



EMIDA ERA-NET - “Coordination of European Research Funding on Emerging and Major Infectious Diseases of Livestock”

Project Summary – Final Report

Project objectives

The disease threats to the livestock industry have increased steadily over the past decades as a result of globalisation, evolving pathogens and climate change. Responding to animal disease threats relies heavily on science; research makes a significant contribution to the development of disease control policy and the translation of policy, and other drivers for improving animal health, into practical effect.

Although the legislation that underpins policy for the control of statutory diseases is determined at the EU level, the research that supports policy development and implementation is primarily carried out at the national level and has been largely uncoordinated as has the research on other major infectious diseases currently affecting livestock production. The aim of EMIDA, the animal health ERA-NET, was to build on and accelerate the work of the Collaborative Working Group on Animal Health and Welfare Research (CWG) under the EU Standing Committee on Agriculture Research 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. The scope of the project included 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 reservoirs of infection for humans or production animals.

The objectives of the ERA-NET were delivered through the following four work packages: WP1. Project coordination, management, communication and dissemination; WP2. Mapping and analysis of existing research and current needs and information on the commissioning and management of joint programmes; WP3. Develop, test, evaluate and refine instruments for joint calls and WP4. Developing a strategic trans-national research agenda on emerging infectious animal diseases.



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Project Participants

EMIDA started on 1 April, 2008 and ended on 31 December, 2011 initially with 27 partners, later expanded to 29 partners, from 19 countries, 15 Member States, Norway, Switzerland, Israel and Turkey, with a combined annual research budget for work on animal health in the region of €270 million. There were also three associated partners. The project partners consist of ministries of agriculture (14), ministries of health/public health (5), ministries of education/research councils (4) or agencies under the aforementioned (6). The varied background of the organisations involved, each with their own agendas/priorities, encompassed the funding of research across the spectrum from basic to strategic and applied science.

Systematic exchange of information

A project website was established which was linked to the CWG website and associated project database. The EMIDA website is linked to a password-protected discussion forum, file sharing facility and shared calendar allowing exchange of information between project partners. A framework was established under the CWG for the capture of research project information and a database developed which is serving the needs for the collection of information for both EMIDA and the CWG. Details of over 2,100 projects have been uploaded to the project database by the project partners. To complete the mapping of the research landscape, three other databases of supporting information, in the form of publications over the past four years, international animal health related patents and EC funded animal health related projects, were also developed using data from international scientific databases. These databases, the methodology behind them and the associated reports on research outputs can be accessed on the project website.

A questionnaire on current management practices relating to the research programmes of the project partners and their perceived needs and priority topics of interest for inclusion in a common call was conducted and the resulting report is also available on the project website.

Development and pilot of instruments for common calls

Through the aforementioned questionnaire, a large number of topics were suggested as possible subjects for a common research call. A matrix approach based on disease groups and technologies was used to rationalise these and from this, four broad topics were identified and agreed at the second Project Consortium meeting. Analysis of partners' programme management practices provided the basis for those practises and instruments employed in the first EMIDA common call. It was agreed that a virtual common pot funding mechanism would be utilised. The pilot common call based on the following four topics was opened in early September, 2009:

- Vectorborne diseases
- Zoonoses and antimicrobial resistance, excluding microbial safety of products
- Major infectious diseases affecting production
- Aquaculture

Seventy seven pre-proposals were received in response to the Call of which 45 were shortlisted and the applicants invited to submit full proposals. All were reviewed by independent expert evaluators and subsequently discussed and ranked at a meeting of these evaluators. Twelve projects, with a total value of €21.37 million (of which the EMIDA partners contributed €15.25 million), were selected based on the rankings and available funding.

Following the success of the Pilot Call, a second common call was launched in February, 2011, again using the virtual common pot funding model. Whereas the Pilot Call had four fairly broad topics, the second call had eight activity lines and 51 associated specific topics. The activity lines were as follows:

- Ecology and animal health – diseases transmitted by arthropods
- Ecology and animal health – wildlife reservoirs
- Zoonoses
- Antimicrobials and anthelmintics: resistance and alternatives for use
- Production diseases – disease susceptibility
- Production diseases – epidemiology, diagnostics and vaccination
- Diseases in aquaculture
- Epizootic diseases

Ninety eight pre-proposals were received involving 600 research groups requesting a combined total of 150 million Euros. Fourteen projects were funded with a €19.9 million contribution from 21 EMIDA partners towards a total value of €21 million.

The proposal submission and evaluation processes were performed electronically through the EMIDA Submission Server, an online tool developed especially for the EMIDA common calls. The Submission Server was the central contact platform between the applicants, funders, evaluators and the Call Office. Proposals were completed online as were the peer reviews.

A Lessons Learnt Report, describing the tools and processes developed for the calls and evaluating their effectiveness, is available on the project website.

Development of a strategic trans-national animal health research agenda

A Foresight and Programming Unit (FPU) was established which reviewed 43 relevant foresight studies and identified issues and drivers. The results of this exercise were further developed and refined in a Delphi study - a foresight exercise the objective of which was to systematically consult experts from a wide range of disciplines that might in some way relate to emerging infectious animal diseases so as to advise on current and future European capacity in the identification, mitigation and prevention of infectious animal diseases (in particular in relation to production animals), and to identify what steps are required in order to develop a common research agenda of utility at a pan-European level. The process consisted of two rounds of online questionnaires the outcomes of which were published in a report and the material was also used as part of a PhD thesis and peer reviewed publication in *Preventive Veterinary Medicine*.

