



Department
for Environment
Food & Rural Affairs

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Animal Welfare Evidence Plan

**Policy portfolio: Animal Health and Welfare:
Disease Control**

Policy area within portfolio: Animal Welfare

Timeframe covered by Evidence Plan: 2013/14 – 2017/18

Date of Evidence Plan: March 2013

This evidence plan was correct at the time of publication (March 2013). However, Defra is currently undertaking a review of its policy priorities and in some areas the policy, and therefore evidence needs, will continue to develop and may change quite rapidly. If you have any queries about the evidence priorities covered in this plan, please contact StrategicEvidence@defra.gsi.gov.uk.

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Contents

1. Policy context.....	1
2. Current and near-term evidence objectives	3
3. Future evidence needs	9
4. Meeting evidence needs	9
5. Evaluating value for money and impact	12

1. Policy context

What are the key policy outcomes for the policy programme/area?

The Coalition Agreement commits the government to improving standards of welfare of all kept animals, including companion animals and farmed livestock (including fish) throughout their lives to the point of slaughter. This is reflected in the current Defra Business Plan priority to “support and develop British farming and encourage sustainable food production”. The key policy outcomes associated with this priority are to “help to enhance the competitiveness and resilience of the whole food chain, including farms and the fishing industry, to help ensure a secure, environmentally sustainable and healthy supply of food with improved standards of animal welfare”. Defra Ministers are also committed to “Implement an effective and efficient animal health and welfare system, including services delivered by the AHVLA and others.” This includes managing risks from animal disease and environmental emergencies such as flooding, all of which can significantly affect animal welfare. The Animal Health and Welfare Board for England (AHWBE) anticipated outcomes through application of their principles include embedding of best practice on animal welfare across all sectors and good animal welfare of all kept animals, which in turn can improve the competitiveness of livestock keepers and benefits the wider industry and society.

In 2011 the UK livestock industry was made up of some 9.9 million cattle, 31.6 million sheep, 4.4 million pigs and 162.6 million poultry – whose production was valued at £2.6 billion, £1.1 billion, £1.1 billion and £1.9 billion respectively. In addition, milk production was valued at £3.7 billion and eggs (for human consumption) £0.6 billion. In total these amounted to around 0.6% of UK GDP. Animal welfare is a public good but there is a limited understanding of the value it creates for UK society. This is an area of ongoing research interest. One manifestation of this public good value is charitable giving to animal welfare causes. The income of the largest seven animal welfare charities is over £200m a year deriving largely from donations and legacies from the public.

Animal welfare policy also influences other cross-cutting Defra priorities, for example to “help to enhance the environment and biodiversity to improve quality of life” and to “support a strong and sustainable green economy, resilient to climate change”. Policies such as climate change mitigation, livestock intensification and improved food security and increasing food production to meet key global environmental challenges, all have the potential to affect animal welfare, and robust welfare evidence is needed to underpin government policy in these areas. There are also wider issues related to companion animals which have an impact on “improving quality of life”. For example, links between animal abuse (e.g. dog fights and physical violence) and human-related issues (e.g. drugs and physical abuse) which are of interest to developing dangerous and status dog policy.

The Animal Health and Welfare (AHW) research and welfare surveillance budgets are held by Defra on behalf of GB administrations. The objectives outlined also generally align with DARD's evidence needs.

The Welsh Government is also committed to "improved animal health and well-being through environment, countryside and planning initiatives and decision-making in Wales". Breeding of dogs is another of their key areas of interest. In Scotland, ensuring well-treated and healthy farm (and domestic) animals, contributes towards the Scottish Government's strategic objective of a 'Healthier, Wealthier and Fairer' Scotland.

Animal welfare issues also generate a significant degree of political interest, reflecting a range of public concerns, including moral and ethical issues, which Government is expected to address.

Specific policy objectives include the following:

- Providing a solid evidence base to support policies to improve standards of animal welfare in the UK, across the EU and internationally – based on a robust and effective control framework using a risk-based approach – with an emphasis on non-legislative solutions.
- Improving the welfare of animals reared for food in current and emerging production and husbandry systems; developing and promoting effective alternatives to existing systems where proven to be necessary or to make aspects of systems more welfare-friendly. Focus on appropriate outcomes – including the up-skilling of animal keepers. Overall this contributes towards making animal production more efficient as better welfare has direct correlation with productivity.
- Providing evidence to support a robust and effective welfare surveillance programme.
- Providing underpinning evidence about how to ensure markets function effectively and transparently, allowing people to make informed choices based on animal welfare standards.
- Developing the most appropriate methods of emergency killing of young animals and improving current knowledge and effectiveness of slaughter methods. This contributes to increased emergency killing capabilities and more humane slaughter methods since better welfare is generally related to better meat quality, more efficient meat production and increased meat yields.
- Considering how breeding and selection can affect the welfare of animals while ensuring that new developments do not compromise animal welfare – and Improving understanding of the ethical context of this and other welfare issues.

