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UK Farm Animal Genetic Resources (FAnGR) Breed Inventory 2000 to 2013 Results: Explanatory note

This note provides background context to the first results from a pilot annual inventory for monitoring livestock breed populations and breeding structures. The results provide data on the status and trends in the domestic pig, goat and horse FAnGR with continuous data from 2000 to 2013 for around 50 breeds of pigs, goats and horses which are present in the UK.

The full results, including timeseries back to 2000, are available at:
www.gov.uk/government/collections/farm-animal-genetic-resources.

What data is available?

Data in the inventory are all collected at the national level, so there are no disclosure individual details. The current pilot phase covers data on 15 out of the 16 pig breeds (including all 11 native breeds). It also covers 11 out of the 16 goat breeds (including all 5 native breeds), and 20 horse breeds (including 13 native breeds). The intention is to fill in the gaps as soon as possible, and roll out the inventory to cattle, sheep and camelids in the coming years.

The data available for participating breeds are:

- Number of female and male pedigree registrations (UK born, pure-bred, full pedigree only)
- Breeding pedigree female populations (goats and pigs only)
- Number of herds producing registered offspring
- Number of sires and dams of registered offspring.
- Number of members keeping registered animals (pigs only)

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The FAnGR committee would like to say a big thank you to all those breed societies already taking part. If any other breed society would like to participate in this pilot inventory, please contact the FAnGR Secretariat for more details.

The FAnGR team would also be happy to hear your feedback on this publication and how it can be enhanced for future years. This annual release will be updated in July 2015.

The full list of breeds included in the annual inventory so far is shown below:

Goats	Horses
British Alpine	American Quarterhorse
Anglo Nubian	British Appaloosa
Bagot	Clydesdale
British Boer	Cleveland Bay
British Guernsey	Connemara
British Saanen	Dales
British Toggenburg	Dartmoor
Cheviot (Feral)	Donkeys
Golden Guernsey	Eriskay
Saanen	Exmoor Pony
Toggenburg	Fell
Pigs	Hackney
Berkshire	Haflinger
British Lop	Highland
British Saddleback	Irish Draught
Duroc	New Forest Pony
Gloucestershire Old Spots	Scottish Sports Horse
Hampshire	Shetland Pony
Landrace	Shire
Large Black	Suffolk
Large White	
Mangalitza	
Middle White	
Oxford Sandy and Black	
Pietrain	
Tamworth	
Welsh	

Background

The UK has one of the richest native Farm Animal Genetic Resources (FAnGR) populations in the world and the importance of FAnGR has been recognised at both international and UK levels.

Because of this, a commitment was made under national and global biodiversity strategies to establish an annual inventory to show how breed populations are changing over time, in order to help identify trends and potential threats. The results presented here are the first stages of delivering that commitment.

This report builds on the findings from the 2012 “UK Country Report on Farm Animal Genetic Resources (FAnGR)”. It provides an updated inventory of the status of and trends in our domestic pig, goat and horse FAnGR and provides continuous data from 2000 to 2013 for around 50 breeds of pigs, goats and horses which are present in the UK.

They are the first results from a pilot annual inventory for monitoring breed populations to help safeguard UK livestock biodiversity and to help future-proof UK farming. It is a collaborative effort between the national Farm Animal Genetic Resources (FAnGR) Expert Committee, Defra and the Devolved Administrations who work together to support the conservation and sustainable use of UK FAnGR.

The inventory is initially in pilot phase, collecting data automatically each year (through central data suppliers, rather than individual breed societies), and will complement the committee's other monitoring efforts and the work of the Rare Breeds Survival Trust on conservation and protection of UK rare and native breeds of farm animals.

Data uses

The data in this report will be of value to all those with an interest in using, developing and protecting the UK's farm animal genetic resources. This includes breeders, breed societies, associations and non-governmental organisations who are directly involved in their management and conservation. It also includes policymakers, academics and national experts who have an interest in making sure that national and international commitments are met and key issues and trends are being monitored and addressed appropriately. The report will also be of interest to international experts and organisations who are involved in European and global assessments of the state of agricultural biodiversity in the livestock sector.

The data will be used to:

1 Enhance knowledge of population size and prevent the loss of breeds

Comprehensive breed inventories and data on the size and structure of breed populations are prerequisites for effective management of Animal Genetic Resources, particularly to identify breeds that are at risk of extinction. Current dependence on a small number of commercial breeds is placing our future food security at risk. An essential defensive strategy is to conserve our breeds/FAnGR in order to future proof our farming.

