UK Animal Health and Zoonoses Research – focus, funding, infrastructures and partnerships
UK Research Funding

• Department for Business Innovation and Science
  ➢ BBSRC
  ➢ Technology Strategy Board
• Defra
• Food Standards Agency
• Scottish Government
• Department for Agriculture and Rural Development for Northern Ireland
UK Research Funding (continued)

- Department for International Development
- Wellcome Trust
- Livestock Industry
  - BPEX
  - EBLEX
  - Dairy Co
  - QMS
  - HCC
- Pharmaceutical industry
Defra AH&W Research 2011/12 costs

Total Spend in 2010/11  30,105,358

- Animal Welfare  2,494,219
- TSEs and Animal by products  5,777,672
- Exotic Diseases  7,386,789
- bTB  6,845,622
- New and Endemic Diseases  1,394,167
- Public Health Protection  2,253,434
- Vet Medicines and Antimicrobial Resistance  2,262,121
- Aquatic Animal Health  1,691,334
Defra Research

- Animal Welfare
- TSEs and Animal by products
- Exotic Diseases
- bTB Evidence Plan
- New and Endemic Diseases
- Public Health Protection
- Vet Medicines and Antimicrobial Resistance
## Defra’s AH&W Research Providers

<table>
<thead>
<tr>
<th>Contractor</th>
<th>2010/11 costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary Laboratories Agency</td>
<td>15,158,446</td>
</tr>
<tr>
<td>Institute for Animal Health (BBSRC)</td>
<td>4,540,345</td>
</tr>
<tr>
<td>Other Agencies (FERA, CEFAS, ADAS and Roslin)</td>
<td>4,500,438</td>
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<tr>
<td>Universities and Other</td>
<td>5,062,291</td>
</tr>
<tr>
<td>Co-Funded with BBSRC</td>
<td>843,838</td>
</tr>
<tr>
<td>Total</td>
<td>30,105,358</td>
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</tbody>
</table>
Defra’s Research Providers

- Veterinary Laboratories Agency
- Institute for Animal Health (BBSRC)
- Other Agencies (FERA, CEFAS, ADAS and Roslin)
- Universities and Other
- Co-Funded with BBSRC
Animal Health - Priority

BBSRC supports research aimed at combating infectious diseases - including endemic, exotic and zoonotic - that reduce the health and welfare of animals farmed for food production in the UK, and undermine the sustainability of the livestock, poultry, aquaculture or apiculture industries.

Working with other funders, multidisciplinary research underpinning the “One Biology One Health” concept is encouraged for infectious diseases of zoonotic origin.
Animal Health Portfolio

- Animal Health/Disease research approx 11% total research portfolio over past 5 years
- £226M over period 2005/06 – 2009/10

<table>
<thead>
<tr>
<th>Annual Spend (£M)</th>
<th>2005/06</th>
<th>2006/07</th>
<th>2007/08</th>
<th>2008/09</th>
<th>2009/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal diseases total</td>
<td>24</td>
<td>26.9</td>
<td>29.6</td>
<td>31.8</td>
<td>33.9</td>
</tr>
<tr>
<td>% of total research portfolio</td>
<td>10%</td>
<td>11%</td>
<td>11%</td>
<td>11%</td>
<td>12%</td>
</tr>
</tbody>
</table>
Total spend in the past 5 years based on disease type

- Animal Endemic Diseases includes: Marek’s disease, mastitis and tuberculosis
- Animal Exotic Diseases (non native) includes: blue tongue, avian flu, foot and mouth, and African swine fever
- Food-borne Zoonoses includes: *Campylobacter, Salmonella*
- Parasitic Diseases includes: microbial protozan pathogens, *Leishmania, Toxoplasma*, larger helminths (nematodes)
- TSE’s
- Other Diseases includes research involving more than one type of disease organism or research where the disease organism in unspecified
Annual spend of past 5 years based on disease-type

Endemic Diseases
Exotic Diseases
Foodborne Zoonoses
Parasitic Disease
TSEs
Other diseases

