EMIDA ERA-NET

# GUIDELINES FOR APPLICANTS

## SECOND CALL
## FOR TRANSNATIONAL RESEARCH PROJECTS
## WITHIN THE FRAMEWORK OF THE ERA-NET
## ON

# EMIDA

## SUBMIT

**PRE-PROPOSALS UNTIL MAY 3rd, 2011**

**Deadline to submit Full- Proposals is September 12th, 2011**

**1:00 pm (CET)**

**www.submission-emida-era.net**

EMIDA ERA-Net is funded by the European Commission's Seventh Framework Programme. Contract No. 219235

## Content

# 1 Call Background

**EMIDA** (Emerging and Major Infectious Diseases of Livestock) is a Coordination Action funded under the European Commission's ERA-Net scheme within the 7th Framework Programme (FP7). EMIDA involves 29 partner organisations and three associated partners involved in funding or managing animal health research programmes in 19 European countries.

EMIDA is concerned with the development of a durable focused network of national research funding organisations 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 funding activities for research on emerging and major infectious diseases of production animals including fish and bees and including those conditions which pose a threat to human health. EMIDA ERA-Net has three main **overarching strategic goals**:

- Develop integrated animal health research policies and activities at the European-wide level.
- Optimise the research provision that underpins European animal health policy development and policy implementation, and the sustainability of the European livestock industries through the coordination of funding to develop improved tools for the control of the major infectious disease threats of livestock.
- Increase the capacity of European animal health science and research, in order to maintain and develop European expertise in this field and maintain Europe's competitiveness in the global Animal Health market.

As part of the development of a framework for the coordination of transnational research, EMIDA has developed instruments for procuring, managing and appraising transnational animal health research activities. EMIDA has agreed to launch a joint research call applying a "distributed common pot" funding mechanism with a total budget of approximately 20 Mio € in March 2011 to build confidence in transnational funding and to enable joint transnational activities and funding of a future transnational animal health research programme. For this purposes, the EMIDA consortium has selected 8 activity lines with several specific topics each focusing on current research needs within the field of animal health.

# 2 General Call Information

## 2.1 Call topics for research proposals

Research Consortia are invited to submit pre-proposals and after verifying eligibility full proposals related to the 8 activity lines and associated specific topics respectively (see "Overview of research topics covered by the second EMIDA call" below). Project consortia must involve a minimum of three (3) and a maximum of ten (10) partners from at least three (3) different (participating) countries. Consortia members from non-participating countries are welcome, but will have to fund their contribution to the research project themselves. Proposals for a particular topic are expected to address at least one activity line or specific topic. Please refer to ANNEX 1 for a detailed description of activity lines and associated specific topics, and further take the specific considerations of funders (ANNEX 3) into account. Please note that each of the activity lines and specific topics is funded by a limited number of differing countries; please refer to "Funding Scheme by Country" (ANNEX 2) for information regarding funding intentions.

### Overview of research topics covered by the second EMIDA call

**A Ecology and animal health – diseases transmitted by arthropods (epidemiology, vector competence, early warning and surveillance systems, diagnostics, vaccines, vaccination strategies)**

- A1 Tick borne diseases (Epidemiology, intervention strategies, tick borne encephalitis, diagnostics, modeling, surveillance systems)
- A2 Vector competence of arthropods and in vivo transmission studies, in particular for important zoonotic pathogens (Infection models with insects, vector mechanisms, transmission studies, risk assessment, West-Nile Fever, Rift Valley Fever, other ARBO-viruses)
- A3 African Horse Sickness (AHS) (Vaccination, epidemiology, host virus interaction)
- A4 Blue Tongue Virus (Vaccines,pathogenesis,epidemiology)
- A5 Development of cost efficient and reliable surveillance systems of (exotic) arthropod borne diseases (Targeted surveillance on time periods, geographical areas (incl. individual farms) and animals of high risk.)
- A6 Rapid in-vector multiplex diagnostics for pathogens and their differentiation (Flavivirus rapid testing, multiplex diagnostics, molecular diagnostics, microarrays)

**B Ecology and animal health – wildlife reservoirs (epidemiology, early warning and surveillance systems, biosecurity)**

- B1 Avian Influenza in wildlife and environment (Epidemiology, modeling, early warning, biosecurity)
- B2 Wild boar, a reservoir for African Swine Fever? (ASF, pathogenesis and transmission in wild boar, early warning)
- B3 Development of risk based and cost efficient monitoring and surveillance systems for rodent borne diseases (Epidemiology, early warning, surveillance systems, invasive species)
- B4 Disease surveillance in combination with monitoring wildlife abundance and ecology (Wildlife population density estimation, pathogen distribution, range of host species, epidemiology, development of European wildlife diseases network)

**C Zoonoses ((re)-emerging threats, epidemiology, early warning and surveillance systems, intervention strategies)**

- C1 Control strategies for Campylobacter in poultry (Intervention strategies, Campylobacteriosis, biosecurity measures, molecular epidemiology, survival and spread, surveillance systems)
- C2 Development of vaccines for salmonellosis in pigs (Vaccination, salmonellosis)
- C3 Specific emerging zoonoses
- C4 Q Fever (Coxiella burnettii, Diagnosis, diagnostic tools, pathogenesis and control)
- C5 West Nile Virus (Diagnostics, modeling, surveillance systems, strain diversity, vector competence, vaccines)
- C6 Re-emerging cystic echinococcosis (Epidemiology, surveillance, strain typing, genotyping)
- C7 Escape variants of highly pathogenic zoonotic agents (Emerging new variants of viruses, genetic drift and shift, immune escape)
- C8 Prioritisation of zoonoses (Based on e.g. extent of damage, frequency of occurrence, economy of control strategies)

**D Antimicrobials and anthelmintics: resistance and alternatives for use (prevalence of resistance, surveillance, interventions, alternatives (e.g. herd management, alternative medication, vaccination, feed additives)**

- D1 MRSA (Intervention strategies, genotypic surveillance)
- D2 ESBL's (Prevalence, genotypic surveillance)
- D3 Anthelmintic resistance (herd management, alternative medication)
- D4 Antimicrobial resistance of Campylobacter spp. along the food production chain and relations to public health (Prevalence in animal species, food products and humans; intervention measures)
- D5 Antibiotic use and intervention strategies to reduce their use in pig and dairy cattle (Reduced use of antibiotics, persuasion strategies)
- D6 Metagenomic analysis of changes in gut microflora of farm animals in a response to antibiotic therapy (metagenomics, microflora, antibiotic therapy, antibiotic resistance)
- D7 The capacity of feed/prebiotics to modulate the intestinal flora that inhibits growth of enteric pathogens (incl. zoonotic) (Feed, prebiotics, alternatives to antibiotics and anthelmintics, intestinal ecology, competitive exclusion)
- D8 Antibacterial vaccines (Vaccine development, vaccination strategy)
- D9 Phage therapy (Lytic phages, animal experiments)

**E Production diseases – disease susceptibility (host–pathogen interaction, immunomodulation, opportunities for intervention)**

- E1 Characterization and development of gut microflora in poultry and its resistance to bacterial pathogens (gut colonisation, immune response, natural resistance to pathogens)
- E2 Respiratory pathogens of swine and their interaction with immune system of respiratory tract (local immunosuppression, viruses, bacteria, respiratory tract)
- E3 Persistent infections in cattle (Innate immunity, mechanisms of immune tolerance)
- E4 TSE free goats (Molecular characterization and biological typing of strains, identification of resistance genes, challenge experiments)

**F Production diseases – epidemiology, diagnostics and vaccination (within and between herd transmission, diagnosis, management strategy, biosecurity, vaccination)**

- F1 Farmer behavior and disease control (Attitude, management, biosecurity, economics)
- F2 Control of BVD in cattle herds (latently infected calves, vaccination, management)
- F3 Paratuberculosis in ruminants (Regional control strategies)
- F4 Multifactor diseases in calves (Diagnosis, pathogenesis)
- F5 Improved diagnosis of Mycobacterium infections (IFN-test vs. antibody detection, identification of specific antigens, T cell immunity, latency)
- F6 Development of vaccines against pig respiratory bacterial diseases for intranasal application (Vaccine, respiratory bacterial diseases)
- F7 High-Throughput methods for pathogen identification and typing (High-throughput, (multiple pathogen) diagnostics, identification, subtyping)
- F8 Brucella melitensis: biotyping and differential diagnostics (Strain typing, monoclonal/polyclonal antibodies)
- F9 Oral fluids as alternative for serum samples (diagnostic tests, sampling protocol, epidemiology, field trials, pen side tests)

**G Diseases in aquaculture (diagnostics, vaccines, zoonotic pathogens)**

- G1 Zoonotic bacterial diseases, e.g. Vibrio vulnificus, Mycobacterium marinum
- G2 Koi herpes virus
- G3 Disease prophylaxis for bacterial, viral and parasitic infections (fish, bivalves, crustaceans, vaccines, adjuvants, immunostimulants, host pathogen interaction,oral/immersion vaccine, ontogeny, vaccination of juveniles)
- G4 Antibiotic resistance and treatment efficacy (Transmission of resistance)
- G5 Diseases in aquaculture with water recirculation (Disease prevention and treatment strategies)
- G6 Vaccines to viral diseases in fish, incl. stimulators of innate immunity in fish (Vaccines, plasmid DNA, delivery, adjuvants, immunostimulants)
- G7 Virulence markers for fish pathogens. (Diagnostics, virulence markers, typing assays)

**H Epizootic diseases (Swine Fevers, AI, FMD, Tb)**

- H1 Avian Influenza (diagnosis, control and prevention)
- H2 FMD, immune response to infection versus vaccination (Virus persistence, protection, tropism, host response)
- H3 CSF/ASF pathogenesis in domestic pigs and wild boar (Virus persistence, host-virus interaction, virulence, hemostaseology, immune response, cytokine environment, strain Spec. natural virus resistance)
- H4 Molecular epidemiology of epizootic diseases using next generation sequencing technology (Next generation sequencing, molecular epidemiology, persistence of strains in populations, evolution of virus strains, phylogeny)

## 2.2 Call Timeline

The call involves a two-step submission procedure with a pre-proposal and a full proposal. Details on the schedule of the second EMIDA call are shown in table 1.

**Table 1: Timeline of Second EMIDA Call.**

| | |
|---|---|
| **Call opening** | March 7th, 2011 |
| **Deadline to submit pre-proposals** | May 3rd, 2011 (1pm CET)* |
| **Invitation for full proposals** | End of June 2011 |
| **Deadline to submit full proposals** | September 12th, 2011, (1pm CET)* |
| **Programme owner's meeting** | November 16th, 2011 |
| **Announcement of funding decision** | December 2011 |
| **Contract negotiations with successful applicants** | December 2011 - March 2012 |
| **Expected project start** | March 2012 |

*CET = Central European Time means coordinated universal time +1 hour

The project period will be limited to a maximum of 36 months between 2012 and 2015.