- Improving the welfare of other non-farm animals such as companion and circus animals and game birds. Maintaining sufficient welfare expertise and capability in a broad range of GB institutions.

2. Current and near-term evidence objectives

What are the current and near-term objectives for evidence and how do they align to policy outcomes?

The bulk of the evidence spend is used for novel research commissioned primarily from a small number of academic institutes specialising in animal welfare science (£1.997 million in 2012/13). In future however, we will seek to expand the range of research providers, to tap into the broadest possible pool of expertise and consideration will be given to exploring other funding avenues, including collaborative work with industry, NGOs, Devolved Administrations and other countries.

A smaller proportion of the evidence budget (approximately £55,000) is used to support AHVLA's laboratory surveillance programme in England and Wales. This covers post mortem and laboratory testing where welfare problems are suspected; funding costs associated with prosecution cases; farm visits where a welfare problem has been identified by private or official veterinarians and would benefit from a laboratory surveillance based investigation; and analysis / reporting of surveillance data collated by AHVLA that may indicate emerging welfare issues.

The current and near-term evidence budget focuses on applied research relevant to current animal welfare policy issues. The results will be used to underpin robust evidence-based domestic policy as well as supporting the UK's negotiating position in discussions at EU and wider international level. In addition, they will assist the development of appropriate codes of practice (the setting of standards and recommendations for good husbandry) and help develop working concepts for training, education & support programmes for those affected by welfare policy.

Encouraging up-skilling amongst animal keepers is a particular priority given the general acceptance that animal husbandry is the single most important factor affecting animal welfare.

Opportunities will also be taken to explore other sources of data including AHVLA inspection reports, industry analysis etc., in order to ensure that evidence is both soundly based and represents value for money for the taxpayer.

As a general principle, any research and development into novel and existing approaches to improving welfare, or analysis of changes in practice will be accompanied by an economic analysis of the impact on the relevant industry sector. Similarly, as a result of recommendations from the 2010 Animal Welfare programme review, there has been and will continue to be an increasing emphasis on investigating the motivators and barriers to

uptake of best practice by integrating the use of social science techniques into new R&D projects. This movement is currently facilitated and supported by closer working with and involvement of the Defra APHEA Team (Animal and Plant Health Evidence and Analysis) and application of the expert advice of this team. Further support is provided by two fellows recently appointed specifically to develop social science in the area of Animal Welfare. The fellows will be evaluating Defra's wealth of knowledge on animal welfare and appraising evidence gaps to inform future research that could be developed to deliver policy relevant evidence.

Given that the field of animal welfare science is a relatively new one, there is an ongoing and considerable effort internationally to develop meaningful and practicable indicators that reflect the holistic welfare state at both the individual and group level. Whilst traditional metrics have been purely input based (availability of water, bedding, stocking density), there is a growing interest in adopting a mixed suite of indicators that include output metrics (the state of the animal). The quality of welfare attained in any given system is defined by the best evidence available, but in an R&D project is likely to include a range of physiological indicators such as faecal/blood/salivary cortisol, as well as behavioural measures such as the recently developed cognitive bias test.

Prioritisation of research requirements will be impacted by a number of factors, including the number of animals affected (e.g. 162.6 million poultry, 31.6 million sheep etc.), the severity of the welfare concern, the time-frame for legislative change (e.g. adoption of EU Directives) the level of public interest and the availability of co-funding. Given the downward trajectory of R&D spend, the evidence needs identified in this plan reflect the highest evidence priorities where there is a case for Government investment (and where Devolved Administrations are not better placed to provide the desired support). Priorities are continually under review enabling Defra both to plan strategically and to be able to swiftly react to emerging issues.