Annual Spend (£K) 2005/06
Annual Spend (£K) 2006/07
Annual Spend (£K) 2007/08
Annual Spend (£K) 2008/09
Annual Spend (£K) 2009/10
Types of Funding Mechanisms For Animal Health

- Responsive Mode
- Managed Initiatives
- Core Strategic Grants to Institutes

![Pie chart showing percentages for different funding mechanisms.](chart.png)
Combating Infectious Diseases of Livestock for International Development

• £13M+ investment from BBSRC and Department for International Development with contributions from the Scottish Government
• 16 projects, 15 UK institutions and 8 other countries
• Projects includes: Dip-stick test for “Goat Plague”; Comparing Foot and Mouth disease in wildlife and livestock;; Developing a vaccine to control deadly liver fluke
UK Research and Innovation Strategy for *Campylobacter*

The UK's main public funders of food safety research published a co-ordinated strategy to investigate the food bug *Campylobacter*. Approximately £3M investment from BBSRC and FSA to support modelling approaches to increase understanding of the organism and the impact of interventions and Practical, cost-effective control of *Campylobacter*. 
Environment and Social Ecology of Human Infectious Diseases (ESEI) Initiative

• A joint MRC, NERC, BBSRC and ESRC initiative
• Aims to support interdisciplinary research, encompassing and integrating Environmental Sciences, Health Sciences, Social Sciences, and Biological Sciences approaches that will address either a currently important Public Health problem, or demonstrably applicable to a potential future Public Health threat. Research addressing the systems giving rise to zoonotic infections and their drivers into human populations are particularly encouraged
• Up to £10M is available for this initiative – decision to be made later in the year
Recent Research Programmes (now closed)

Ecology of Infectious Diseases

A joint NSF/NIH/BBSRC/ESRC call was launched last year to fund the development of predictive understanding of the transmission dynamics.

A total of 90 proposals were received of which 13 were UK-US collaborative projects.

BBSRC/ESRC are in the process of funding 3 projects.
Recent Programmes (now closed)

Combating Swine Influenza (COSI) Initiative (£1.7M)

A joint, BBSRC, Defra, MRC and the Wellcome Trust, fast track funding initiative to develop a vital understanding of how the virus behaves in the pig population and how interaction with farm workers may help it evolve and spread.

Meeting - “The UK Research Response to Pandemic H1N1 2009: Key Results and Implications for Policy Makers” Planned for 18 July 2011
Future Developments

• Developing new ERA-Net programme that would include both Animal Health and Welfare – funding for this ERA-Net will be confirmed later on this year
• Developing Animal Health Industry Club
• Activities related to STAR-IDAZ- Global Alliances in Animal Health
Future Developments - Institute for Animal Health

£100M investment for redevelopment of the Institute for Animal Health’s Pirbright Laboratory
Scottish Government AH&W Research

Two 5-year Strategic Research Programmes at Main Research Providers (MRPs)

• ‘Animal Health & Welfare & Plant Health’ Theme in ‘Food Land & People’ programme

• includes multidisciplinary research on prevention and control of endemic animal and plant diseases

• > £7m per annum
Scottish Government AH&W Research

Centre of Expertise on ‘Reducing the Impact of Animal Disease Outbreaks’

• provides access to advice & analyses on epidemiology of important diseases to government policy makers

• consortium of MRPs and universities

• approx. £1.5m per annum
Scottish Government AH&W Research

Strategic Partnership in Animal Science Excellence (‘SPASE’)

- brings together scientific expertise to enhance Scotland’s world leading position in animal science
- consortium of MRPs and universities
- approx. £1m per annum
Scottish Government AH&W Research

Further information available at:

http://www.scotland.gov.uk/Topics/Research/About/EBAR/StrategicResearch/future-research-strategy
EMIDA ERA-Net and Associated Activities
EMIDA ERA-NET

Coordination of European Research on Emerging and Major Infectious Diseases of Livestock

A 39 month Coordination and Support Action (Coordinating) project with a budget of 1 Million Euros
Began 1 April 2008
Need for coordination in Animal Health research

• Common problems - animal diseases are the biggest threat to livestock production.
  – Exotic diseases
  – Evolving/remerging pathogens

• Legislation relating to animal welfare and disease control is largely enacted at the EU level requiring a common evidence base.