## 2.3 Call Management

The second EMIDA call will be managed by the EMIDA call office (EMIDA CO) providing administrative support and steered by the funders group (FG) composed of the national funding organisations as listed in ANNEX 4.

All decisions concerning the procedures of the joint transnational call, project funding and any remarks at national level affecting procedures and transnational funding will be taken by the FG of which the EMIDA call office (see chapter 2.4) is a member also.

## 2.4 EMIDA Call Office (EMIDA CO)

Information on the call will be provided on both EMIDA submission website (www.submission-emida-era.net) and EMIDA website (www.emida-era.net).

**Enquiries concerning the second EMIDA call and follow-up actions will be coordinated by the EMIDA Call Office (EMIDA CO)**. The EMIDA CO is located at Projektträger Jülich, Germany (PtJ; Partner of the ERA-Net EMIDA) and assists the FG and the national funding organisations during implementation and realisation of the call until the funded research projects are completed. It will provide the administrative management of the call and **is the primary contact point for Research Consortia.**

**Contact details of the EMIDA CO:**
EMIDA Call Office
Projektträger Jülich (PtJ)
Geschäftsbereich Biotechnologie
EU & Internationales (BIO 3)
52425 Jülich

Your personal contacts are:

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## 2.5 National Contact Points

For all country specific concerns such as national eligibility, national funding, contractual aspects, etc applicants are recommended to get in touch with their national contact (listed in ANNEX 4).

# 3 Eligibility

The second EMIDA call is a transnational call for research proposals in which projects are encouraged by the individual national research funding organisation. As a consequence two levels of eligibility exist:

- EMIDA eligibility criteria (see chapter 3.1)
- National eligibility criteria (see chapter 3.2 and ANNEX 5)

## 3.1 EMIDA Eligibility Criteria

Each project proposal (pre- and full proposal) must:

- involve a minimum of three (3) and a maximum of ten (10) partners from at least three (3) different EMIDA countries. Consortia members from non-participating countries are welcome, but will have to fund their contribution to the research project themselves. Proposals tendered with support (financial or in kind) from industry or other non-EMIDA funding bodies are encouraged;
- be submitted online via the submission website www.submission-emida-era.net before the respective deadlines (pre-proposals May 3rd, 2011 (1 pm CET); full proposals September 12th, 2011 (1 pm CET));
- be filled completely and accurately;
- fit the formal requirements for proposal submission (as outlined in chapter 4);
- meet the technical specifications outlined in the call topic description (ANNEX 1);
- be written in English.

## 3.2 National Eligibility Criteria

To receive funding applicants shall carefully check if their country is supporting the activity line or specific topic of interest. Further applicants must be eligible for funding according to the eligibility criteria set by the national funding organisations (see ANNEX 5). All participants in a consortium of bidders shall check their eligibility by reference to the guidance provided by their individual national funding organisation(s) (ANNEX 3) at the earliest possible stage.

Eligible costs will be determined by the regulations and conditions of each national funding organisation. Research partners may note the level of available national funding available as listed in ANNEX 4. Subcontracting will be allowed according to the regulations of the national funding organisations involved.

## 3.3 Other Applicants

Applicants from countries not providing funding in any activity line or specific topic are welcome in Research Consortia, but will have to fund their contribution to the research projects themselves. They are not counted as eligible partners for the EMIDA eligibility criteria.

# 4 Submission of Proposals

Application is a two-step process including a pre- and full proposal. All proposals must be submitted online at www.submission-emida-era.net.

Each consortium must define a Research Consortium **Coordinator,** who has to conduct the total process until funding decision is in place (see chapter 4.1).

The EMIDA CO will be the primary contact point throughout the application process. Applications will be accepted only online (www.submission-emida-era.net); proposals must be completed in English.

Proposals have to be accurate and to the best of one's knowledge. For further information contact the EMIDA CO (chapter 2.4).

## 4.1 The Research Consortium Coordinator

Each Research Consortium has to appoint a Coordinator, who has the following duties and responsibilities:

- being the single contact point for the EMIDA CO on behalf of the consortium partners;
- submit the pre- and full proposal on behalf of the Research Consortium via the EMIDA submission website
- compile and submit , if requested, reports/deliverables to the EMIDA CO on behalf of the Research Consortium in case of a commissioned project

The Research Consortium Coordinator will NOT be responsible for the financial management of EMIDA research funding, which will be handled at national level between partners and their national funding organisation in each participating country.

The Research Consortium Coordinator must inform the EMIDA CO and each of the national funding organisations of any event that might affect the implementation of the project.

## 4.2 Details for Submission of Pre-Proposals

Pre-proposals must be submitted online on **www.submission-emida-era.net by May 3rd, 2011 (1 pm CET).** The submission tool will be open until **May 3rd, 2011**.

Pre-proposals must be written in English.

When applicants discover errors, pre-proposals may be corrected online by the research consortium coordinator. However corrections will only be possible until deadline of the call.

### 4.2.1 Pre-Proposal Online Submission

Pre-proposals shall cover the following aspects:

- thematic fit with respect to activity line or specific topic;
- duration of the proposed research project;
- name, position and full affiliation of the Research Consortium Coordinator;
- name, position and full affiliations of each Research Partner;
- project description, 6000 characters incl. space characters to describe the fit to the EMIDA aims, expected results and their exploitation;
- project summary, 3000 characters incl. space characters to summarize project;
- financial plan, applicants are strongly advised to adhere to their individual national financial regulations (see ANNEX 4: National (Organisational) Funding Regulations )

**The information given in the pre-proposal is binding.** Thus, any fundamental changes between the pre- and full proposals, e.g. re-formation of the consortia, objectives of the project, must be communicated to EMIDA CO with detailed justification and will only be allowed by the FG under exceptional circumstances.

Pre-proposals that are not complete or contrary to any other formal requirements will not be considered in the evaluation process. Pre-proposals including a Research Partner who is not eligible under national regulations will be rejected. If more than 25% of the funding organisations involved dismiss a pre-proposal, it will be rejected. In case, such a pre-proposal is extraordinary relevant to the remaining funders, exceptions from this rule will be treated on a case by case basis. When a pre-proposal is not supported by the funding organisation of the project coordinator, it will be rejected.

After closure of call, the EMIDA CO and respective national funding organisations will complete a check for eligibility and relevance of proposals to the aims of call. The national call funding organisations will check the proposals against their respective national regulations and funding conditions, and the EMIDA CO will then contact the Research Consortium Coordinator to report on the outcome. The Research Consortium Coordinators of those project pre-proposals, which have passed the eligibility check, will be invited to submit full proposals. Brief feedback on the reason of rejection will be given to unsuccessful applicants.

## 4.3 Full-Proposal Submission

**Details for submitting the full proposal will arrive on the EMIDA website (www.submission-emida-era.net) in good time.**

# 5 Selection Process

The objective of the selection process is to select and fund those transnational research proposals which meet the individual specifications of the respective activity line or specific topic , and are of scientific excellence and. Proposals will be evaluated according to the criteria detailed in chapter 5.3. All submitted proposals must be treated confidentially by the EMIDA Partners and their appointed evaluation experts.

## 5.1 Eligibility Check of Pre-Proposals

The eligibility check is a two step procedure.

First pre-proposals will be checked to meet EMIDA eligibility criteria as outlined in chapter 3.1. Meeting the application regulations and eligibility criteria is mandatory. Pre-proposals that do not meet criteria will not be considered for funding.

Secondly pre-proposals fitting the formal EMIDA eligibility criteria will be sent to the responsible national funding organisations for national eligibility check. This national check will confirm that the pre-proposal meets the organisational eligibility criteria as listed in ANNEX 5 and is therefore be qualified for funding in the second EMIDA call. Pre-proposals which include costs that exceed the maximum amount allocated by any national funding organisation will be denied. Applicants may ask their national contact points as listed in ANNEX 3 for any maximum amounts allocated to projects. Consortia, whose pre-proposals meet the eligibility criteria, will be invited to submit a full proposal.

## 5.2 Evaluation of Full Proposals

Full proposals will be forwarded to an Expert Evaluation Panel (EEP) to assess the quality of the scientific content. The EEP is composed of eight sub-panels (one for each activity line), each consisting of three (3) independent international scientific experts in the research field convert by the activity line. Experts will be nominated and agreed upon by the FG. Potential conflicts of interest will be considered.

The assessment of proposals will be confidential. The EEPs will score the proposals based on the evaluation criteria (scoring: 1-5, whereas 1 is the lowest and 5 is the highest rating), providing detailed comments, an overall assessment of scientific merit, and a funding recommendation. A written, anonymous, evaluation report will be sent to the consortium coordinator.

## 5.3 Evaluation Criteria

The assessment of proposals will be undertaken by the EEP on the basis of scientific excellence and the evaluation criteria as specified below:

1. **Relevance of the project** (How well does the research project address the scientific objectives, described in the announcement of the call, including any specifications made by the funders?)
2. **Scientific originality & excellence** (Does the project present a sound and original concept that promises progress beyond the state-of-the-art? Are the objectives realistic, and are the scientific and technological methodology and the work plan convincing?)

3. **Excellence of the partners** (Are the expertises of the partners sufficient for the implementation of the project considering their previous work in the field of the project?)
4. **Quality of the consortium** (Is the partnership well balanced and is the distribution of tasks between the partners appropriate? Is the contribution of each partner (including industrial partners, if any) complementary?)
5. **Quality and efficiency of management** (Does the proposal present an appropriate management structure, including organisation and coordination?)
6. **Justification of resources** (Are the resources requested (staff, budget, equipment) appropriately allocated and justified?)
7. **Knowledge transfer and implementation/consolidation** (Does the project deploy targeted activities for transfer, implementation or consolidation of the knowledge generated? Are these activities sufficient to achieve transfer and implementation/consolidation?)
8. **Potential impact** (How high do you estimate the chances that the research project will have an impact on animal health and welfare, public health and/or livestock industries, including industrial applications? How important would this impact be?)
9. **Ethical issues** (Does the proposal contravene fundamental ethical principles?)

The **weighting** of the criteria will be as follows:

- Relevance of the project with factor "2"
- Scientific originality & excellence with factor "1.5"
- All others with factor "1"

The evaluators' comments will address each item of the above list of criteria.

Each proposal will be assessed by three (3) experts of one (1) of the EEP sub-panels who will complete the evaluation form including the written report, anonymous for applicants, in order to be sent to the proposal coordinator.

