

## Final Report – March 2015

### Executive Summary

Animal diseases can cause serious social, economic and environmental damage and in some cases also threaten human health. An increasing number of the major disease problems or threats faced by the livestock industry are of a global nature. The aims of “Global Strategic Alliances for the Coordination of Research on the Major Infectious Diseases of Animals and Zoonoses” (STAR-IDAZ) were to strengthen the linkages between and reduce the duplication of global research effort, maximise the efficient use of expertise and resources and accelerate coordinated development of control methods at the international level.

STAR-IDAZ involved partners from 16 countries around the world with organisations from a further 30 countries involved at a regional level through networks established for the Americas, Asia and Australasia and Africa and the Middle East to complement the existing European network.

### Systematic exchange of information

The [Publications Database](#) maps animal health related scientific publications with abstracts in the ISI Web of Science from 2006 to 2013 according to disease/pathogen group, scientific discipline, animal species group, research organisation and country. It allows users to identify the major research institutes publishing on a specific topic across and within countries and an analysis of collaborations between research institutes based on their co-publications is included in a report available from the website. The [Research Organisation Database](#) provides an overview of research centres, funding organisations, programmes and facilities, in the field of animal health across member countries.

### Priority identification and networking

Priority diseases and cross-cutting issues identified by members include Influenza, Mycobacterial Diseases, Foot and Mouth Disease (FMD), Salmonella, Helminth Parasites, Porcine Reproductive and Respiratory Syndrome Virus (PRRSV), Brucellosis, African Swine Fever (ASF), Rabies, Alternatives to Antibiotics, Vaccinology and the Role of Livestock Diseases in Greenhouse Gas Emissions. Working Groups have been or are being established with research gaps analyses published on the STAR-IDAZ website as they become available. Existing instruments for collaboration were identified, a report on *Mechanisms for Networking* has been produced as has a report on a survey conducted to map current activities, identify gaps and future needs and establish priorities for the Vaccinology Research Network.

### Global Strategic Research Agenda for Infectious Diseases of Animals

An inventory of animal health related foresight studies and activities was taken and to complement this a questionnaire provided a systematic overview of the foresight/futures/horizon scanning activity, risk assessment and related research landscape in each country and identified contact persons on foresight activity for possible further engagement in the development of the Strategic Research Agenda (SRA) and/or inclusion in a database of foresight experts. The results of the survey and questionnaire, which identified commonalities, differences, overlaps and possible opportunities for collaboration, are available in the report *Inventory of Foresight Methodologies and Studies*. A number of exercises

including a literature review, workshop and online surveys led to the development of the report *Criteria for Priority Setting* to be used alongside the SRA in prioritising research needs depending on the needs of the user.

Regional foresight workshops and online activities involving experts were conducted and the results brought together and built on in a Global Foresight Workshop in Moscow under the EU-Russia Year of Science which formed the basis of the *Global SRA - Meeting Future Research Needs on Infectious Diseases of Animals and Zoonoses*.

The impact of the network is that partners can collectively respond to the rapidly evolving disease threats and together create the tools for improved control of the major animal diseases threatening the livestock industry and/or of public health concern by coordinating and focussing research programmes on emerging and major infectious diseases of livestock.

All outputs of STAR-IDAZ including reports and databases are available from the project website, [www.STAR-IDAZ.net](http://www.STAR-IDAZ.net).

## Detailed Report

### Project objectives

Animal diseases can cause serious social, economic and environmental damage and in some cases also threaten human health. An increasing number of the major disease problems or threats faced by the livestock industry are of a global nature. The overall aim of the network “Global Strategic Alliances for the Coordination of Research on the Major Infectious Diseases of Animals and Zoonoses” (STAR-IDAZ) was to improve coordination of research activities in this area so as to hasten the delivery of improved control methods.

This was achieved through the establishment of an international forum of R&D programme owners/managers and international organisations for the purpose of sharing information, improving collaboration on research activities and working towards common research agendas and coordinated research funding on the major animal diseases affecting livestock production and/or human health. It built on the groundwork established by the SCAR Collaborative Working Group on Animal Health and Welfare Research (CWG), the EMIDA ERA-NET project and specific INCO-NETs involving partner countries. The scope of the project included coordination of research relevant to emerging and major infectious diseases of livestock, including fish and managed bees, and those infections of livestock that may carry the risk of disease threat to human health. Diseases of wildlife were also considered where they were identified as reservoirs of infection with emerging and major infectious diseases of humans or production animals.

