

**HOUSEHOLD ANALYSIS REVIEW GROUP: HOUSEHOLD PROJECTIONS
METHODOLOGY****Introduction**

1. This paper summarises the issues to be considered in reviewing and developing the methodology for producing household projections.
2. HARG members are asked to comment on:
 - Whether this paper correctly identifies the areas that need to be reviewed.
 - How best to take this forward. This work could be carried out in-house by GROS, or there is scope to commission research to carry out parts of it.

Background

3. Household projections for Scotland are produced every two years. They are produced by taking the population projections and estimating the household composition by projecting forward the information on the number of households from the 1991 and 2001 Censuses. This information is broken down by local authority area, age group and type of household (e.g., one adult with two or more children).
4. The methodology for producing household projections was last fully reviewed in 1993, following the 1991 Census results. Independent research was commissioned to review the methodology used. This consisted of:
 - A questionnaire survey, to identify uses of the projections and user requirements
 - A comparison of the projections with the 1991 Census
 - An investigation of available household projections methods
 - An evaluation of the current method.
5. Following this research, a number of changes to the methodology were agreed:
 - Elimination of marital status as a component of headship rates
 - Introduction of a more detailed breakdown of age bands and households by type
 - Projection of both headship and non-headship rates (with the constraint that the figures should sum to 1)
 - The use of a modified exponential function, based on two or more data points.
6. Previous HARG meetings have identified a number of ways in which it may now be possible to improve this methodology (see below). The results of the 2001 Census provide an opportunity to test different approaches.

Areas of possible change to the household projections methodology

7. **Use of new data sources:** A disadvantage of the current method is that it just projects forward the changes in household composition between the last two Censuses; it does not incorporate any information on household composition since the last Census (which can be up to 12 years out of date). New data sources are available, such as the

Scottish Household Survey and Labour Force Survey, which can provide more up-to-date information on changes in household composition, between Censuses. ODPM uses a similar approach for producing household projections for England and Wales, incorporating information from the Censuses and Labour Force Survey, and weighting the data to reflect how recent the data are and the sample size. It may also be possible to incorporate information from the 1981 Census, in addition to the 1991 and 2001 Censuses.

8. **Considering alternatives to headship rates, when estimating household composition.** Headship rates, projected forward from the last two Censuses, are used to determine household composition. The headship rate is the proportion of people in each age group who head each household type (see Annex). In the 1991 Census, the head of household was taken as the first person on the form unless that person was aged under 16 or was not usually resident in the household. The number of people who head particular household types will be equal to the number of households of that type, so this is a fairly straightforward way to estimate household composition. However, there are some alternative approaches, for example:
 - a) In the 2001 Census, the concept of a **household reference person** was introduced. This provides an alternative to the head of household, and is based on economic activity and age. HARG recently considered using this in the production of household projections. It has some advantages, but because this information was only available for a 10% sample of households in the 1991 Census, the results were less reliable for the smaller local authorities. However, there may be ways to adjust the figures for smaller local authorities, to improve their reliability.
 - b) **Household membership rates** would provide another alternative to headship rates. Each member of a household is assigned to a particular category, so this avoids the problem of figures varying on the basis of who is classified as the head of household, or household reference person.
9. **Inclusion of age cohort effects.** The ODPM model makes use of the assumption that household membership rates for each age cohort will vary smoothly with time. The Scottish household projections methodology does not include age cohort effects, but we could consider doing so.
10. **Evaluating the household type distribution** that is used – the current breakdown of household types (see Annex) differs from those used in the Scottish Household Survey and household projections produced by ODPM (England) and NISRA (Northern Ireland).
11. **Evaluating the age groups that are used.** The age groupings that are used in the current methodology (see Annex) differ from the ODPM approach, which uses five year age groups.
12. **Projections method.** A two point exponential curve is currently used, but alternatives to this could be considered.

13. **Updating the information on residents of communal establishments** between Censuses. This issue is considered separately in the paper HARG 2005(5).
14. **Incorporating non-demographic information.** The current household projections simply project past trends – they are not forecasts of what we expect to happen. It would, in theory, be possible to incorporate other information such as changes in the policy on house-building, to provide forecasts which may be closer to what we expect to happen – some areas already do this, on a local basis. However, we would need to consider whether it is desirable and/or possible to do this on a consistent basis across Scotland.

Requirements for the household projections system

15. The approach that is chosen must meet the requirements of users. In 2002-03, a survey was carried out of users of the household projections within local authorities and other users. The main preference was for household projections that cover the full period of the population projections, and improved timeliness. There was some interest in projections below the local authority level. There were no strong views on changes to the household types used.
16. Whatever approach is adopted, there will be a requirement for data that are reliable and comparable across Scotland, and this must be considered when comparing different methodologies.

GROS: Household estimates branch
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ANNEX: Current household projections

The most recent household projections, and a description of the methodology used, are available here:

<http://www.scotland.gov.uk/about/DD/EAS/00014844/page1208756194.aspx>

Figures are published for each local authority and structure plan area. Projections are made for 14 years ahead (i.e., the 2002-based projections included figures for each year from 2002 to 2016). The figures are broken down by household type and the age of the head of household, as follows:

Household types

- 1 adult: male
- 1 adult: female
- 2 adults
- 1 adult + 1 child
- 3+ adults
- 1 adult, 2+ children
- 2+ adults, 1+ children

Age groups

- 16-24
- 25-29
- 30-34
- 35-44
- 45-54
- 55-59
- 60-64
- 65-74
- 75+