2 Support strategic planning for the sustainable utilisation of animal genetic resources

Without good knowledge of FAnGR, decision-makers at national level, in the breeding industry and in breed societies will be unable to develop strategic plans for sustainable use and development. Knowledge of all the breeds that might be drawn upon, and of the production environments in which the animals can be kept, is needed in order to develop or strengthen animal breeding programmes. The information gained from repeated surveys is important for identifying trends that need to be addressed in future plans, and provides a basis for assessing progress in the implementation of existing plans and policies.

3 Improve priority setting for conservation programmes

The limited availability of resources for conservation programmes to protect breeds that are at risk means that priority setting is necessary. Decisions as to which breeds to target for conservation require up-to date information on the risk status of all the breeds under consideration and on any unique characteristics that the breeds may possess.

4 Enhance knowledge of cross-border genetic linkages

Because of cross-border exchanges of genetic material a national breed population may be part of a common gene pool whose range extends beyond national boundaries. In other words it is appropriate to consider the national population to be part of an international population. Establishing whether or not this is the case may be important for cross-border cooperation in managing the population. Identifying national populations that should be linked at the international level is also important for regional and global assessments of FAnGR diversity.

5 Reporting obligations

Because of the importance of FAnGR, there are national and international obligations for reporting on the status of animal genetic resources.

- 2011 England Biodiversity Strategy
- UN Food and Agriculture Organisation's (FAO) "Global Plan of Action"
- UN Convention on Biological Diversity "Strategic Plan for Biodiversity 2011-2020"
- Input to the European Farm Animal Biodiversity Information System (EFABIS) and the FAO Global Information System (DAD-IS) to monitor Farm Animal Biodiversity across Europe and globally. The FAO data links all countries into the FAO Global Strategy for the Management of Farm Animal Genetic Resources.

6 Raise public awareness

Survey outputs such as breed population numbers, trends of populations, descriptions of breeds with particularly interesting characteristics or photographs of animals in their production environments, are likely to be useful in the preparation of publicity materials that can promote understanding of the importance of FAnGR among decision-makers and the general public.

Methodology and Data Sources

A well planned survey programme will help the UK obtain the data needed to meet the wide range of data uses and reporting obligations.

Data in the inventory is sourced from individual breed society records. As all pedigree animals need to be registered with their respective society to receive their pedigree certificate, the breed society records are comprehensive. Therefore, the data provided for all categories (with the exception of the estimates of breeding females) has complete coverage so requires no estimation.

To maximise efficiency in data collection, central database suppliers who maintain the breed society databases supply the data to the FAnGR team. Breed societies have given their permission for these companies to supply the data every year for this exercise. As the scope of the inventory expands, data for additional breeds will be collected from individual breed societies.

It was made clear to participating breed societies in advance that all data supplied would be published (it was all collected at the aggregate level). Therefore, there are no confidentiality issues around the data. Some breed societies already publish this information in their flock/ herd books.

The pig data on numbers of pedigree breeding sows (with the exception of the British Lop and Kune Kune) are sourced from the Bloodline Census, an annual exercise carried out by the British Pig Association (results are available at <http://www.britishpigs.org.uk/breedlist.htm>). This Census also collects data on the number of members keeping registered pigs so this data has been included as an additional table in the Pigs Section.

A key variable is the number of pedigree breeding females. The actual number of these animals is not always directly available from breed societies as the databases are not always completely up to date. Therefore, estimates are made of this key measure. This estimate is made by multiplying the average number of pedigree female registrations over the past three complete years by multipliers defined for each species (see Table below) to estimate the number of breeding females. The multiplier is calculated using historic data on the ratio of the number of adult females in a breed to the number of female registrations in a year. The full technical description for these multipliers is available in the Source document linked below the table.

Species	Multiplier
Pigs	2.7
Goats	5.16

Source: <https://www.gov.uk/government/publications/census-information-on-livestock-breeds>

Revisions Policy

If any revisions are required to past data, we will update the published results as early as possible and provide information about these revisions in this publication and in the Excel dataset.

Quality Assurance

For Quality Assurance reasons, results have been showed in advance of publication to members of the FAnGR committee. This was to check that definitions were correct and understandable and that the presentation of tables were clear, contained the most appropriate metadata and in the most suitable format.

Further data sources

Full results from the Breed Inventory

www.gov.uk/government/collections/farm-animal-genetic-resources

2012 UK Country report (which includes results from the 2012 inventory)

<https://www.gov.uk/government/publications/uk-country-report-on-farm-animal-genetic-resources-2012>

FAnGR policy information

<https://www.gov.uk/government/groups/farm-animal-genetic-resources-committee-fangr>

Research report into predicting the number of breeding females based on registration data

<https://www.gov.uk/government/publications/census-information-on-livestock-breeds>