

Methodology Note: Fencing Survey

Introduction

The Survey of Round Fencing Manufacturers (or fencing survey) is an annual survey conducted by Forest Research (on behalf of the Forestry Commission and in association with the Forest Service) of round fencing mills in the UK that are believed to use UK-grown roundwood. Results from the survey are published in statistical releases produced by the Forestry Commission and are used by a range of others.

The fencing survey was reviewed in detail in 2013. The review report is available at [www.forestry.gov.uk/pdf/srfensurvey.pdf/\\$FILE/srfensurvey.pdf](http://www.forestry.gov.uk/pdf/srfensurvey.pdf/$FILE/srfensurvey.pdf). The review identified a need to document:

- the methods and processes involved in data collection; and
- the editing and imputation performed on the survey.

The present note provides this documentation, and complements the information already available on the fencing survey, including questionnaires and quality report, at www.forestry.gov.uk/forestry/inf-d-94uk7h.

Documentation on how the results of the fencing survey are used in outputs can be found in the Methodology Note: UK Wood Production at [www.forestry.gov.uk/pdf/mnukwp.pdf/\\$FILE/mnukwp.pdf](http://www.forestry.gov.uk/pdf/mnukwp.pdf/$FILE/mnukwp.pdf).

Data collection

Design

The fencing survey questionnaires are designed by in-house experts (FC statisticians). They are reviewed annually by in-house and external experts in the subject area, the Expert Group on Timber and Trade Statistics (EGTTS, www.forestry.gov.uk/forestry/inf-d-5rabj3), some of whom are also data suppliers. The EGTTS is consulted on proposed changes and all members can suggest changes.

An on-going dialogue between the FC statisticians and the EGTTS via three meetings per year ensures that the data collection procedures remain appropriate from the users' standpoint.

Testing of the visual design, navigational path and functionality of the questionnaire, as well as systems testing was carried out prior to the introduction of the survey. Testing of the web-based questionnaire occurred before its introduction and was undertaken as a small pilot in the first year.

As this is a survey of businesses, the questionnaire is available in English only.

The FC statisticians endeavour to make it easier for respondents to supply data by:

- only asking questions that are strictly necessary;
- offering a choice of collection modes (see below);
- stating that estimates are acceptable;
- providing the name and contact details of a survey liaison point; and
- being willing to negotiate a time extension for return of questionnaires.

Details of the questionnaires used, including the justification for every question asked, can be found at [www.forestry.gov.uk/pdf/fensurveyq.pdf/\\$FILE/fensurveyq.pdf](http://www.forestry.gov.uk/pdf/fensurveyq.pdf/$FILE/fensurveyq.pdf).

The distribution list for the fencing survey is believed to cover all round fencing manufacturers and can be considered as a census.

Modes

Data from the fencing survey are collected through paper, e-mail (via Microsoft Word) and online questionnaires. Recipients can complete either paper or web questionnaires, as is most convenient to them, which contributes to improved response rate and quality.

Although the responses to paper questionnaires need to be manually entered into the system, the process is still manageable given the number of responses (around 30), and includes manual quality assurance checks which also need to be performed for web data. Web collection remains the preferred mode from the Forest Research perspective, in terms of ease of collection, cost and minimisation of errors.

The survey timetable is set to allow for unexpected delays. The recipients are given several months to complete the surveys, so there is minimal risk that a major disruption would affect response rates.

Response

Historical response rates for the fencing survey are provided in the Sources section of Forestry Statistics, available at <http://www.forestry.gov.uk/forestry/infd-7aqdgc>.

More detailed response rates for the latest year are available in the fencing survey quality report at [www.forestry.gov.uk/pdf/qrfensur.pdf/\\$FILE/qrfensur.pdf](http://www.forestry.gov.uk/pdf/qrfensur.pdf/$FILE/qrfensur.pdf).

Please note that in the Sources section of Forestry Statistics, nil returns are counted as a response. In the removals survey quality report, nil returns are excluded, following the approach used by the Office for National Statistics.