The project objectives were delivered through the following five Work Packages: WP1. Project coordination, management, communication and dissemination; WP2. Sharing information on existing research programmes; WP3. Analysis of and responding to global, regional and industry sector priorities; WP4. Networking of ongoing research activities on major issues and WP5. Developing a strategic trans-national animal health research agenda.

### Project participants

STAR-IDAZ, a four year project, started on 1 February, 2011 and by its completion involved 21 Partners from 16 countries; Mexico, Brazil, Argentina, Russia, China, Australia, New Zealand, India, Germany, Denmark, the Netherlands, France, Spain, Italy, UK and the African Union and including three industrial participants; Pfizer, Meril and IFAH. In addition there were eight associated members including the USDA-ARS, Canadian Food Inspection Agency, OIE, EFSA, ANSES, the Wellcome Trust, Japanese Ministry of Agriculture and the Bill and Melinda Gates Foundation. The varied background of the organisations involved, including Research Councils, Ministries of Agriculture, Health and Science, and charities each with their own agendas/priorities, encompassed the funding of research across the spectrum from basic to strategic and applied science.

Under the framework of the STAR-IDAZ Global Network, regional networks were established in the Americas, Asia & Australasia, and Africa & the Middle East to complement the existing European network operating in the form of the SCAR CWG and its 25 members. With the exception of the Africa & Middle East Network which met once in the final year of the Project, the regional networks met once a year as well as at the annual project consortium meeting when it was held in their region. A number of additional countries were invited to attend the regional network meetings, with their travel costs covered by the project, and participate in STAR-IDAZ research mapping/information collection exercises. The Regional Network established for Asia and Australasia involved, in addition to the regional partners, Vietnam, Cambodia, Indonesia, Malaysia, the Philippines and Thailand. The Regional Network established for the Americas also involved Chile, Colombia, Uruguay, Bolivia and the Caribbean. And the Africa & Middle East Regional

Network involved Kenya, Ethiopia, Nigeria, Uganda, Tanzania, Malawi Israel, Egypt, AU-IBAR, AU-PANVAC, AU-PATTEC, FAO, the African Development Bank, the Bill and Melinda Gates Foundation and ILRI. This broader involvement helped to provide a global perspective on the animal health research landscape and kick-start regional, transnational communication and joint activities.

A Memorandum of Understanding and Modus Operandi have been developed and will soon be signed by STAR-IDAZ Partners thus ensuring the long-term sustainability of the global and regional networks.

### **Systematic exchange of information, research coordination and project outputs:**

A Data Sharing Policy Statement was developed and agreed by partners with the vision for the statement being that, as funders of research and/or research programme managers, we intend to work together to increase the availability to the scientific community and stakeholders of the research data we fund that is collected for the purpose of animal health and/or zoonoses research, and to promote the efficient use of those data to accelerate improvements in animal and public health.

The project website, [www.STAR-IDAZ.net](http://www.STAR-IDAZ.net), is divided into a public area and a members' area. The public area lists the project partners, contains news and information about the project, links to a number of databases and project reports/outputs. The members' area is a password protected, collaborative platform for all project participants and the wider research community.

An [Information Portal](#), developed by WP2, provides information including descriptions of the two databases and links to them. The [Publications Database](#) was originally developed under EMIDA but has been expanded and rebranded to meet the global needs of the STAR-IDAZ network. It maps animal health related scientific publications published on the ISI Web of Science from 2006 to 2013 according to disease/pathogen group, scientific discipline, animal species group, research organisation and country. It allows users to identify the major research institutes publishing on a specific topic across and within countries and to visualise and analyse collaborations between research institutes based on their co-publications. A report analysing the data in this database has been produced and will be published on the project website pending publication of an associated article in the *Veterinary Record*.

The [Research Organisation Database](#), also developed under WP2, provides an overview of research centres, funding organisations, programmes and facilities, in the field of animal health across STAR-IDAZ partner and associated countries and a report has been produced.

### **Analysis of and responding to global, regional and industry sector priorities (WP3) including facilitating networking of on-going research activities on major issues (WP4)**

A questionnaire to partners identified which preliminary priority disease/issues should be the topics of collaborative activities and these included Influenza, Mycobacterial Diseases, Foot and Mouth Disease (FMD), Salmonella, Helminth Parasites, Porcine Reproductive and Respiratory Syndrome Virus (PRRSV), Brucellosis, African Swine Fever (ASF) and Rabies. In addition, three cross-cutting issues were identified; Alternatives to Antibiotics, Vaccinology and the Role of Livestock Diseases in Greenhouse Gas Emissions. Working Groups have been established, research gaps identified, prioritised and published in the Members' Area for network participants to access and work collaboratively for PRRSV, Brucellosis, Bovine TB and Vaccinology. These groups complement the existing networks on Influenza (OFFLU), FMD

(GFRA), ASF (GARA) and Animal Health & Greenhouse Gas Emissions Intensity (AHGHGEI) that are supported by STAR-IDAZ and (apart from AHGHGEI) have gap analyses published on the STAR-IDAZ website with public access.