## 5.4 Project Selection by National Funding Organisations

On the list of projects determined on the evaluation meeting, the FG will decide on funding based on the recommendations of the EEP and their own assessment of bids. Proposals addressing an activity line in the broad sense or specific topic within that activity line are in direct competition.

After the approval of the Final Recommendation List by respective national funding organisations, the EMIDA CO will send notification letters on behalf of the FG to all Research Consortium Coordinators to inform them of the outcome of the final funding decision. Each national funding organisation will enter the contracting process with its national researchers on the approved proposals.

## 5.5 Ethics

Anybody intending to work with quarantine organisms may do so under an appropriate national licence.

Work involving the use of animals will be carried out under the appropriate authorisation taking local ethical requirements into account. Any proposal, which appears to the FG or EEP to contravene fundamental ethical principles, shall not be selected, and may be excluded from the evaluation and selection procedure at any time. Judgement of the significance of ethical issues will be made by the FG using the criteria published by the Commission in its guidelines for the 7$^{th}$ Framework Programme

(http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.topic&id=370).

# 6 Call Funding

## 6.1 Funding Mode

Funding will be available through national funding organisations providing contributions in line with national funding regulations to national selected partners. National specifications are provided in ANNEX 4 and ANNEX 5.

## 6.2 Payment Conditions

For any commissioned projects, all national funding organisations will make payments according to their own national regulations.

# 7 Contracts

## 7.1 Terms of Participation

The national funding for the second EMIDA call is offered under the coordination of the FP7 ERA-Net EMIDA, "Coordination of European Research on Emerging and Major Infectious Diseases of Livestock". Research participants are required to recognise the coordinating role of EMIDA throughout the duration of funded research projects until approval of the final report. Research Consortia may be asked for feedback on processes in order to help refine these for future use.

## 7.2 Contractual Relationships

Regarding the call and the funding, EMIDA ERA-NET has a coordinative, not a funding role. Contracts and funding procedures remain the full responsibility of the national research funding organisations.

Each project includes several consortium members named Research Partners, one which is the Research Consortium Coordinator. The Research partners in a funded research project will have a contractual relationship with their national funding organisation.

Due to the fragmented nature of the funding it is necessary for each national funding organisation to enter into a contract with the relevant research partner, but also to ensure that these contracts are synchronised both in time and content, so the Research Consortium can deliver transnational outputs. The national funding organisations have to make sure that common EMIDA conditions are met (e.g. common commencement dates of (particular) projects, reporting requirements).

## 7.3 Funding Contracts

For the whole duration of the contract it is the responsibility of the Research Consortium Coordinator to inform the EMIDA CO of any changes which might affect the implementation of the project (work plan, consortium modification, contact details, etc). The Research Partners have to inform their national funding organisation of any changes affecting the national contract.

If a change occurs in a Research Consortium, any problem related to it has to be solved by the consortium (in line with any Consortium Agreement). The EMIDA CO must be kept informed.

Any changes to the work plan must be issued, even minor ones, and will need to be authorised by the FG before amendment to the contract by the national funding organisation.

## 7.4 Research Consortium Agreement

The consortia selected for funding are adviced to sign a Consortium Agreement, in order to manage the delivery of the project activities, finances, and intellectual property rights (IPR) and to avoid disputes which might be detrimental to the completion of the project.

If Research Consortia attempt a Consortium Agreement, the following must be considered.

It will be the responsibility of the Research Consortium Coordinators to draw up a Consortium Agreement suitable to their own group. The Consortium Agreement will normally be under the law

and legal system of the country of the Research Consortium Coordinator. The purpose of this document will be:

- to underpin the Research Partners' collaboration and provide the Research Partners with mutual assurance on project management structures and procedures, and their rights and obligations towards one another;
- to assure EMIDA ERA-NET that the Research Consortium has a satisfactory decision making capability and is able to work together in a synergistic manner.

For additional information on Consortium Agreements, please see uploaded document on www.submission-emida-era.net "Guidelines for preparing of a Consortium Agreement".

## 7.5 Ownership of Intellectual Property Rights and Use of Access to Results

Results and new Intellectual Property Rights (IPR) resulting from projects funded through the second EMIDA call will be owned by the Research Partners according to the regulations in their consortium agreement and if not conflicting with the respective national regulations.

Researchers are encouraged to actively exploit the results of the research project and make them available for use, whether for commercial gain or not, in order for public benefit to be obtained from the knowledge created.

All EMIDA partners shall have the right to use documents, information and results submitted by the Research Partners and/or to use the information and results for their own purposes, **provided that the owner's rights are kept** and taking care to specify their provenance.

## 7.6 Commencement of Projects

A project can commence as soon as the EMIDA CO has been informed by the Research Consortium Coordinator of the conclusion of the national contracts. Once the national contract comes into effect, eligible national costs may be claimed as per national procedures. In the interim period, researchers may commence work on the project at their own risk and costs.

## 7.7 Progress Monitoring, Reporting Requirements, and Approval of Deliverables

There will be annually monitoring procedures mandatory for all applicants involved in the funded projects, which will be independent of other specific national requirements. Additionally there will be a final report at the end of the project, which has to be delivered within four month after project end. Submission of written reports and deliverables will be online via the EMIDA ERA-Net submission server (www.submission-emida-era.net). The relevant national funding organisations will be responsible for evaluation of reports and deliverables. The project deliverables shall only be deemed approved when the EMIDA CO confirms approval to the Research Consortium Coordinator, or (if modifications are required) confirms to the Research Consortium Coordinator approval of the modified version of any deliverable.

Research Consortium Coordinators must report on the project as a whole to EMIDA. Written reports may be uploaded to www.submission-emida-era.net or sent electronically to the EMIDA CO within one month after each year of the project and within four (4) months after completion of the project

(respective report forms will be provided at www.submission-emida-era.net). Project reports must be produced in English, and may be produced in other languages at the Research Partners' discretion and costs. The Research Partners are jointly responsible for delivery of the work, and the FG will only accept reports delivered by the Research Consortium Coordinator on behalf of the consortium.

Where required, each participant must report progress on its own component of the work to the national funding organisations in line with national contractual obligations. This also applies to financial reports.

## 7.8 Dissemination Requirements

The Research Partners shall acknowledge EMIDA and the individual national funding organisations in any documents that are produced (in written, oral or electronic form) within the research project. EMIDA ERA-NET logo can be inquired at EMIDA CO.

# ANNEX 1: Detailed Description of Topics

Activity lines address broader research areas while subtopics particularly focus on more specific research. Funders may ask for proposals on the level of activity lines and/or subtopics. Project consortia are invited to apply accordingly.

**Activity line A: Ecology and animal health – diseases transmitted by arthropods (epidemiology, vector competence, early warning and surveillance systems, diagnostics, vaccines, vaccination strategies)**

Risk assessment, early warning, early identification, surveillance, prevention and control of endemic, re-emerging and emerging arthropod borne diseases require an integrated tool kit of cost efficient diagnostic tests, introduction and spread models, surveillance systems, as well as preventive strategies and control methods.
Research proposals should be aimed at providing knowledge and information that enhances the development of a fully integrated package of diagnostic tests, surveillance systems, risk assessment models, spread models, preventive strategies and control methods for managing important vector borne diseases. Collaborative proposals are invited that address one or more of the following topics:

- sensitive and specific diagnostic tests for surveillance
- risk mapping and early warning models based on trade, travel, environmental, meteorological, vector competence and other parameters
- risk based surveillance systems
- development of operational control methods including new vaccines
- development of spread models able to develop and test prevention and control strategies
- transmission mechanisms (from cell to cell, from tissue to tissue, from vector to host, from host to vector, and from population to population)
- trans-national sharing of the relevant data considering timely identification, communication and response

**Activity line A will be funded by:**
**BE, CH, DE, DK, ES, FR, GR, NO, SE, UK**

**A1: Tick borne diseases (Epidemiology, intervention strategies, pathogen characterisation, diagnostics, modelling, surveillance systems)**

Ticks are important vectors and natural reservoirs for bacterial and viral diseases in animals and man. An expansion of tick species into new areas and niches is observed resulting in increased numbers of infections.
Surveillance systems should be developed for ticks and the pathogens they carry. Ticks collected at relevant sites should be identified and assayed for the presence of a variety of bacterial and viral pathogens. Pathogens should be phylogenetically characterized. Epidemiological models and intervention strategies should be developed.

**Specific topic A1 will be funded by:**
**DE, DK, ES, IL, IT, NL**
**Please note that funders listed directly under activity line A may also fund this specific topic.**

**A2: Vector competence of arthropods in particular for important zoonotic pathogens (infection models with insects, vector mechanisms, transmission studies, risk assessment, West Nile Fever, Rift Valley fever, other arboviruses)**

With changing environments zoonotic arboviruses (AV) occupy new niches. Knowledge of the factors influencing vector competence and capacity of both exotic natural mosquitoes and of indigenous mosquitoes is crucial for risk assessments and control strategies. Proposals should consider one or more of the following:

- AV infection and transmission studies with natural and indigenous mosquito vectors under different environmental conditions
- development of molecular vector typing methods
- molecular studies on factors needed for AV to infect or replicate in mosquitoes
- novel techniques for detection of AV in mosquitoes
- monitoring the general AV prevalence in mosquitoes
- establishing a laboratory network for mosquitoes and their AV infections
- horizontal, vertical and seasonal mosquito distribution maps

**Specific topic A2 will be funded by:**
**BE, DE, DK, ES, IL, IT, UK**
**Please note that funders listed directly under activity line A may also fund this specific topic.**

**A3: African Horse Sickness (AHS) (vaccination, epidemiology, host virus interaction)**

The existence of an effective diagnostic and early warning system for the detection of possible introduction of African Horse Sickness in Europe coupled with the availability of serotype-specific vaccines are the key elements for any control measure.
Proposals are invited to develop an international network with the aim of:

- promoting the use of standardised and comparable diagnostic protocols for African Horse Sickness (AHS), including the development and validation of serological screening tests through the production of monoclonal antibodies
- developing and evaluating new polyvalent inactivated vaccines for the main AHS serotypes
- evaluating the vector competence of Obsoletus complex species through experimental infections
- building risk maps for Europe

**Specific topic A3 will be funded by:**
**BE, DK, ES, IE**
**Please note that funders listed directly under activity line A may also fund this specific topic.**

**Spec. topic A4: Blue Tongue Virus (vaccines, pathogenesis, epidemiology)**

Response to the recent incursions of different bluetongue serotypes, European Countries implemented programs to monitor virus circulation and vector distribution. These activities resulted in collecting and storing of a great variety of Culicoides