Weighted response rates are calculated to provide an estimate of the total softwood consumed by round fencing manufacturers that is accounted for by respondents.

Response bias is mostly linked to business size rather than survey mode, with lower response rates for small businesses.

Data transfer

Online survey data are recorded into an IBM Domino database and exported to Excel before being transferred to SAS, a statistical software package (www.sas.com). Paper returns are entered manually into Excel before being transferred into SAS.

The quality of data transfer is assured by:

- checking that the number of responses received equals the number processed;
- checking the presence of key respondents;
- when potential errors are flagged during data processing, checking them against the original individual returns; and
- some random checking of manual data entry and of electronic transfer from Excel to SAS.

Editing and imputation

Data processing and analysis takes place in SAS and Excel. The processing steps are documented as comments within the SAS code and in the Excel spreadsheets.

Data from the online and paper returns are first combined within SAS, before being merged with historical data. The outputs of interest are calculated and finally exported to Excel.

A number of quality assurance checks, corrections and imputations are carried out at several stages of the data processing and analysis. For large suspected errors or missing data, and for large businesses, the data providers are contacted where possible and asked to check their submission. Failing this, or for minor discrepancies, manual amendments or imputations to record level data are made by the statistics team, mainly based on historical data. Small businesses are not re-contacted due to resource restrictions and in order to limit the burden on data providers. The survey is relatively small, which makes data editing and imputation practical at record-level.

Data entry errors are corrected in the relevant SAS datasets. All other manual corrections are coded within the SAS programs, in order to provide an audit trail.

Editing

Quality assurance checks and associated editing include:

- completeness (missing, duplicate or incomplete records): check against register for large missing respondents, deletion of duplicate records, check against original return for incomplete records;
- consistency within categories (such as breakdowns not adding up): conversion to quantities when percentages have been entered instead of quantities, completion of incomplete breakdowns, unit conversions;
- consistency with historical data (large year-on-year increases/decreases); and
- comparison with other data sources (returns from other respondents, sawmill returns for businesses with fencing mills and sawmills).

Respondent errors are relatively rare. The most common errors are in duplication of employment reporting with the sawmill survey by businesses that have a sawmill and round fencing mill at the same site.

Some known common errors are automatically edited, such as country breakdowns not adding up. Of the remaining errors, those with largest impact on estimates are edited manually.

The amount of editing carried out is monitored and reported in the removals survey quality report. On average, around 25% to 30% of responses for employment and less than 5% of responses to other questions contain errors and require editing.

Imputation

Missing values or records are imputed, mainly based on historical data.

For large non-respondents, expert advice is sought from the EGTTs on whether major changes are expected compared to previous year data.

When current year data are unavailable and no other information is known, previous year data are rolled forward. If a non-respondent for a given year provides data again in a later year, past imputed data may be corrected by rolling data backward.

Sheila Ward
IFOS-Statistics, Forest Research
November 2016

Glossary

Forest Service (FS) The agency of the Northern Ireland Department of Agriculture, Environment and Rural Affairs responsible for forestry matters in Northern Ireland.

Forestry Commission (FC) The government department responsible for forestry matters in England, Scotland and (until March 2013) Wales. The Forestry Commission's functions in Wales transferred to a new organisation, Natural Resources Wales, on 1 April 2013. The responsibility for forestry is devolved.

Great Britain (GB) England, Wales and Scotland.

Natural Resources Wales (NRW) The organisation responsible for advising the Welsh Government on the environment, created on 1 April 2013. NRW is responsible for the functions previously carried out by the Environment Agency in Wales, the Countryside Council for Wales and Forestry Commission Wales.

Roundwood Trunk or branch wood, generally with a top diameter of 7 cm or more. Can be in the form of logs (14 cm top diameter or more) or small roundwood (7 to 14 cm).

Softwood The wood of coniferous trees, such as spruce, pine and larch; a term sometimes used for the coniferous trees themselves.

United Kingdom (UK) Great Britain and Northern Ireland.