Existing instruments for collaboration with countries outside Europe were identified and compiled in a list. A report on *Mechanisms for Networking* has been produced as has a report on a survey conducted to map current activities, identify gaps and future needs and establish priorities for the Vaccinology Research Network.

### **Developing strategic trans-national animal health research agendas (WP5)**

Terms of reference were developed and agreed for the Foresight and Programming Unit (FPU) which involved representatives from all regions and was tasked with taking forward the development of a Strategic Research Agenda (SRA).

An inventory of animal health related foresight studies and activities was undertaken and to complement this a questionnaire provided a systematic overview of the foresight/futures/horizon scanning activity, risk assessment and the related research landscape in each country and identified contact persons on foresight activity for possible further engagement in the development of the SRA and/or inclusion in a database of foresight experts. The results of the survey and questionnaire enabled the WP5 leaders to identify commonalities, differences, overlaps and possible opportunities for collaboration and the production of the report *Inventory of Foresight Methodologies and Studies*. A number of exercises including a literature review, workshop and online surveys led to the development of the report *Criteria for Priority Setting* to be used alongside the SRA in prioritising research needs depending on the needs of the user.

Regional foresight workshops and online activities involving experts were conducted and the results brought together and built on in a Global Foresight Workshop in Moscow under the EU-Russia Year of Science which formed the basis of the *Global SRA - Meeting Future Research Needs on Infectious Diseases of Animals and Zoonoses*.

All of the reports mentioned above are available from the project website under Resources > [Deliverables](#).

### **Potential impact**

With the transboundary nature of animal disease and diminishing resources for research and disease control it is more important than ever that global activities are coordinated to avoid duplication and focus effort.

A number of sustainable networks of research funders and scientists established at the global, regional and priority disease level are leading to improved communication, coordination and efficiency of animal disease research. These networks are supported through the ongoing provision of online collaborative platforms and access to online tools developed through STAR-IDAZ. These include the publications and research organisation databases, the password protected members' area as a platform for free discussion and sharing of information, and the project website which has been and will continue to be an effective means of disseminating information and encouraging collaboration. News, events and research calls relating to the field are posted and research gap analyses on a number of diseases are brought together in the one place. Since its launch in July 2011 the site has received 31,421 hits (visits) from 7,322 different people in 153 different countries and is still averaging 730 per month.

The development of an agreed Data Sharing Statement is helping to ensure that well-documented datasets are available for secondary analysis, the capacity to manage and analyse data is strengthened, published work and data are linked and archived, and data sharing is sustainably resourced for the long term.

Foresight exercises conducted under STAR-IDAZ have led to the development of a Global Strategic Research Agenda that will help to facilitate a more coordinated, focussed approach to research prioritisation in the future and, through maintenance of the SRA, ensure capacity to meet possible future challenges.

OIE has been involved as an Associated Partner, attending all the STAR-IDAZ consortium and regional network meetings and active in the Foresight and Programming group developing a long-term Strategic Research Agenda.

The overall mandate of the OIE is to improve animal health, veterinary public health and animal welfare world-wide. This includes prevention of spread of animal diseases; prevention and control of animal diseases transmissible to humans (zoonoses); reduction of risks from infectious diseases at the animal–human–ecosystems interface; improved animal production food safety measures; and improvement of animal welfare.

OIE's strategic objectives include: A) *Provision of scientifically based recommendations on measures for the prevention, control and eradication of animal diseases including zoonoses, taking into account the economic, social and environmental impacts of such measures* and B) *Ensuring the scientific excellence and timeliness of information and advice available to national Veterinary Services and other interested parties in all areas covered by the Organisation's mandate*. The ultimate source of this advice is the outputs of national research programmes which STAR-IDAZ coordinates so it will continue to work closely with OIE in the next phase that will see network partners align their research programmes in order to deliver set targets including new and improved vaccines, diagnostics and therapies, immune and genome enabled tools and underpinning scientific knowledge as identified in gap analyses.

STAR-IDAZ has delivered on its objectives and more, the impact of which is the ability of the network partners to collectively respond to the rapidly evolving disease threats and create the tools for improved control of the major animal diseases threatening the livestock industry and/or of public health concern by coordinating and focussing research programmes on emerging and major infectious diseases of livestock.