Proposals are invited to examine these collections by using the new molecular biological tools recently available for detecting bluetongue virus and for identifying Culicoides species and to relate the results climatic and environmental variables , thus producing information on the epidemiology of bluetongue occurring in Europe in the last decade and the role played by climate and the environment

**Specific topic A4 will be funded by:**
**BE, DK, ES, IE, IL**
**Please note that funders listed directly under activity line A may also fund this specific topic.**

**A5: Development of cost efficient and reliable surveillance systems for (exotic) arthropod borne diseases (targeted surveillance on time periods, geographical areas (incl. individual farms) and animals of high risk.)**

Globalization combined with climatic and environmental changes may lead to the introduction and spread of a range of exotic arthropod borne diseases in EU member states. Surveillance for numerous potential infective disease organisms may be too expensive to implement for common practice.
However, the risk of introduction, spread and establishment of arthropod borne diseases varies in time and space at herd and even animal level. Risk based and targeted surveillance systems may therefore be particular cost efficient for these infections. Proposals should address development of cost efficient and reliable risk based / targeted surveillance systems for (re-)emerging vector borne diseases and focus on general principles and methods applicable in all member states

**Specific topic A5 will be funded by:**
**BE, DE, DK, ES, IE, IL, NL**
**Please note that funders listed directly under activity line A may also fund this specific topic.**

**A6: Rapid in-vector multiplex diagnostics for pathogens identification and differentiation (flavivirus rapid testing, multiplex diagnostics, molecular diagnostics, microarrays)**

The circulation of different flavivirus in EU necessitates an optimised diagnostic platform able to distinguish them. Virus identification and host species determination represent a key element during the surveillance activities.
Aim of research is to improve knowledge on the species-specific role of vectors and vertebrate hosts in flavivirus epidemiology through the development and validation of a rapid molecular diagnostic platform, to be applied for vector testing, in order to:

- detect and differentiate the circulating flaviviruses through a multiple-target test
- identify the mosquitoes' species through molecular techniques
- identify the host preference of the mosquitoes' species through the identification of the blood meal

**Specific topic A6 will be funded by:**
**BE, CZ, DE, DK, ES, IE, IL, IT**

**Please note that funders listed directly under activity line A may also fund this specific topic.**

Activity lines address broader research areas while subtopics particularly focus on more specific research. Funders may ask for proposals on the level of activity lines and/or subtopics. Project consortia are invited to apply accordingly.

**Activity line B: Ecology and animal health – wildlife reservoirs (epidemiology, early warning and surveillance systems, biosecurity)**

Livestock health is, amongst others, dependent on the effect of changing farming/husbandry systems in a changing environment. Changing ecosystems, due to climate change and land-use change for instance, are expected to affect wildlife populations. Wildlife may be a reservoir for several pathogens, infectious for production animals and/or humans. Therefore, there is a need to have access to appropriate knowledge on wildlife-borne diseases to assess the need for and support the design of surveillance systems and preventive or control measures.
To obtain information on changes in the prevalence of wildlife-borne diseases in production animals (including zoonoses) and its relevance in Europe, underpinning knowledge should be developed concerning:

- relevant pathogens, their reservoirs and their intermediate and spillover hosts
- pathogen detection methods and epidemiology
- early warning and surveillance systems
- measurable risk factors and (GIS-) risk mapping with predictive power (trend analysis) on a geographical scale

**Activity line B will be funded by:**
**CH, DE, DK, ES, FR, NO, SE**

**B1: Avian Influenza in wildlife and environment (Epidemiology, modeling, early warning, biosecurity)**

Wild birds, incl. water birds, are considered the reservoir of all influenza A viruses. The persistence of infective AIV outside the host in the environment plays a crucial role for transfer of virus.
Research proposals should be aimed at providing improved knowledge for developing epidemiological models, early warning systems and improved biosecurity. In particular improved knowledge is needed on steps and mechanisms in the transfer and decay of infective AIV outside the host in the production environment and in natural bird habitats, as well as on active reduction and elimination of infective AIV in relevant environments (soil, manure, sediments, and natural water).

**Specific topic B1 will be funded by:**
**BE, DK, ES, IE, IL**
**Please note that funders listed directly under activity line B may also fund this specific topic.**

**B2: Wild boar, a reservoir for African swine fever? (ASF, pathogenesis and transmission in wild boar, early warning)**

In the EU the wild boar population varies in density but is generally increasing. ASF epidemics have been reported in wild boars suggesting their possible role as reservoir of ASFV. Disease control in wildlife is difficult due to various ecological factors.

Research on behavior of ASFV in wild boars is needed to verify the possibility of development of chronic forms of disease generating carriers, and thus having a potential role in the development of endemicity. Epidemiological studies should be carried out to determine the role of different parameters (size, density and dynamic of population, lethality of infection, effect of hunting activity, etc) in the decline of the infection or promoting the evolution of an endemic situation, and to conceive control measures.

**Specific topic B2 will be funded by:**
**BE, ES, IL**
**Please note that funders listed directly under activity line B may also fund this specific topic.**

**B3: Development of risk based and cost efficient monitoring and surveillance systems for rodent borne diseases (Epidemiology, early warning, surveillance systems, invasive species)**

Rodents can harbor or function as reservoir for a plethora of pathogens that can be harmful to human or animal health. Full understanding of the epidemiology of rodent borne diseases cannot be achieved without robust data on the occurrence of pathogens, both spatially and temporally, in rodent reservoirs.
The focus of attention for rodent borne diseases has mostly been directed at incidental hosts rather than the reservoir itself. For a full-fledged understanding of epidemiology of major rodent borne diseases, paramount for the development of early warning systems (including recognition of the introduction of species thus far unknown), the following topics need to be addressed:

- knowledge of the distribution of pathogens in rodent reservoirs (on endemic and trans-boundary scale)
- knowledge of the composition of rodent populations
- trans-boundary surveillance system for the benefit of early warning systems

**Specific topic B3 will be funded by:**
**DK, ES, NL**
**Please note that funders listed directly under activity line B may also fund this specific topic.**

**B4: Disease surveillance in combination with monitoring wildlife abundance and ecology (Wildlife population density estimation, pathogen distribution, range of host species, epidemiology, development of European wildlife diseases network)**

Wildlife can be a reservoir for diseases which pose a direct risk for humans (rabies, echinococcosis) or may endanger livestock (bluetongue, paratuberculosis). Monitoring is challenging as population sizes are often unknown and random sampling is difficult.
Harmonised methods for estimating population densities and sampling of different wildlife species are required. A European wildlife disease network is to be set up to establish a dynamic system of monitoring the pathogen distribution of selected wildlife pathogen with impact on human or animal health based on standard criteria for veterinary public health impact of pathogens (bacteria, parasites, viruses and unconventional agents) and their respective host species.

**Specific topic B4 will be funded by:**
**CZ, DE, DK, ES, IL, IT, LT, UK**
**Please note that funders listed directly under activity line B may also fund this specific topic.**

Activity lines address broader research areas while subtopics particularly focus on more specific research. Funders may ask for proposals on the level of activity lines and/or subtopics. Project consortia are invited to apply accordingly.

**Activity line C: Zoonoses (re)-emerging threats, epidemiology, early warning and surveillance systems, intervention strategies)**

(Re-) emerging zoonoses can have enormous effects on human health and on society at large including the livestock sector(s). Serious economic consequences may result from control and eradication measures. Therefore, prevention and timely and effective response after disease introduction is of utmost importance. Prevention and control starts with monitoring animal reservoirs and development of efficacious vaccines.
The final goal is the development of cost-effective prevention and control strategies.
Proposals are invited to address one or more of the following:

- development of cost-effective early warning systems and (epidemio-)surveillance strategies for (re)- emerging zoonotic infections
- epidemiologic studies to improve knowledge of spread of zoonotic diseases
- development / improvement of cost-effective, rapid, highly sensitive and specific diagnostic tools for zoonotic pathogens
- harmonization of the diagnostic methods and definition of common standards for their definition
- trans-national/trans-continental data and information sharing
- cross-disciplinary approaches to understand the crucial factors needed for zoonotic pathogens to cross species barriers thereby setting the basis for the establishment of new control strategies
- cost-effective prevention and control strategies, e.g. development and implementation of vaccination-, bio security,- and/or other management procedures

**Activity line C will be funded by:**
**CH, CZ, DE, DK, FI, FR, GR, IT, LT, SE, UK**

**C1: Control strategies for Campylobacter in poultry (Intervention strategies, Campylobacteriosis, biosecurity measures, molecular epidemiology, survival and spread, surveillance systems)**

Campylobacteriosis is the most common bacterial gastrointestinal disease in the EU. An EFSA Scientific Opinion considered that 'poultry is a major, if not the largest, single source of human infection' (http://www.efsa.europa.eu/en/scdocs/scdoc/1437.htm). Research is needed to provide a greater understanding of campylobacter behaviour (including mechanisms of pathogenicity), how they survive, are transmitted, and infect poultry (understanding host-pathogen interactions). Such data will underpin research into novel interventions. Data on effectiveness of biosecurity, and other known or novel preventative strategies, are also required to support implementation of evidence-based control measures. Collaboration with poultry producers is anticipated.

**Specific topic C1 will be funded by:**
**AT, DK, FI, GR, IE, IL, IT, LT, UK**
**Please note that funders listed directly under activity line C may also fund this specific topic.**

**C2: Development of vaccines for salmonellosis in pigs (Vaccination, salmonellosis)**

A National Control Plan (NCP) for Salmonella in pigs is due to be implemented by 2013 by all EU Member States. It is likely that a number of interventions will be required to reduce Salmonella in pigs, and an effective vaccine could be key in achieving this.
Research is needed on the development of a novel vaccine to reduce pig gut colonisation through to slaughter, in order to have the greatest impact on public health. The vaccine should target S. Typhimurium, but ideally provide protection across multiple Salmonella serovars. Other factors to consider are: vaccine safety; timing of use; practical use on-farm; regulatory requirements; differentiating vaccinated and infected pigs; and, likely cost of the final product. Collaboration / co-funding with vaccine companies is anticipated.

