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| POPULATION PROJECTIONS WORKING GROUP |
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Review of past work and work going forward

The Population Projections Working Group (PPWG) was set up in 2006 in response to user requests to improve population projections and its remit is available on the General register Office for Scotland (GROS) website via the following link.

<http://www.gro-scotland.gov.uk/statistics/user-consultation-groups-seminars/population-projections-working-group-ppwg/population-projections-working-group-26-september.html>

A work plan ([Annex A](#)) was drawn up and work has been prioritised at PPWG meetings. A fair chunk of the work has now been completed and at the PPWG meeting on 26 June 2008 it was decided to focus on looking at the benefits of small area data for projections using POPGROUP software and these findings were reported back today. Therefore it is suggested that we look again at the remit of this group and decide which items from the work plan should be taken forward as well as any additional work.

PPWG are invited to:

- agree which items on the work plan can be marked as completed and those which should be carried forward; and
- feed into an updated remit and work plan by suggesting where development work on projections should go from here e.g. priorities for where limited resources should be focused.

Esta Clark
Population and Migration Statistics
27 September 2010

Annex A

Population Projections Working Group Work Plan as at 4 October 2010

This document details the work plan which will be reported on at the meetings of the Population Projections Working Group (PPWG). Progress on items will be documented and if necessary the work plan will be amended to take account of any new developments.

| Item No | Piece of Work | Complete? |
|---|---|---|
| Mortality and Fertility Scaling Factors - Andrew White | | |
| 1. | <p>Investigate the method to scale the national age specific fertility and mortality scaling factors. Consider whether it is possible to calculate fertility and mortality rates for areas within Scotland.</p> <p>Possible action(s)</p> <p>a) Investigate the method used by the Office for National Statistics (ONS) to produce national rates to see if it can be used for areas within Scotland.</p> <p>b) Look into whether other methods could be used.</p> | <p>Progress to 25 June 2008</p> <p>The second chapter of the Register General's Annual Report considers regional variations in fertility, mortality and migration. This shows that the differences in fertility and mortality rates across council areas in Scotland vary for different age groups.</p> <p>General Register Office for Scotland (GROS) used Local mortality scaling factors for different age-groups in the 2006 projections. Age specific fertility scaling factors will be more difficult to incorporate and are less of a priority.</p> |

| Item No | Piece of Work | Complete? |
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| Controlling the results to the national total EstaClark / Andrew White | | |
| 2. | <p>Investigate the effect of controlling the results to the national total using the current system.</p> <p>Possible action(s)</p> <p>a) Run the current system using the uncontrolled option.</p> <p>b) Run the current system using the uncontrolled option and uncontrolled migration assumptions.</p> <p>c) Investigate the effect the RAS Principle has on the age and sex structure of areas.</p> <p>d) Investigate other methods for controlling results to the national average.</p> <p>e) Investigate 'bottom up' methods including the consistency of data sources for projection areas.</p> | <p>Progress to 10 September 2007 A high-migration variant projection was published at the same time as the principal projection and POPGROUP input files for this and a zero migration variant have been prepared for this meeting.</p> <p>Progress to 4 October 2010 High and Low migration variants have been published and papers on the agenda for this meeting report on options for fertility, life expectancy and zero migration variants.</p> |

| Item No | Piece of Work | Complete? |
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| Economic Factors in population projections Cecilia Macintyre | | |
| 3. | <p>Investigate whether Economic Factors should be taken into account in population projections.</p> <p>Possible action(s)</p> <p>a) Find out whether other countries include economic factors in their population projections.</p> <p>b) Consult statistical, economic, planning and policy colleagues in the Scottish Executive (SE) for their views, including the Analytical Services Group (ASG) on Demography.</p> <p>c) Consult ONS, Welsh Assembly Government (WAG) and Northern Ireland Statistics and Research Agency (NISRA) for their views on including economic factors into population projections.</p> <p>d) Consult local authorities about whether they currently use economic factors in their projections and how they do this.</p> | <p>Progress to 10 September 2007</p> <p>A meeting was held in March between interested parties of GROS and the Scottish Executive (SE). Minutes of this meeting were sent to PPWG members in July. Briefly, it was generally agreed that trying to incorporate economic factors into the projections would not improve them and would only lead to greater uncertainty being introduced. The robustness of any economic assumptions would be bound to be open to question and a lot of change in population is because of political changes rather than economic growth - these are often impossible to predict.</p> <p>David Connolly presented details of the TELMOS model which uses economic factors at the Population and Migration Statistics (PAMS) meeting on 19 June 2008.</p> <p>Post meeting note: GROS has since contacted Richard Pereira. His follow up research has indicated that the use of economic factors in projections is not straightforward and there is nothing that can be directly implemented.</p> |