For details of evidence needs see table below

Policy objective	Short-term evidence needs	Long-term evidence needs
<p>Providing a solid evidence base to support policies to improve standards of animal welfare in the UK, across the EU and internationally – based on a robust and effective control framework using a risk-based approach – with an emphasis on non-legislative solutions.</p>	<p>Data and technical and scientific advice to support EU and international negotiations.</p> <p>Technical and scientific advice to support implementation of the EU Laying Hens and Pigs Directives.</p> <p>Evidence to assess the effectiveness and impact of implementation of the EU Meat Chicken Directive – including operation of the GB trigger system.</p> <p>Data to support preparations for contributing to the Commission’s representative sampling exercise of broiler chickens in slaughterhouses.</p> <p>Evidence to assess the suitability of different designs of enriched poultry cages.</p> <p>Options for solutions to the problem of injurious pecking amongst laying hens.</p> <p>Evidence on which to base future refinements to the risk model used to select farms for animal welfare inspection, and to make the inspection programme more effective and efficient.</p> <p>Evidence to support Farm Animal Welfare Committee (FAWC) analyses and reports.</p> <p>Data to enable the measurement of animal welfare at a national level, to monitor changes over time and help gauge the success of strategies implemented to improve welfare.</p> <p>Review of scope for additional aspects of earned recognition and to make inspection programme more effective.</p> <p>Evidence on long distance international livestock transport concentrating on infant livestock such as calves involving multiple</p>	<p>Detailed evidence to assess the suitability of non-legislative alternatives to delivering higher welfare standards and to develop and encourage best practice amongst animal keepers.</p> <p>Evidence to evaluate the effectiveness of such deregulation.</p> <p>Support for extension of risk-based approach to inspections, enforcement and control.</p> <p>Understanding of key principles of animal welfare to assist the Commission in preparing their simplified legislative framework (under the EU Animal Welfare Strategy).</p> <p>Greater scientific understanding and animal keeper awareness of specific animal needs.</p>

	<p>stages, focussing on collecting information about the condition of such livestock at destinations and outcomes of actual commercial journeys.</p>	
<p>Improving the welfare of animals reared for food in current and emerging production and husbandry systems; developing and promoting effective alternatives to existing systems where proven to be necessary or to make aspects of systems more welfare-friendly. Focus on appropriate outcomes – including the up-skilling of animal keepers</p>	<p>Development of slaughterhouse-focused animal-based indicators of welfare in ruminants associated with welfare during rearing, transport and slaughter processes in order to further develop risk-based policies on inspection, enforcement & commercial assurance standards.</p> <p>Knowledge of welfare implications of electrical stunning in poultry, in particular in turkeys.</p> <p>Knowledge of welfare implications for novel production systems being developed.</p> <p>Technical and scientific support to respond to issues arising from the day to day operation of the various animal welfare regimes.</p> <p>Evidence to support Rural Development Programme funding process (including advice on documentation, scheme applications, etc.).</p>	
<p>Providing evidence to support a robust and effective welfare surveillance programme</p>	<p>Surveillance evidence to identify new and developing threats to animal welfare.</p>	
<p>Providing underpinning evidence about how to ensure markets function effectively and transparently, allowing people to make informed choices based on animal welfare standards</p>	<p>Evaluation of recommendations in FAWC paper on communication and education – and consideration of appropriate responses.</p> <p>Understanding what affects the attitudes of children, young people and adults to animal welfare.</p> <p>Exploring further the factors affecting consumer choice and how this can be influenced positively.</p>	<p>Better understanding of the motivations for the various stakeholders – and the significance of animal welfare to the public's quality of life.</p>

<p>Developing the most appropriate methods of emergency killing of young animals and improving effectiveness of slaughter methods and improved understanding of the slaughter market nationally and internationally.</p>	<p>Evidence on welfare implications of stunning methods used for culling of piglets and kids.</p> <p>Evidence to describe the dynamics of the slaughter without stunning meat market, including export and import drivers and international approaches for regulation and control of slaughter without stunning.</p>	
<p>Considering how breeding and selection can affect the welfare of animals while ensuring that new developments do not compromise animal welfare. Improving understanding of the ethical context of this and other welfare issues.</p>	<p>Detailed knowledge of the cloning process (and the effects on animal welfare) and the scale of activity nationally, EU-wide and internationally.</p>	
<p>Improving the welfare of companion and other non-farm animals</p>	<p>Evidence on which to base future policy on responsible dog ownership.</p> <p>Gathering of information on welfare aspects of game bird production – including novel approaches to game bird husbandry.</p>	
<p>Contributing to our understanding of how welfare objectives can be met in the light of environmental challenges, and in tandem with our environmental objectives</p>	<p>Improved understanding of the impacts of climate change, and methods to alleviate the effects of such, on animal welfare - and suitable mitigation options.</p> <p>Knowledge of options to improve sustainability of livestock production without comprising animal welfare.</p> <p>Understanding implications of intensification of livestock production for animal welfare and how harmful consequences can be avoided.</p>	<p>Evidence to support strategic planning in the light of long-term climate and environmental change.</p>