• Animal research is expensive
Research Funding in Europe

- Regional and national funding bodies
- Charities and private non-profit foundations
- Pharmaceutical and Biotechnology industries
- Livestock industries
- European Commission (~7%)

(All these funding bodies have their own agendas/priorities that are set independently of each other)
SCAR CWG on Animal Health & Welfare Research - background

- Improving collaboration on research activities.
- Creating critical mass and focus to deliver the animal health and welfare research needs.
Proposed Activities of Collaborative Working Group

1. Map the landscape of national, EU and international RTD.

2. Map programme objectives against relevant policy drivers.

3. Identify gaps.
Proposed Activities of Collaborative Working Group (continued)

4. Assess research capacities and identify shortfalls.

5. Establish common agreement on priorities.

6. Develop mechanisms for cooperation on procurement.
The Collaborative Working Group (CWG)

The Collaborative Working Group on European Animal Health & Welfare Research (CWG) was formed in response to an initiative of the EU Standing Committee on Agricultural Research (SCAR). The Collaborative Working Group first met in Brussels in December 2005 and currently involves almost thirty funding organisations in over twenty countries.

Our goal is to establish a durable and focused network of research funders from Member and Associated States of the EU - providing a forum leading to improved collaboration on research prioritisation and procurement, creating the necessary critical mass and focus to deliver the animal health and welfare research needs of our policy makers and the European livestock industry.

CWG Objectives:

- Share information on research projects
- Coordinate research activities
- Work towards a common research agenda
- Work towards mutual research funding activities, in the field of animal health, fish health and those conditions which pose a threat to human health

Other activities include mapping the landscape in relation to provisions of research facilities, including expertise and micro organism collection.
Aims of EMIDA

The overall aim of the Animal Health ERA-NET is to build on and accelerate the work of the SCAR CWG in developing a durable focused network of national research funders in Member and Associated States of the EU for the purpose of sharing information, coordinating activities and working towards a common research agenda and mutual research funding activities in the field of animal health.
Scope of EMIDA

The scope of the project will include emerging and major infectious diseases of production animals, including fish and bees and including those conditions which pose a threat to human health but excluding food safety issues relating to livestock products and diseases of wildlife, except where they act as a reservoir of infection for humans and animals.
EMIDA

• 29 partners in 19 countries and four associated partners

• Combined research budget in the region of 270 million Euros
EMIDA Partners

- Ministries of Agriculture 14 (16)
- Ministries of Health/Public Health 5
- Ministries of Education/Research Councils 5
- Ministry of Agr and Research Council Agencies 2
- Ministries of Agr. and Health Agencies 1
- Others 2 (2)
## Workpackage Leaders and Deputy Leaders

<table>
<thead>
<tr>
<th>WP</th>
<th>WP Leader</th>
<th>WP Deputy-Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coordination &amp; Management</td>
<td>UK</td>
<td>The Netherlands</td>
</tr>
<tr>
<td>2. Mapping &amp; Analysis</td>
<td>France</td>
<td>Italy</td>
</tr>
<tr>
<td>3. Joint research calls</td>
<td>Germany</td>
<td>Denmark</td>
</tr>
<tr>
<td>4. Foresight</td>
<td>Netherlands</td>
<td>Czech Republic</td>
</tr>
</tbody>
</table>
EMIDA Work Packages

• WP1 - Project coordination, management, communication & dissemination
• WP2 - Mapping and analysis of existing research and current research needs and research programme development.
• WP3 - Developing, evaluating and implementing instruments for common calls
• WP4 - Developing a strategic trans-national animal health research agenda.
EMIDA

• Better sharing of information of current activities
  http://www.emida-era.net/
• Better coordination of the national research programmes
• Developing common research agendas
• Joint/common research calls
• Building research capacity relating to animal health
WP2 Mapping Research Landscape

• Research Project database.