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| <p>Migration assumptions for population projections Esta Clark / Cecilia Macintyre / Bryan Cunningham / Nick Wright</p> | | |
| <p>4.</p> | <p>Investigate methods of making migration assumptions for population projections, including adaptations of the current method and other methods.</p> <p>Possible action(s)</p> <p>a) Look at the effect of using a different time period for the current method i.e. the effect of using a five year average compared with, say a 10 year average.</p> <p>b) Use the current system to produce a natural change only projection to look at the effect of the current migration assumptions.</p> <p>c) Look in to the possibility of using a propensity to migrate method.</p> <p>d) Investigate the method used to allocate international migration to local authorities in the migration estimates process.</p> <p>e) Investigate the way in which the age / sex distribution of international migrants is derived for the migration estimates.</p> <p>f) Compare the age and sex distributions of the migration assumptions used in the 2004-based projections with the distributions in the migration estimates for the previous 5 years, also compare to NHSCR distributions and also uncontrolled CHI distributions.</p> <p>g) Update work to look at the effect of controlling the CHI migration adapt to the NHSCR for council areas.</p> <p>e) Investigate the method used to give an age and sex distribution to the migration assumptions.</p> | <p>Progress to 10 September 2007 ONS's new method has been implemented for the 2007 population estimates and a more general review is ongoing. These changes will begin to influence migration assumptions for the 2008-based projections.</p> <p>For the 2006-based projections Community Health Index (CHI) data was used in place of census migration data to give an age/sex distribution at council level. This is in line with the mid-year estimate methodology.</p> <p>Progress to 4 October 2010 Paper on the agenda for this meeting looking at the methodology for the short-term migration assumptions.</p> |

| Item No | Piece of Work | Complete? |
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| Other methods for making population projections including available software Esta Clark / Katya Lisiankova | | |
| 5. | <p>Review other methods for making population projections including any available software.</p> <p>Possible action(s)</p> <p>a) Carry out a literature review of existing methods.</p> <p>b) Once the other items in this work plan are complete draw up a requirements list for software and investigate the suitability of existing software and recommend whether software should be bought or an in-house solution developed.</p> | <p>Progress to 10 September 2007</p> <p>Literature review completed 31 July and results are in PPWG (06) 10.</p> <p>Katya Lisiankova re-produced the 2004-based based Scottish population projections using POPGROUP. She has produced the principle projection as well as high, low and zero migration projections at Scotland level as well as the principle projection and zero migration projection at sub-national level.</p> <p>Katya has also now re-produced the 2006-based based Scottish population projections using POPGROUP. She has produced the principle projection as well as high and zero migration projections at council level and has prepared input files for POPGROUP.</p> <p>Progress to 4 October 2010</p> <p>Report at meeting on use of POPGROUP.</p> |

| Item No | Piece of Work | Complete? |
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| Accuracy of past projections Esta Clark / Bryan Cunningham / Eileen Crichton | | |
| 6. | <p>Investigate the accuracy of past projections by comparing results from previous projections with mid-year estimates.</p> <p>Possible action(s)</p> <p>a) Investigate the accuracy of past projections by comparing them with the mid-year estimates by Council and NHS Board area and sex and broad age group (0-15, 16-64, 65+). To begin with this would use the 2004 Mid Year Estimates as the actual figures and compare them to what the 2002-based projections predicted for 2004. Also look at what the 2004-based projections predicted for 2005.</p> <p>b) Next look at the performance of previous projections compared with the mid-year estimates, though this is complicated by the change to the base after 2001, but is probably of more interest</p> | <p>Progress to 10 September 2007 Completed.</p> <p>In addition ONS has published an article in Pop Trends 128 which considers the accuracy of national projections for the UK over the past 50 years: (http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=6303&Pos=&ColRank=1&Rank=422)</p> <p>A further article comparing the accuracy of projections to those from various other countries appeared in Pop Trends 129.</p> |

| Item No | Piece of Work | Completed? |
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| <p>Support for demographic statistics Alistair Harvey/Eileen Crichton/Cecilia Macintyre/Andrew White</p> | | |
| <p>7.</p> | <p>Investigate the need for support for and outputs of demographic statistics by local authorities, NHS Boards, SE statistical and policy colleagues.</p> <p>Possible action(s)</p> <p>a) Write to local authorities, NHS Boards, Information Services Division (ISD), SE and others asking about their requirements for analytical support and outputs for demographic statistics.</p> <p>b) Summarise results for.</p> | <p>Progress to 10 September 2007 Completed. Paper on local authority views was circulated at last meeting (PPWG (06) 08) and similar paper on NHS board views has been circulated with this paper (PPWG (07) 03).</p> |

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| <p>Requirements for geographic areas Cecilia Macintyre / Esta Clark / Eileen Crichton / Alistair Harvey / Andrew White</p> | | |
| <p>8.</p> | <p>Investigate the geographies needed by users of projections as well as the feasibility of producing accurate projections for these areas.</p> <p>Possible action(s)</p> <p>a) Write to users (local authorities, NHS Boards, Information Services Division (ISD), SE and others) asking about their geography requirements for projections.</p> <p>b) Investigate how feasible it would be to produce projections for these areas and how accurate they would be.</p> | <p>Progress to 10 September 2007 Completed. Paper on local authority views was circulated at last meeting (PPWG (06) 08) and similar paper on NHS board views has been circulated with this paper (PPWG (07) 03).</p> <p>POPGROUP has been used to produce projections for National Parks in conjunction with planning authorities. These will be published later in the summer.</p> <p>Ludi Simpson has been invited to PPWG and will cover, amongst other things, projections at sub-council level.</p> |

| Item No | Piece of Work | Completed? |
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| Variant Projections Keira Murray/Andrew White / Bryan Cunningham | | |
| 9. | <p>Investigate running the current system using Government Actuary's Department's (GAD's) variant projections.</p> <p>Possible action(s) a) Run the current system using alternative migration assumptions which are consistent with GAD's variant projections.</p> | <p>Progress to 10 September 2007 A high-migration variant projection was published along with the principal projection.</p> <p>Progress to 4 October 2010 High and low migration variants were produced for Council and NHS Board areas for the 2008-based projections as well as for National Parks and Strategic Development Plan Areas. Papers summarising investigations into fertility, life expectancy and zero migration variants are on the agenda for this meeting.</p> |