**Specific topic C2 will be funded by:**
**CZ, DK, GR, IE, IT, UK**
**Please note that funders listed directly under activity line C may also fund this specific topic.**

**C3: Specific emerging zoonoses**

In a first prioritisation of emerging zoonoses according to their threat for The Netherlands, i.e. likelihood of emergence, severity of disease in humans and costs of control, Japanese Encephalitis (JEV), Anaplasma Phagocytophilum and Crimean Congo Haemorrhagic Fever (CCHF) ranked high. Research should address specific knowledge gaps for the three diseases:

- for JEV: scenario studies into the risk of emergence; inclusion in mosquito surveillance systems and in bird (waterfowl) monitoring; test development for presence of the virus in pigs
- for Anaplasma: development of diagnostic test to enable inclusion in tick monitoring
- for CCHF: vector competence studies of ticks

**Specific topic C3 will be funded by:**
**DE, IT, NL**
**Please note that funders listed directly under activity line C may also fund this specific topic.**

**C4: Q fever (Coxiella burnetii, diagnosis, diagnostic tools, pathogenesis and control)**

Q fever is a disease being transmitted from its natural hosts (cattle, sheep and goats) to humans via aerosols. Infection may result in seroconversion, an incapacitating flu-like disease with acute pneumonia or chronic course with life-threatening sequalae.
Aim of the call topic is to elucidate the role of the environment and of arthropods as reservoirs for animal infection, to unambiguously identify the natural (a)vertebrate host population(s), to clarify the role of air- and vector-borne routes of infection, to improve the means of serological and molecular diagnosis, to develop sensitive molecular typing tools at strain level, to develop animal models of infection to study pathogenesis, to develop meaningful strategies for control and spread of infection.

**Specific topic C4 will be funded by:**
**AT, BE, DE, ES, IE, IL, IT**
**Please note that funders listed directly under activity line C may also fund this specific topic.**

**C5: West Nile Virus (Diagnostics, modeling, surveillance systems, strain diversity, vector competence, vaccines)**

During the last two decades, the arthropod borne West Nile virus has been introduced and even established itself in several European countries. Thus, it is important to generate information on the characteristics, like chance of introduction, spread and persistence, and on effective prevention measures of this emerging pathogen in different ecosystems/habitats in Europe.
Risk mapping or other kind of modelling to identify and predict introduction and spread is required to enable vigilant preparedness. This implies development of robust diagnostic tests, surveillance systems, and trans-national data sharing. Identification of circulating strains is important, next to factors influencing the spread of the pathogen, like habitat requirements, and competence of endemic vectors. This will support the development of preventive measures, which also could take into account opportunities for vaccine development.

**Specific topic C5 will be funded by:**
**AT, BE, DE, DK, ES, GR, IE, IL, IT, NL**
**Please note that funders listed directly under activity line C may also fund this specific topic.**

**C6: Re-emerging cystic echinococcosis (Epidemiology, surveillance, strain typing, genotyping)**

While alveolar echinococcosis (AE) caused by Echinococcus multilocularis has received the interest it earns in Europe, cystic echinococcosis (CE) caused by genotypes of E. granulosus and other Echinococcus spp. has been (re)emerging with less attention.
The research topic aims at describing the epidemiology of CE caused by the re-emerging E. granulosus strains such as the "sheep strain" E. granulosus G1 e.g. in Wales and Bulgaria, the "pig strain" G7 in eastern Europe and the "cervid strains" G8 and G10 in northern Europe, and any other strain identified by collection and genotyping of material from wildlife, domestic animals or human beings, thus enabling a synthesis of the current CE situation, the causative agents and the relevant host species.

**Specific topic C6 will be funded by:**
**DK, FI, GR, IE, IL, IT**
**Please note that funders listed directly under activity line C may also fund this specific topic.**

**C7: Escape variants of highly pathogenic zoonotic agents (Emerging new variants of viruses, genetic drift and shift, immune escape**

Genetic modifications driven by natural selection and realized by recombination, genetic drift and shift, can evolve new or emerging virulence traits and result in large-scale transmission and concomitant alteration of pathogenicity of zoonotic agents.
Aim of the call is to foster cross-disciplinary research on pathogenicity, infectivity and transmissibility of highly pathogenic zoonotic agents.
Proposals are invited which address one or more of the following:

- to analyse variants of pathogenic agents with increased invasiveness or enhanced ability to spread
- to elucidate host-pathogen interactions which promote immune escape
- to develop methods to predict severity of disease thereby providing principles for the development of novel vaccines and anti-pathogenic compounds and innovative treatment schemes

**Specific topic C7 will be funded by:**
**DE, ES, FI, IE, IL**
**Please note that funders listed directly under activity line C may also fund this specific topic.**

**C8: Prioritisation of zoonoses (based on e.g. impact, frequency of occurrence, economy of control strategies**

Zoonoses are a significant burden for human and veterinary public health, livestock production, and the economy. For prioritisation, reliable assessment of the social and economic impact of zoonotic agents on humans, animals and society is indispensable. Research is invited:

- to cover data gaps regarding the public health impact of zoonotic pathogens
- to support prioritisation decisions by combining epidemiological information on disease incidence, on the attribution of zoonoses, on health outcomes of diseases, and the respective economic impacts
- to foster efficient collaborations between basic research and the medical and veterinary professions concerning zoonoses
- to develop efficient generic surveillance systems, which monitor for more than one pathogen at a time

**Specific topic C8 will be funded by:**
**DE, DK, FI, IE, IL**
**Please note that funders listed directly under activity line C may also fund this specific topic.**

Activity lines address broader research areas while subtopics particularly focus on more specific research. Funders may ask for proposals on the level of activity lines and/or subtopics. Project consortia are invited to apply accordingly.

**Activity line D: Antimicrobials and anthelmintics: resistance and alternatives for use (prevalence of resistance, surveillance, interventions, alternatives (e.g. herd management, alternative medication, vaccination, feed additives)**

Animal Health has been enormously enhanced by the therapeutic use of antimicrobials in bacterial diseases and the impact of parasitic diseases has been greatly reduced by the use of anthelminthics. The use and to a certain extent, the misuse (or non-prudent use) of antimicrobials in livestock in the last 50 years, has also caused the emergence and spread of antimicrobial resistance in bacteria of livestock origin, either commensal, animal or zoonotic pathogens. Nowadays antimicrobial resistance in bacteria of animal origin affects animal and human health and results in higher therapeutic costs and loss of productivity in primary productions. Anthelmintic resistance affects disease burden, therapeutic costs, welfare and productivity in animal production in a similar way. In humans, resistant and multi-resistant zoonotic bacteria have an impact in terms of increased burden of disease and cost of illness, especially as a consequence of the transfer of resistances along the food chain. Collaborative proposals are invited that address one or more of the following topics:

- development of cost-effective, sensitive, specific and fast detection (both phenotypic and genotypic) systems contributing to enhancement of early warning of emergence or further spread of antimicrobial resistance and multiresistance to valuable classes of antimicrobials used for animal therapy and to Critically Important Antimicrobials for human therapy in commensal bacteria, livestock and zoonotic pathogens
- improvement of the quality, accuracy, availability and timeliness of data from bacteria of animal origin, both within countries and across Member State borders, contributing to enhancement of early warning and trends of antimicrobial resistance in animal primary productions, especially for valuable antimicrobial classes in animal therapy and for Critically Important Antimicrobials in human therapy
- study of the risk factors associated with the emergence and spread of antimicrobial resistance and multiresistance towards valuable antimicrobial classes for animal therapy or critically important antimicrobials for human therapy in primary productions, in view of possible interventions
- development of innovative (or improvement of existing) alternatives for the use of antimicrobials and anthelmintics in animal productions that will contribute to an enhancement of attitudes and practices of farmers and veterinarians towards a more responsible and prudent use in primary productions (e.g. herd management, alternative medication, vaccination, feed additives)

**Activity line D will be funded by:**
**CH, CZ, DE, DK, FR, GR, IT, LT, NO, SE**

**D1: MRSA (Intervention strategies, genotypic surveillance)**

Methicillin resistant S. aureus (MRSA) have emerged in food animals, mainly swine, in many countries. MRSA constitutes a hazard for human health and there is a need to perform research enabling eradication or reduction of MRSA in primary production.
Proposals should address one or more of the following, with the focus on development of methods for use in eradication or control programmes:

- development of cost-effective, sensitive and fast pheno- and / or genotypic methods for detection, free-testing or prevalence determination of MRSA
- identification of important factors promoting the within or between herd spread or within herd prevalence of MRSA
- development and evaluation of eradication or control strategies against MRSA

**Specific topic D1 will be funded by:**
**BE, CZ, DE, DK, GR, IE, IT, NL**
**Please note that funders listed directly under activity line D may also fund this specific topic.**

**D2: ESBL's (prevalence, genotypic surveillance)**

ESBLs are considered a major risk of AMR in humans, and are frequently reported in animals/animal products. Although epidemiology in humans and animals does not fully overlap, identical genes and plasmids were found in isolates from animal and human origin.
To generate knowledge on:

- magnitude of risk by various animal species
- adequacy of current surveillance in animals and food products to establish the risk
- identification of mobile genetic elements associated with the spread of ESBL in animal populations
- possibility to quantify the risk attribution of animals to humans by comparison of molecular characteristics of ESBL genes, plasmids and isolates from animal and humans
- association between ESBL spread and the use of antimicrobials

**Specific topic D2 will be funded by:**
**BE, CZ, DK, IT, NL**
**Please note that funders listed directly under activity line D may also fund this specific topic.**

**D3: Anthelmintic resistance (herd management, alternative medication)**

Gastrointestinal parasitism is a major cause of poor health, welfare and productivity in ruminants. Control of PGE relies heavily on the use of anthelmintics and resistance has developed and is now quite widespread to two classes of these drugs.
Proposals are invited which address the development of tools for the detection of and treatment regimes for effective worm control while delaying the development of anthelmintic resistance.

