Statistics, Detail Characteristics and Local Characteristics). Within each release, the general aim was to publish available information to users in a manageable and timely manner.</p> <p>Within Key Statistics, statistics for higher geographies were published first (across the relevant country), followed by statistics for lower geographies.</p> <p>After consultation with users, ONS and NRS published Detailed Characteristics and Local Characteristics concurrently, but phased the outputs on a topic basis. NISRA used a topic-based phased publication schedule for Detailed Characteristics at the Northern Ireland level, and published lower level geography at a later date.</p>	Aim not achieved
Data access - Concurrent publication of appropriate metadata with associated statistical outputs.	Quality measures and other metadata which help users understand and interpret the results (for example, response rates and imputation rates) were published concurrently with associated statistical outputs. Other more specialised evaluations about the census operation or methods have also been published.	Aim achieved
Data Access - Joined-up and comparable UK outputs	<p>Inevitably, there were some differences in questions across the UK countries to reflect local data needs and the decisions of devolved administrations. However, where differences occurred, the aim was to map results to a common framework to enable UK comparability at an appropriate geographic level. The Census Offices acknowledge that certain differences in questions across the UK have led to some outputs, specifically the cross-tabular local and detailed characteristics tables that are not fully comparable across the UK.</p> <p>Where the data were sufficiently comparable, a wide range of UK outputs was published, including Key Statistics and Quick Statistics down to output area level, origin-destination flows and data to Eurostat.</p> <p>UK-wide statistical bulletins were published to accompany the release of UK-wide population and household estimates and Key Statistics.</p>	Aim partially achieved

Data Access - Joining-up census outputs with other statistical outputs	Each of the census offices has advocated the integration of census outputs within wider analytic reporting, and has set census outputs in the wider context of other statistical outputs.	Aim mostly achieved
Statistical Disclosure Control – common UK statistical disclosure control methodology that minimises disclosure risk whilst maximising data utility	A recommended statistical disclosure control (SDC) strategy was finalised in summer 2009 and a harmonised method was agreed. The most important characteristic of the SDC strategy was that disclosure risk would be managed to an acceptable level allowing compliance with the Statistics and Registration Service Act and the Code of Practice for Official Statistics. A common SDC method was applied across the three census offices.	Aim achieved
Geography - An effective and flexible approach to output geographies	Each office has adopted a similar approach based on building blocks (usually termed output areas) that are as small as possible subject to disclosure control considerations. In each country, these building blocks form the basis of a hierarchical geography providing census statistics for a range of geographies up to the national level. The building blocks (output areas) are sufficiently small that robust statistical estimates can be made for most geographic areas that are not part of the hierarchical structure. The census offices have each consulted with users on the geographical base for census outputs.	Aim achieved
Adjustment and Quality Assurance – Fully adjusted database	Census statistics are produced from a database that has been fully adjusted for missing responses (apart from voluntary questions) and adjusted for estimated under and over coverage. There has been 100 per cent coding of questions.	Aim achieved
Adjustment and Quality Assurance – no revisions	All three offices are committed to the production of timely high quality outputs. Documents demonstrating the quality assurance processes to which census data have been subjected accompany the release of the results. Some initial outputs in the first release (census day population estimates) were subjected to rounding, which was removed as soon as possible. Apart from this, all estimates were ‘final’ at the time of publication.	Aim achieved

<p>Adjustment and Quality Assurance – corrections policy in place in advance</p>	<p>Corrections to census data have been made using the NS correction policy, which is published on the ONS website</p> <p>http://www.ons.gov.uk/ons/guide-method/revisions/revisions-policies-by-theme/population/index.html</p> <p>Rigorous quality assurance and checking is undertaken and, as a result, there have been minimal and minor corrections to the published results.</p> <p>http://www.scotlandscensus.gov.uk/revisions-and-corrections</p>	<p>Aim achieved</p>
<p>Adjustment and Quality Assurance – joined-up and co-ordinated quality assurance policy to involve internal and external experts and bodies</p>	<p>In each census office, topic experts have been involved with the quality assurance that precedes the release of census statistics.</p> <p>To ensure common standards and methods were applied, representatives from each census office attended meetings of the quality assurance panels operated by ONS, NISRA and NRS respectively.</p>	<p>Aim achieved</p>

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