• Research Publications database

• Research Patents database

• Report on National Programmes
First Common Call

• Total budget in the region on 20 million Euros
• Project consortia must involve a minimum of three partners from three different countries.
• Two step submission procedure involving a pre-proposals and a full proposal.
• Proposals coming forward with support from industry or other non-EMIDA funding bodies are encouraged.
Response to Call

• **Topic 1 Vectorborne diseases**
  14 pre-proposals & 7 full proposals – 2 selected

• **Topic 2 Zoonoses and antimicrobial resistance**
  14 pre-proposals & 5 full proposals – 2 selected
Response to Call

• **Topic 3 Major infectious diseases affecting production**
  
  39 pre-proposals & 26 full proposals – 7 selected

• **Topic 4 Aquaculture**
  
  10 pre-proposals & 7 full proposals – 1 selected.
1st Common Call

77 Pre-proposals
45 Full proposals
12 Selected for funding

Total value of projects > €21.37 million (partners are contributing €15.25 million)

http://www.emida-era.net/index.php?page=content&id=17
Second Common Call

• A. Ecology and animal health – diseases transmitted by arthropods
• B. Ecology and animal health – wildlife reservoirs
• C. Zoonoses
• D. Antimicrobials and anthelmintics: resistance and alternatives for use
• E. Production diseases – disease susceptibility
• F. Production diseases – epidemiology, diagnostics and vaccination
• G. Diseases in aquaculture
• H. Epizootic diseases

EMIDA
ERA-NET
WP 4 Strategic trans-national animal health research agenda.

- Foresight review
- Delphi Study
- Consultation workshop (STRAW)

- WP 2 mapping
- ETPGAH and DISCONTOOLS
New Animal Health and Welfare ERA-NET

The new ERA-Net will aim at building on the activities/achievements of EMIDA with regard to animal health as well as extending activities to address animal welfare research issues.

To be led by INRA
Websites

• http://www.scar-cwg-ahw.org

• http://www.emida-era.net/
Global Strategic Alliances for the Coordination of Research on the Major Infectious Diseases of Animals and Zoonoses

STAR-IDAZ
STAR-IDAZ

This global initiative will address the coordination of research programmes at international level in the area of animal health and in particular infectious animal diseases including zoonoses. It will build on the existing relevant ERA-NET and INCO-NETs through the creation of a global network of research funding organisations.
STAR-IDAZ

• 22 partners in 17 countries
  • 3 industrial partners
• 4 associated partners
Goal of STAR-IDAZ

To improve coordination of research activities on the major infectious diseases of animals (including zoonoses) so as to hasten the delivery of improved control methods.
Objectives

• Strengthen the linkages between and reduce the duplication of global research effort on high priority infectious diseases of animals (including zoonoses) maximise the efficient use of expertise and resources and accelerate coordinated development of control methods.

• Identify and co-ordinate the response to gaps in research activities for targeted diseases.
Objectives (continued)

• Create the necessary critical mass and capacity to address emerging infectious disease threats.
• Improve the cost–effectiveness and added value to network partners of current research programmes.
• Develop durable procedures for a better co-ordinated, rapid response to urgent research needs.
• Identify unique regions with localised diseases and improve access to research in those areas.
• Improve access to and the utility of research results across all partner organisations.
Objectives (continued)

- Facilitate the establishment of research management capacity and programmes in those partner countries wishing to develop research activities in this area.
WP1 - Project coordination, management, communication and dissemination.

(including the establishment of regional networks and the development of durable mechanisms for long-term coordination)

WP2 - Sharing information on existing research programmes

(including infrastructure and existing linkages between programmes)
WP3 - Analysis of and responding to global, regional and industry sector priorities
   (including establishing priority diseases/issues and developing common research agendas)
WP4 – Facilitate networking of ongoing research activities on major issues
   (including identifying bottlenecks to cooperation and piloting partnering events)
WP5 - Developing strategic trans-national animal health research agendas
Regional Networks

**Americas Regional Network** (coordinated by Embrapa)  
Regional partners, other countries from the region and regional organisations (such as PANAFTOSA and OIRSA).

**Asia and Austral-Asia Regional Network** (Coordinated by AG DAFF)  
Regional partners, other countries from the region and regional organisations (such as APHCA)

**European Regional Network**  
EMIDA partners and Russia

African Network