**Specific topic D3 will be funded by:**
**DK, ES, GR, IE, IL**
**Please note that funders listed directly under activity line D may also fund this specific topic.**

**D4: Antimicrobial resistance of Campylobacter spp. along the food production chain and relationship to public health (Prevalence in animal species, food products and human; intervention measures)**

Campylobacter spp, one of the leading causes of bacterial food-borne disease, may be transferred from animals to humans via food. The increase in antimicrobial resistance in Campylobacter spp. is of concern.
The research should be focussed on:

- improving biological and/or epidemiological evidence on the resistant bacteria (including persistence, spread and prevalence) and the factors responsible for the development of resistant campylobacter in animal host in different production systems
- developing novel strategies to control the development of resistant bacteria and their spread

**Specific topic D4 will be funded by:**
**DK, GR, IE, IL, IT, LT**
**Please note that funders listed directly under activity line D may also fund this specific topic.**

**D5: Antibiotic use and intervention strategies to reduce their use in pig and dairy cattle (Reduced use of antibiotics, persuasion strategies)**

Various member states set up monitoring programmes in food producing animals to continuously estimate resistance evolution. However, follow-up of the usage of antimicrobials in the various animal populations and production systems is often lacking.
Projects should:

- develop monitoring strategies to correctly estimate antimicrobial use in a standardised way
- in a defined animal population, link data of antimicrobial resistance with drugs usage
- propose strategies to increase the awareness of field practitioners to correctly use the available antimicrobial drugs
- develop a dashboard including performance indicators and targets in order to observe the evolution in resistance, use and impact of intervention strategies

**Specific topic D5 will be funded by:**
**BE, DK, IE, IL**
**Please note that funders listed directly under activity line D may also fund this specific topic.**

**D6: Metagenomic analysis of changes in gut microflora of farm animals in a response to antibiotic therapy (metagenomics, microflora, antibiotic therapy, antibiotic resistance)**

In farm animals antibiotics are used to prevent diseases especially during critical times of the animal's life. The antibiotic therapy disturbs the balance of the micro-flora leaving more space and nutrition for the antibiotic resistance bacteria.
Metagenomics methods provide a detailed knowledge of the changes in the microbiome in response to various intervention strategies. These methods can be based on next generation sequencing or high throughput PCR systems.
Collaborative proposals are invited that address one or more of the following topics:

- metagenomic analysis of changes in gut microbiome in response to antibiotic therapy at different stages in farm animal's life
- monitoring of the development of antibiotic resistance in the microflora

**Specific topic D6 will be funded by:**
**CZ, DK, IE, IL, IT**
**Please note that funders listed directly under activity line D may also fund this specific topic.**

**D7: The capacity of feed/prebiotics to modulate the intestinal flora that inhibits growth of enteric pathogens (incl. zoonotic) (Feed, prebiotics, alternatives to antibiotics and anthelmintics, intestinal ecology, competitive exclusion)**

In the livestock industry there is a need for research on the use of alternatives to antibiotics to prevent common gastrointestinal diseases. These alternatives could be based on prebiotics or synbiotics involving the use of prebiotic and probiotic.
The feed/prebiotics should be investigated as alternatives to antibiotic and anthelmintics with respect to its protective and infection reducing properties against common gastrointestinal diseases in farm animals.
Collaborative proposals are invited that address one or more of the following topics:

- changes in the micro-flora in response to dietary intervention with prebiotics or synbiotics
- infection reducing properties of the dietary intervention with respect to common gastrointestinal diseases

**Specific topic D7 will be funded by:**
**DK, IL, LT**
**Please note that funders listed directly under activity line D may also fund this specific topic.**

**D8: Antibacterial vaccines (Vaccine development, vaccination strategy)**

One possibility to decrease incidence of bacterial infections in animals and avoid use of antibiotics is vaccination. Recent development in the understanding of host-pathogen interactions should enable construction of new marker vaccines for veterinary use enabling simple and large scale delivery, differentiation from field pathogens and combination with alternative feed additives.
The newly introduced vaccines must allow discrimination between vaccinated and infected animals. In addition, alternative vaccination strategies (e.g. aerosol vaccination in poultry against bacterial pathogens) should be included. The proposed strategies should be combined with alternative management and feeding regimes, involving feed additives of pro- or prebiotic nature.

**Specific topic D8 will be funded by:**
**CZ, DK, IE, IL, NL**
**Please note that funders listed directly under activity line D may also fund this specific topic.**

**D9: Phage therapy (Lytic phages, animal experiments)**

Treatment of bacterial infections with antimicrobial drugs gives rise to the selection of resistant bacteria, which may lead to treatment failure. Alternative strategies may eliminate the pathogen without selecting for resistance.
Projects should:

- select an animal bacterial infection that may serve as a model for phage therapy
- isolate and identify lytic bacteriophages for the corresponding pathogen
- study the in vitro activity of these phages or of their active components against the pathogen
- in animal experiments, demonstrate the clearing capacity of the phage treatment

**Specific topic D9 will be funded by:**
**BE, DK, IL**
**Please note that funders listed directly under activity line D may also fund this specific topic.**

Activity lines address broader research areas while subtopics particularly focus on more specific research. Funders may ask for proposals on the level of activity lines and/or subtopics. Project consortia are invited to apply accordingly.

**Activity line E: Production diseases – disease susceptibility (host–pathogen interaction, immunomodulation, opportunities for intervention)**

Not all of the infectious animal diseases are highly contagious with epidemic characteristics. Many diseases or syndromes evolved and progressed with the outcome conditioned by factors related to the host and its genetic profile, its immunological status (vaccinated or not, acquired immunocompetence) and to the capacity of the organism to properly react (normoreactivity). Understanding of the mechanisms of the interactions between these factors and the pathogen is considered essential to develop sustainable prevention and control strategies for animal diseases and zoonoses

Considering the complexity of the mechanisms which can lead to the development of latent or clinically evident diseases and syndromes in zootechnical animals, specific studies are needed to investigate the relationship existing between infectious agents and host-related factors, the pathogen characteristics and the host response, taking also into account the role of the environment in mediating such interactions. Projects in this area should generate knowledge on important aspects of the pathogenesis of diseases in domestic animals and ways to modify host susceptibility to pathogens. Studies on the use of immunomodulation in order to modify the adaptive immune response are also suggested.

**Activity line E will be funded by:**
**CH, CZ, DE, DK, FR, IT, SE, UK**

**E1: Characterization and development of gut microflora in poultry and its resistance to bacterial pathogens (gut colonisation, immune response, natural resistance to pathogens)**

Chickens for commercial production are hatched in a clean environment and unlike all other farm animals, will never come into contact with adult birds to become colonised by the healthy microflora of adults.

Colonisation of newly hatched chickens in commercial hatcheries is a matter of coincidence. Understanding of early events in the chicken gut, gut flora characterisation and description of immune system maturation should be equally addressed. Research should also aim at active modification of gut microbiota and gut immune system resulting in an increased resistance to pathogens.

**Specific topic E1 will be funded by:**
**CZ, DE, DK, GR, IL**
**Please note that funders listed directly under activity line E may also fund this specific topic.**

**E2: Respiratory pathogens of swine and their interaction with immune system of respiratory tract**

The respiratory diseases of swine are often multifactorial, involving a number of respiratory pathogens. Although the pathogenic mechanism of some of the pathogens is fairly well defined, the host response, including the immune response often remains unclear.
Research will aim at increasing the knowledge of the porcine immune system, its ability to respond to respiratory disease and on the mechanisms that the respiratory pathogens have developed to alter and evade the immune system. Acquired information will be used to develop new strategies and measures to reduce the impact of respiratory diseases in the swine industry.

**Specific topic E2 will be funded by:**
**CZ, DE, DK, ES, IE, IT**
**Please note that funders listed directly under activity line E may also fund this specific topic.**

**E3: Persistent infections in cattle (Innate immunity, mechanisms of immune tolerance)**

Persistence is an evolving condition due to the incapacity of the host defenses to eradicate the infection. In cattle, chronic infections cause economic losses and could be of public health concern when zoonotic pathogens are involved.
Research is needed to provide knowledge on the impact of paratuberculosis, Q fever, bovine tuberculosis, bovine viral diarrhoea, and other infections capable of evolving into chronic status and on interactions between host and pathogens that lead to chronicity and tolerance. Information can be used for developing new approaches (vaccines, therapies, immuno-modulators) and strategies to minimize the risk of persistence in animals, the health and economic consequences and the public health related risks.

**Specific topic E3 will be funded by:**
**CZ, DE, DK, IE, IL, IT**
**Please note that funders listed directly under activity line E may also fund this specific topic.**

**E4: TSE free goats (Molecular characterization and biological typing of strains, identification of resistance genes, challenge experiments)**

Genetic resistance to disease in livestock confers significant economic benefits to the farmer, government and consumer. Breeding for TSE resistance in sheep has been proven to reduce scrapie; in goats this strategy is the preferred choice of the EU. To control and eradicate goat TSEs, the current knowledge on the candidate PRNP alleles has to be completed and analysed in order to generate scientific arguments for solid and practical breeding policies applicable to various regional conditions. Breeding programmes to be developed must consider key elements related to the dissemination of potentially TSE protective polymorphisms. Data on adverse effects on production traits are to be monitored and reported.

**Specific topic E4 will be funded by:**
**ES, GR, IL, IT, NL, UK**
**Please note that funders listed directly under activity line E may also fund this specific topic.**

Activity lines address broader research areas while subtopics particularly focus on more specific research. Funders may ask for proposals on the level of activity lines and/or subtopics. Project consortia are invited to apply accordingly.

**Activity line F: Production diseases – epidemiology, diagnostics and vaccination (within and between herd transmissions, diagnosis, management strategy, biosecurity, vaccination)**

Disease, including multi-factorial syndromes, is a major constraint on livestock production. Its occurrence depends on virulence, host susceptibility, farming practices and the application of prophylactic, diagnostic and therapeutic tools, when available. Technological and methodological developments are needed for improved and sustainable control strategies.
Research is required for the development of disease control strategies to limit disease spread on to and within farm, including in organic production systems, through the generation of underpinning knowledge and technological advances, in one or more of the following areas:

- epidemiology, farmer behaviour, economic assessment and risk analysis
- development of diagnostic tests and strategies for the early detection and monitoring of disease, or disease causing agents, including subclinical conditions affecting production
- promotion of disease prevention/control through improved bio-security, including vaccination or other immunological intervention

**Activity line F will be funded by:**
**CH, CZ, DE, DK, FR, IT, SE, UK**

**F1: Farmer behavior and disease control (Attitude, management, biosecurity, economics)**

Tools are available for the prevention and control of many diseases at the farm level but are often not utilized. Understanding farmer attitude and how this can be influenced is essential to achieve the necessary behavioral changes to improve disease control and to prevent the introduction of diseases. Research is required to prevent disease introduction and improve control at the farm level through gaining a better understanding of the farmers' perspective and how behavioural change might be effected.

**Specific topic F1 will be funded by:**
**CZ, IE, IL, NL, UK**
**Please note that funders listed directly under activity line F may also fund this specific topic.**

**F2: Control of BVD in cattle herds (persistently infected calves, vaccination, and management).**

Infection with BVDV is endemic in cattle populations in most parts of the world. The key to BVDV control is to prevent fetal infections in early gestation i.e. to interfere with the process by which persistently infected individuals are generated. An outline of a general model for BVDV control is available today, with biosecurity, virus elimination and monitoring as three necessary consecutive elements, and with vaccination as an optional step. The control strategy is built upon an initial determination of the herd BVDV status, with activities aiming at preventing new infections in non-

infected herds in parallel with systematic removal of persistently infected animals (PI) from infected herds.
Novel pestiviruses, both from cattle and sheep (such as BVDV-3 and BDV-8), have emerged over the past few years. In the context of applying effective control and eradication policies, research is required to investigate how the emergence of such viral variants may affect our epidemiological understanding of these diseases so as to ensure the effectiveness of control tools and their strategic use.