<p>To maintain sufficient welfare expertise and capability in a broad range of GB institutions</p>	<p>Funding of animal welfare R&D and surveillance evidence activities with a range of GB institutions.</p>	<p>Expand the range of research providers, to tap into the broadest possible pool of expertise.</p>
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3. Future evidence needs

What are the longer-term evidence needs for the policy area/ programme?

Future evidence commissioned by the animal welfare research programme will continue to contribute to the primary policy objective of improving standards of welfare for kept animals (in line with Business Plan priorities) and to ensure effective implementation and enforcement of welfare legislation. Whilst primary research into the welfare of farm animals will remain a strong aspect of this programme, future requirements are likely to cover a broader spectrum of animals. Future evidence requirements will also comprise an increase in socio-economic research, for example relating to application and adherence to known best-practise. Social science exploring the scope for alternatives to regulation and the associated research requirements is underway including a review of behavioural evidence.

Future evidence needs will be identified and prioritised through outputs from ongoing projects, internal formal reviews and in consultation with committees and organisations as outlined within section 4.

4. Meeting evidence needs

What approach(es) will be taken to meeting evidence needs?

The approach to meeting R&D evidence needs is guided by standard Defra procedures. Prioritisation and specification of research is determined through discussion with policy colleagues (including SG & WG), veterinary advisors, disease experts, the APHEA team and livestock industry sector groups as well as being informed by the VST Risk Management Cycle. More recently, the AHWBE has also been involved in high level discussions over evidence needs.

The Animal Health and Welfare portfolio of R&D programmes is managed by a single Evidence Team, which enables very close working and easy identification of cross-cutting issues, which can be addressed in a complementary way. Amongst others, the APHEA team, the wider Defra Evidence & Analysis Community, and procurement processes also facilitate identification of opportunities for working across the Department on issues that affect disparate policy areas.

Within the animal welfare programme, evidence priorities are identified through a number of channels, including:

- FAWC - an Expert Committee advising Ministers on animal welfare issues and its recommendations help to inform the Defra animal welfare research programme

- Research review meetings. In future these will be more regular and systematic – with a clear focus on policy relevance and value for money
- Consultation between the policy, DAs and evidence team and use of information on emerging national and international welfare issues – using intelligence gleaned from EU and international contacts, industry stakeholders, NGOs, welfare research scientists and other experts
- Recommendations for research stated in EFSA opinions, themselves an indication of possible future EU legislative proposals
- Value for money considerations in proposed research projects, including potential for alternative sources of funding or collaboration involving OGDs, NDPBs, industry, welfare NGOs and international research providers. Also use of competitive tendering and peer review processes
- Close collaboration with Government colleagues working on policy areas with animal welfare implications, for example, climate change mitigation and adaptation, food security, food labelling, exotic and endemic animal disease, and CAP reform
- Ministerial and public interest and concerns over specific welfare issues

During the year priorities are identified through the channels outlined above and then meetings are held with the policy team, representatives of the devolved administrations and evidence specialists, where the evidence gaps are ranked based on short term and long term policy need, scientific likelihood of success, whether they will significantly augment our existing evidence base or help maintain essential scientific capability and the estimated cost of any proposed new research. Where appropriate policy and science leads may convene to undertake a multi-criteria analysis that allows comparison of research across the programme.

Whilst some evidence needs are addressed internally via literature reviews or scoping secondary analysis of existing data, most major evidence needs are appropriately addressed through commissioning with an external research institute. Once identified and prioritised, these substantial research needs are procured either through open competition or direct commissioning, with open competition as the default position. All applications are peer reviewed externally, complemented by internal expert review regardless of procurement route. Internal expert review engages appropriate policy colleagues, DAs, veterinary experts, scientists and, where appropriate, social researchers to ensure that all proposed research is challenged for policy relevance in line with government strategic objectives. External peer review engages academic experts as well as industry representatives to ensure there is both academic as well as operational challenge to all proposed research.