The results of the Delphi Study and Review of Foresight Studies formed the basis for discussions at a consultation workshop which was held in Prague in June, 2010. The Strategic Research Agenda Workshop (STRAW) involved thirty three experts from a range of backgrounds discussing the research needed to enable EMIDA partners to identify, prevent, control and mitigate emerging and infectious animal disease threats to Europe in the next 10 to 15 years. This was performed at a pan-European level and for four bio-geographical zones; Atlantic, Nordic/Baltic, Continental and Mediterranean. The topics of importance identified at the pan-European level were surveillance, biosecurity, host pathogen interaction and vaccines whereas the highest priority for the Mediterranean region was a better understanding of vectorborne

diseases and health effects of ecosystem change. The full report on the STRAW containing the methods, results and conclusions is available on the project website.

The three foresight exercises mentioned above fed into the development of the EMIDA Strategic Research Agenda (SRA). A draft version of the SRA was validated and finalised at a workshop held alongside the Final Project Stakeholder and Dissemination Conference in London in June, 2011. It is intended that the SRA will provide guidance for EU wide effective and efficient procurement of research, provide a framework for funders of animal health research to work in a cooperative manner, be cost effective, cost efficient and sustainable.

Results achieved

The animal health research landscape was mapped and information shared through the development of four databases. Analyses of these data have been published in a number of reports.

Two common, trans-national research calls were run successfully and resulted in the funding of approximately €42 million worth of research at relatively minor individual expense to the partners. The practical systems developed in these calls will now be taken forward and used by the CWG and ANIHWA, a new EC funded ERA-NET concerned with the coordination of European research on both animal health and welfare, for future common calls.

Three foresight exercises were conducted sequentially, each using the results of the previous study culminating in the development of the EMIDA Strategic Research Agenda (SRA). The EMIDA SRA takes a multidisciplinary, 10-15 year forward look, considering medium and long term needs for research and maintenance of research capability to be brought forward through the CWG as a sustainable coordination network.

The major outputs of the EMIDA ERA-NET are available from the project website and are listed below:

- European Publications Database (and report on the methodology behind it)
- European Research Project Database
- Research Patents Database
- EC Funded Projects Database
- Report on the Mapping of European Research Publications on Infectious Diseases of Livestock
- Report on Mapped and Analysed Data and Information from National Programmes
- FPU Terms of Reference
- Overview of Foresight Studies
- Two common research calls completed

- Set of call documents and procedures produced
- Online submission server for proposal collection and evaluation (www.submission-emida-era.net)
- Report on Bibliometric Mapping of Research Disciplines in the Field of Infectious Diseases of Animals
- Report on Strategic Research Agenda Workshop (STRAW)
- Report on Delphi Study
- Report on Lessons Learnt from Common Calls
- Strategic Research Agenda - Emerging and Major Infectious Diseases of Livestock: 10-15 Year Outlook. Includes an Action Plan for Maintenance of the SRA and an Action Plan for Joint Trans-National Programmes

Potential impact and the future

The aim of EMIDA was to build on and accelerate the work of the Collaborative Working Group on Animal Health and Welfare Research (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. EMIDA has certainly achieved this aim and more.

With EMIDA and the CWG membership consisting of essentially the same group of organisations, the funding EMIDA received from the European Commission (EC) has enabled everyone to get to know their counterparts on a personal level through regular project meetings. This opening of the lines of communication has facilitated the sharing of information and coordination of research funding activities. Over the near four year lifespan of EMIDA, a *Modus Operandi* and Memorandum of Understanding were produced for the CWG which helped it to further develop into a sustainable structure consisting of five subgroups; Animal Health, Animal Welfare, Foresight and Infrastructure, Animal Genetics and Genomics, and Animal Management and Housing. EMIDA henceforth operates as the Animal Health Subgroup of the CWG with the FPU taking the role of the Foresight and Infrastructure Subgroup, based on the EMIDA FPU Terms of Reference. The outputs of EMIDA, including the databases, will be housed indefinitely within the CWG website and the EMIDA common call processes, documents and Submission Server will be available to the CWG.

The Foresight and Infrastructure Subgroup of the CWG will look to take forward the SRA using procurement procedures developed and piloted under EMIDA. It is intended that, in order to

maintain the SRA, a consensus workshop like the one performed after the Delphi Study be conducted every two to three years using a core group of experts with additional experts drafted in as necessary in order for the SRA to evolve and remain relevant.

As well as through the CWG and ANIHWA, the research coordination activities kick-started by EMIDA are being continued and built upon through another EC funded project, STAR-IDAZ which is concerned with global coordination of research on infectious diseases of animals and zoonoses.

The structure and capability developed through EMIDA are expected to have a significant impact on the European Animal Health Research Area in that; a) a new avenue for research procurement other than national funders and the EC is now available, and b) national funders can provide coordinated, comprehensive information on existing research activities and consensus views on future needs and priorities to the EC and other stakeholders, and c) it will facilitate the strengthening of European research capacity.

National and regional research programme owners and research providers will benefit from; a) the reduction of research duplication and the associated increase in funding value and leverage through the pooling of resources, b) the networking of research providers, including across different scientific disciplines, as encouraged through common calls, and c) the joined-up approach of private/public and fundamental/applied research funders which will assist the uptake of research outputs.

The overall impact of EMIDA is the ability of the network to collectively respond to the rapidly developing European policy needs and create the tools for improved control of the major animal diseases threatening the livestock industry of Europe and/or of public health concern by bringing forward joint research programmes on emerging and major infectious diseases of livestock.

WWW.EMIDA-ERA.NET