**Specific topic F2 will be funded by:**
**BE, IE, IL, IT, UK**
**Please note that funders listed directly under activity line F may also fund this specific topic.**

**F3: Paratuberculosis in ruminants (Regional control strategies)**

The exact prevalence of paratuberculosis is under-estimated in domestic ruminants and unknown in farmed wild ruminant populations. Risks for spread of paraTBC are increasing often associated with new practices in farm and wild animal breeding and with waste management.
The aim of research will lie in implementation of currently existing molecular biology and other methods for direct detection of causal agent of paratuberculosis in clinically and sub-clinically infected animals. Examination of faeces and tissues of animals and environmental samples has to prove the prevalence of M. avium subsp. paratuberculosis in the herd. An important goal would be the identification of specific and sensitive antigens for skin testing, serology and/or T-cellular tests allowing for reliable detection of infection in individual animals. Based on the established prevalence of paratuberculosis in domestic and wild ruminants and the evaluation of key risk factors for the causal agent transmission, plans for regional control and/or certification strategies are expected.

**Specific topic F3 will be funded by:**
**BE, CZ, GR, IE, IL, IT**
**Please note that funders listed directly under activity line F may also fund this specific topic.**

**F4: Multifactor diseases in calves (Diagnosis, pathogenesis)**

Calves are exposed to a large microbiological and immunological challenge along with stress factors such as weaning and transport. Understanding the interactions between a range of pathogens will allow improved disease control and reduce production losses
Many pathogens have been studied in isolation; however the true nature of field conditions exposes animals to many pathogens. Research should focus on co-infection studies supporting disease modelling to improve the understanding of the interactions between viral, bacterial and/or parasites on disease pathogenesis and diagnosis. This should provide important data on impacts of co-infections and allow for identification of improved disease control strategies.

**Specific topic F4 will be funded by:**
**DE, DK, IL**
**Please note that funders listed directly under activity line F may also fund this specific topic.**

**F5: Improved diagnosis of mycobacterial infections (IFN-gamma test vs. antibody detection, identification of specific antigens, T-cell immunity, latency, concurrent disease)**

Mycobacterial infections of livestock have significant economic impacts and also pose a human health risk. Bovine TB testing is required by EU regulations while Johne's disease can have detrimental effects on production. Current diagnostic methods including direct detection of the presence of the causative organism and indirect detection through the presence of an immune response are viewed as insufficiently sensitive in cattle and other species.
Collaborative proposals are requested looking at one or more of the following issues.

- improvements to and development of the IFN-gamma test and of tests based on antibody detection
- identification and development of tests using specific antigens rather than tuberculin
- an improved understanding of T-cell immunity in mycobacterial diseases of livestock
- effect of latency of disease on diagnostics
- effect of concurrent disease (including paraTB) on current bovine tuberculosis diagnosis

**Specific topic F5 will be funded by:**
**BE, CZ, IE, IL, IT, UK**
**Please note that funders listed directly under activity line F may also fund this specific topic.**

**F6: Development of vaccines against pig respiratory bacterial diseases for intranasal application**

Many pathogens enter the body via the mucosa of the respiratory tract. Development of new vaccines for an intranasal application and techniques for such administration should bring a substantial benefit in prevention of respiratory diseases.
Aim of the topic is to learn more about the possibilities to induce local immunity on mucosa of the respiratory tract of pigs by intranasal application of vaccine. Particular knowledge needed includes information about ability of the immune system of respiratory tract to be activated in the early phase of lifeand penetration of colostrum-derived passive immunity onto mucosal surfaces. It is also important to know, how the vaccine should be applied and what kind of adjuvants should be used.

**Specific topic F6 will be funded by:**
**CZ, DK, IE, IL**
**Please note that funders listed directly under activity line F may also fund this specific topic.**

**F7: High-Throughput methods for pathogen identification and typing (High-throughput, (multiple pathogen) diagnostics, identification, subtyping)**

Infectious diseases in livestock are one of the major concerns for the primary industry. Assessment of freedom from disease and prompt detection of animal infections require the development of cost-effective, accurate and fast diagnostic tests. Research is required on the:

- development of sensitive, specific, fast, and low cost diagnostic tests for the detection of animal pathogens, including user-friendly tests to be used directly in the field

- development of multiple-pathogen detection systems with high-throughput capabilities
- development of fast and reliable strain typing and subtyping protocols, including direct detection-typing systems

**Specific topic F7 will be funded by:**
**BE, DK, GR, IE, IL, IT**
**Please note that funders listed directly under activity line F may also fund this specific topic.**

**F8: Brucella melitensis: biotyping and differential diagnostics (Strain typing, monoclonal/polyclonal antibodies)**

Occurrences of false-positive serological reactions are a major threat in the surveillance of animal brucellosis. Yersinia enterocolitica O: 9, Vibrio choleraeand Escherichia coli O157:H7 represent the most commonly serological cross-reacting bacteria.
Proposals are invited for the development of an international network with the aim of:

- promoting the identification and comparison of the surface proteome of Brucella melitensis field strains, and cross-reactive pathogens (Yersinia enterocolitica O: 9, Vibrio cholerae, Escherichia coli O157:H7)
- identification of Brucella melitensis immunogenic proteins recognised by host immune system
- production of recombinant Brucella melitensis immunogenic proteins for diagnostic tests and vaccines

**Specific topic F8 will be funded by:**
**BE, GR, IL, IT**
**Please note that funders listed directly under activity line F may also fund this specific topic.**

**F9: Oral fluids as alternative for serum samples (diagnostic tests, sampling protocol, epidemiology, field trials, pen side tests)**

Annually, substantial resources are spent on the collection of biological samples for diagnostic investigations. Small scale studies have shown that oral fluid can replace serum as sample material for the detection of specific antibodies and nucleic acids.
Research proposals should be aimed to validate the applicability of oral fluid as sample material as an alternative to serum samples for one or more purposes and animal species:

- comparisons of the level of antibodies against specific pathogens
- large scale validation of the suitability of oral fluid as sampling material for the diagnosis / surveillance of specific pathogens under field conditions
- examination and validation of suitable protocols for sampling, storage and transport of oral fluid samples

**Specific topic F9 will be funded by:**
**BE, DE, DK, IE, IL, IT**
**Please note that funders listed directly under activity line F may also fund this specific topic.**

Activity lines address broader research areas while subtopics particularly focus on more specific research. Funders may ask for proposals on the level of activity lines and/or subtopics. Project consortia are invited to apply accordingly.

**Activity line G: Diseases in Aquaculture (diagnostics, vaccines, zoonotic pathogens)**

Prevention and early warning of infectious diseases in aquaculture require cost-effective, sensitive, specific and fast diagnostic tests, effective vaccines and vaccination strategies and knowledge of important factors for disease introduction and spreading. Spread of, and product contamination by, zoonotic or AMR pathogens should be mitigated.
Collaborative proposals are invited that address one or more of the following areas:

- implementation of strategic vaccination as a tool for controlling and eradicating diseases in aquaculture (including improved technologies for vaccine immune stimulation and improved methods for assessing and monitoring vaccine efficacy)
- development of sensitive, specific, fast, and low cost diagnostic tests for detection of pathogens in aquaculture
- functional genomics of important pathogens in aquaculture for understanding pathogenicity mechanisms
- molecular epidemiology and spatio-temporal analysis to get knowledge on the most important factors for disease spread and disappearance in aquaculture
- spreading of, and product contamination by, zoonotic and/or antimicrobial resistant pathogens

**Activity line G will be funded by:**
**CZ, DE, DK, ES, FR, NO, SE**

**G1: Zoonotic bacterial diseases, e.g. Vibrio vulnificus, Mycobacterium marinum**

A number of serious fish pathogens are zoonotic. Fish production especially in warm and recirculated water poses a risk for farmers. Zoonotic bacteria also pose a risk in the food production chain. Contact zoonotic cases are underreported.
Prevention implies good information transfer between fish producers/processors, veterinarians, and medics. For risk analysis and prevention, integrated international (retrospective) monitoring of zoonotic cases in intensive aquaculture and hospital archives is needed, including virulence testing & antibiotic resistance of bacterial strains. This should result in insight into the size of the problem, a code of practice, and thereby (inter)national prevention programmes for zoonoses from aquaculture.

**Specific topic G1 will be funded by:**
**CZ, DK, GR, IL, IT, NL**
**Please note that funders listed directly under activity line G may also fund this specific topic.**

**G2: Koi herpes virus**

Common carp is one of the most important species in aquaculture worldwide. Since its emergence in the late 1990s, the highly infective koi herpes virus (KHV) has caused severe losses in wild and farmed carp stocks. KHV is listed as a notifiable disease.

Due to its recent discovery and distant relation to mammalian herpesviruses, basic knowledge on functional genomics of KHV is still limited. Identification and understanding of the multiple strategies of this large and complex DNA virus to evade the immune system and to persist in its host is essential for effective disease control management and vaccine development. This topic focuses on the viral mechanisms of infection and host-virus interaction during entry, replication and persistence.

**Specific topic G2 will be funded by:**
**CZ, DK, IL, NL**
**Please note that funders listed directly under activity line G may also fund this specific topic.**

**G3: Disease prophylaxis for bacterial, viral and parasitic infections (fish, bivalves, crustaceans, vaccines, adjuvant, immunostimulants, host pathogen interaction, oral/immersion vaccine, ontogeny, vaccination of juveniles)**

European aquacultured species comprise several phylogenetically distant species living under different environmental conditions. Especially juveniles are exposed to the risk of infections and thus should be protected by vaccines/immunostimulants.
Improved vaccines and immunostimulants are required for different live stages of European aquacultured fish and shellfish.
Research proposals should aim at the development of:

- cost-efficient oral and immersion vaccines/immunostimulants for major diseases of aquacultured species
- new vaccine adjuvants with fewer side effects
- traceable marker vaccines and diagnostic tools to distinguish infected from vaccinated animals (DIVA) and high throughput tools for the evaluation of the immune response during ontogeny

Finally protocols to best assess the duration of protective immunity under field conditions are also required.

**Specific topic G3 will be funded by:**
**DE, DK, ES, GR, IE, IT**
**Please note that funders listed directly under activity line G may also fund this specific topic.**

**G4: Antibiotic resistance and treatment efficacy (Transmission of resistance)**

In ornamental fish production antibiotics of critical importance to humans according to WHO definitions are commonly used. Control is lacking and the occurrence of resistance determinants of public health concern are described including transfer to humans.
The aim of the research proposals should be to quantify the prevalence of resistance traits of public health concern in ornamental fish such as Koi. Of particular concern is transferable fluoroquinolone and cefalosaporin resistance in fish pathogens with a zoonotic potential like Aeromonas, Vibrio and Enterobacteriaceae. Resistance genes and plasmids are to be genetically characterised.