R&D projects are monitored by annual reports, site visits and by advisory groups for larger projects that require a greater Defra and/or stakeholder steer. In addition final reports are

peer reviewed where appropriate and revised if necessary prior to publication on the Defra web-site. Researchers are also strongly encouraged to publish their results in peer reviewed journals. The goal is to fund high quality scientific research that informs policy decisions.

All R&D is inherently risky and a balance needs to be struck across the research portfolio between short-term projects to address immediate needs and longer term projects that may answer strategic evidence needs and lay the foundations for short urgent pieces of work to address specific policy requirements. A balance is also maintained between low risk projects, with more limited projected outcomes and more ambitious projects which carry a higher risk of failure, but are consequently more informative and useful if successful. Using independent advice and internal expertise, decisions are taken on how crucial a particular project is and the consequences of a failure to address the issue in question. To mitigate these risks regular monitoring of projects is carried out.

As appropriate, extensive and regular meetings are held between contractors, the Evidence Team in AHVLA, Defra policy colleagues and industry stakeholders to ensure that project results are transmitted and interpreted effectively for use in a policy context. This close relationship also allows feedback of changing policy priorities to the researchers during a project (which can allow for projects to be adjusted if necessary).

Defra engages in a range of international fora for the purposes of information exchange and research coordination and participation in, for example, the ERA-Net and the EU framework programme, has levered significant funds from EU organisations. The ERA-Net has resulted in a total expenditure of approximately €45M of which Defra contributed approximately €5M, in support of two research calls. This kind of coordinated approach facilitates international collaboration, thereby increasing the availability of expertise from other national research groups and maximising the benefits to individual participants.

The Scottish government separately funds welfare research as part of its 5 year strategic research programme for Scottish main research providers, so there is a need to avoid duplication and consider synergies wherever possible. Whilst Scottish Government does support maintenance of expertise at key institutes, there is a risk that the national field of experts will diminish as available funding reduces. Whilst adhering to procurement rules, an expansion of the contractor base and inter-reliance on provision of expertise internationally will become more important. Participation in mechanisms such as ERA-net collaborative calls for research will bolster the international network of experts that Defra is able to tap into and also drive international collaborations that national centre of expertise can engage in. Defra is additionally involved in an EU-wide scoping project for the development of Animal Welfare Reference Centres that will provide a focus for international expertise.

5. Evaluating value for money and impact

What approach(es) will be taken to maximise and evaluate value for money and impact from evidence?

R&D will be procured according to the Evidence Handbook and is subject to internal expert input and external peer review that provides an independent scientific challenge.

An effective multi- and inter-disciplinary approach to fulfilling evidence needs is ensured through use of relevant expertise, advisory bodies and collaboration with other funding bodies, both in GB and externally. There is also increasing engagement internally with teams such as the APHEA team, which offer expertise in economic analysis and social science advice. This alongside external peer review ensures robust and high quality evidence.

Value for money will be ensured through peer review of all project proposals (VFM is a specific question we ask peer reviewers to consider) and close monitoring of projects to ensure they do not drift off course. Also that those carrying out research can, when feasible, adjust projects mid-stream in the light of new findings and/or policy priorities.

Value for money is also ensured where possible through co-funding with the animal health industry or other UK research funders (e.g. BBSRC) and more recently with other European Member States and such strong links with other funders enable leverage of funds where possible.

Project specific dissemination strategies are developed at the start of every project to ensure effective communication including how the evidence generated from the work will be used by policy, how stakeholders will be involved and how knowledge will be retained and promoted. Each project is also evaluated once completed with regard to its delivery, timeliness and policy impact, either through internal or external review.

Policy objectives are regularly tested through discussions with internal and external stakeholders (through expert groups). European and international institutions, other Government Departments and Devolved Administrations are also used to inform policy development and implementation.

The evaluation of evidence in Defra is an important and ongoing activity at project level and contributes toward ensuring that good quality, robust evidence is used to underpin departmental policy^[1]. Evaluating the impact of evidence on policy development is complex and often only possible over the long term. Evaluation will necessarily be linked to Defra's Evidence Investment Strategy, which provides a strategic overview of how evidence fits with Defra needs. Programme level evaluation to assess the impact of

^[1] <http://archive.defra.gov.uk/corporate/docs/policy/evidence-policy-report.pdf>

evidence on policy will be explored (depending on available resource) following publication of the new Evidence Investment Strategy. It will be important that evidence currently being explored will have time to make an impact and for any new direction emerging from the new Evidence Investment Strategy to be tested and incorporated.