**Specific topic G4 will be funded by:**
**DK, GR, IE, NL**
**Please note that funders listed directly under activity line G may also fund this specific topic.**

**G5: Diseases in aquaculture with water recirculation (Disease prevention and treatment strategies)**

Fish health and performance are directly related to microbiota in RAS (recirculation aquatic systems). Sustainable production of healthy fish in RAS requires a better understanding of microbial management such as the role of biofilters as a reservoir of pathogenic and/or antimicrobial resistant bacteria.
Research proposals are invited:

- to investigate the dynamics, composition and interactions of different microbial communities in RAS, including those in fish, in relation to RAS design and management
- to investigate the relation between characteristics and management of microbial communities and health and performance of fish
- to investigate the presence, survival and AMR of fish pathogenic bacteria in biological filters and the possibility of dissemination of resistance genes and pathogens from biological filters

**Specific topic G5 will be funded by:**
**CZ, DK, ES, GR, IL, NL**
**Please note that funders listed directly under activity line G may also fund this specific topic.**

**G6: Vaccines to viral diseases in fish, incl. stimulators of innate immunity in fish (Vaccines, plasmid DNA, delivery, adjuvant, immunostimulants)**

Prophylaxis of infectious diseases is crucial for a sustainable and environmentally compatible expansion of European aquaculture production. Viruses are among the most important pathogens, but no commercial vaccines are available for most viral diseases.
Research is required in the following fields:

- promising experimental DNA vaccines against important fish rhabdoviruses like VHSV and IHNV in salmonids and SVCV in carp are available but delivery methods allowing mass vaccination of small fish needs to be developed
- also, optimising in terms regulatory DNA elements (i.e. promoter) and molecular adjuvant and immunostimulants is required to obtain an optimal dose-response effect
- the ability of the viruses to develop resistance to, or escape from, the induced immunity must also be addressed

**Specific topic G6 will be funded by:**
**CZ, DK, ES, GR, IE, IL**
**Please note that funders listed directly under activity line G may also fund this specific topic.**

**G7: Virulence markers for fish pathogens (Diagnostics, virulence markers, typing assays)**

Many fish pathogens occur in virulent and non-virulent variants, including viral pathogens causing serious and notifiable fish diseases like VHS, KHV and ISA. This complicates diagnostics and disease monitoring. Genetic or antigen markers for virulence and related typing assays should be developed.
Topics to be addressed are:

- identification of virulence markers and traits of serious fish pathogens
- development of fast and reliable diagnostic methods for discrimination between virulent and non-virulent isolates (assessment of factors triggering increases in pathogen virulence, particularly when non virulent strains are present)

**Specific topic G7 will be funded by:**
**DK, ES, GR, IE, IL, UK**
**Please note that funders listed directly under activity line G may also fund this specific topic.**

Activity lines address broader research areas while subtopics particularly focus on more specific research. Funders may ask for proposals on the level of activity lines and/or subtopics. Project consortia are invited to apply accordingly.

**Activity line H: Epizootic diseases (Swine Fevers, AI, FMD, Tb)**

Epizootic diseases such as Foot-and-Mouth Disease, Avian influenza, Swine fevers, as well as Peste des petits ruminants continue to pose a threat for animal health, production and welfare. For the development of effective control tools including diagnostic tests, knowledge about disease dynamics and pathogenesis is of paramount importance.
Recent outbreaks of epizootic diseases such as Foot-and-Mouth Disease and African swine fever underline their impact on animal health, production, and trade. Despite tremendous control efforts, a constant risk of introduction into the EU cannot be negated. To optimise control strategies for epizootic diseases, improved understanding of underlying mechanisms is needed. This includes exploitation of genetic knowledge obtained by modern techniques like next generation sequencing. Research proposals should address host pathogen interactions, immune response and pathogenesis in the broader sense, including investigation of virulence and persistence factors. Tools should be developed for monitoring, prevention and control, especially through research on vaccines and diagnostics.

**Activity line H will be funded by:**
**BE, CH, CZ, DE, DK, FR, SE, UK**

**H1: Avian Influenza (diagnosis, control and prevention)**

Avian influenza is an epizootic animal disease with a high zoonotic potential and the capacity for pandemic infections. Therefore, research for improving diagnosis, control and prevention could have a major impact on both animal and human health.
To improve diagnosis, control and prevention of avian influenza (AI), the major aims of this research topic are to (i) attain a better understanding of the epidemiology of AI viruses (especially H7 and H5) in wild birds and the determinants that allow transmission to domestic birds and mammals, (ii) improve surveillance methods including multiplexed, species-independent detection and characterization of AI-specific antibodies, (iii) optimise the available preventive methods including vaccination.

**Specific topic H1 will be funded by:**
**BE, DE, DK, ES**
**Please note that funders listed directly under activity line H may also fund this specific topic.**

**H2: FMD, immune response to infection versus vaccination (Virus persistence, protection, tropism, host response)**

Economically foot-and-mouth disease remains one of the most important diseases of farm animals. Incursions of the virus into Europe (e.g. U.K. in 2001) and other disease free areas (e.g. Japan in 2000 and 2010) result in huge economic losses.

Current FMDV vaccines use chemically inactivated viruses and these induce relatively short-term protection against a limited spectrum of viruses and do not block long term virus persistence. There is a need to define the innate and acquired immune responses to these FMDV vaccines compared to those induced by FMDV infection within natural host animals. In addition, anti-FMDV responses to novel vaccine candidates based on systems that express FMDV capsid proteins within animals need to be determined.

**Specific topic H2 will be funded by:**
**BE, DK, ES, IE, IL**
**Please note that funders listed directly under activity line H may also fund this specific topic.**

**H3: CSF/ASF pathogenesis in domestic pigs and wild boar (Virus persistence, host-virus interaction, virulence, hemostaseology, immune response, cytokine environment, strain Spec. natural virus resistance)**

African and classical swine fevers are among the most important diseases of pigs, and the current disease situation puts the EU at constant risk of introduction. To optimize control strategies, improved understanding of the diseases is needed.
Both swine fevers share clinical and pathological signs as well as pathogenetical aspects in both domestic pigs and wild boar. The underlying mechanisms are still far from being fully understood. To improve understanding of disease dynamics and pathogenesis, and to provide a basis for new effective control tools, this research topic should address (i) virulence determinants, (ii) mechanisms of virus persistence in affected populations, and (iii) host virus interactions and immune response.

**Specific topic H3 will be funded by:**
**BE, DE, DK, ES, IE, IL, IT**
**Please note that funders listed directly under activity line H may also fund this specific topic.**

**H4: Molecular epidemiology of epizootic diseases using next generation sequencing technology (Next generation sequencing, molecular epidemiology, persistence of strains in populations, evolution of virus strains, phylogeny)**

Our knowledge of the dynamics of virus evolution and the interplay of different factors influencing is limited. Constant evolution helps viruses escape the host defence, alter their pathogenicity and host range, and may even result in them evading diagnostics.
Random introduction of mutations into the genome by the viral nucleic acid polymerase during genome replication is assumed to be a mechanism underlying the constant evolution, especially in RNA viruses. Using next generation ultra-deep sequencing, the complexity of the mixture of genome variants (quasispecies) found in virus isolates can be analysed. Alterations of the genome composition should be investigated both qualitatively and quantitatively to help the understanding of virus evolution and to enhance the application for the technology referred to, how the technology can be applied in an epidemiological context.

**Specific topic H4 will be funded by:**
**BE, CZ, DK, ES, IE, IL, IT**
**Please note that funders listed directly under activity line H may also fund this specific topic.**

# ANNEX 2: Funding Scheme by Country

| AT | BE | CH | CZ | DE | DK | ES | FI | FR | GR | IE | IL | IT | LT | NL | NO | SE | UK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C1 | A | A | A6 | A | A | A | C | A | A | A3 | A1 | A1 | B4 | A1 | A | A | A |
| C4 | A2 | B | B4 | A1 | A1 | A1 | C1 | B | C | A4 | A2 | A2 | C | A5 | B | B | A2 |
| C5 | A3 | C | C | A2 | A2 | A2 | C6 | C | C1 | A5 | A4 | A6 | C1 | B3 | D | C | B4 |
| | A4 | D | C2 | A5 | A3 | A3 | C7 | D | C2 | A6 | A5 | B4 | D | C3 | G | D | C |
| | A5 | E | D | A6 | A4 | A4 | C8 | E | C5 | B1 | A6 | C | D4 | C5 | | E | C1 |
| | A6 | F | D1 | B | A5 | A5 | | F | C6 | C1 | B1 | C1 | D7 | D1 | | F | C2 |
| | B1 | H | D2 | B4 | A6 | A6 | | G | D | C2 | B2 | C2 | | D2 | | G | E |
| | B2 | | D6 | C | B | B | | H | D1 | C4 | B4 | C3 | | D8 | | H | E4 |
| | C4 | | D8 | C3 | B1 | B1 | | | D3 | C5 | C1 | C4 | | E4 | | | F |
| | C5 | | E | C4 | B3 | B2 | | | D4 | C6 | C4 | C5 | | F1 | | | F1 |
| | D1 | | E1 | C5 | B4 | B3 | | | E1 | C7 | C5 | C6 | | G1 | | | F2 |
| | D2 | | E2 | C7 | C | B4 | | | E4 | C8 | C6 | D | | G2 | | | F5 |
| | D5 | | E3 | C8 | C1 | C4 | | | F3 | D1 | C7 | D1 | | G4 | | | G7 |
| | D9 | | F | D | C2 | C5 | | | F7 | D3 | C8 | D2 | | G5 | | | H |
| | F2 | | F1 | D1 | C5 | C7 | | | F8 | D4 | D3 | D4 | | | | | |
| | F3 | | F3 | E | C6 | D3 | | | G1 | D5 | D4 | D6 | | | | | |
| | F5 | | F5 | E1 | C8 | E2 | | | G3 | D6 | D5 | E | | | | | |
| | F7 | | F6 | E2 | D | E4 | | | G4 | D8 | D6 | E2 | | | | | |
| | F8 | | G | E3 | D1 | G | | | G5 | E2 | D7 | E3 | | | | | |
| | F9 | | G1 | F | D2 | G3 | | | G6 | E3 | D8 | E4 | | | | | |
| | H | | G2 | F4 | D3 | G5 | | | G7 | F1 | D9 | F | | | | | |
| | H1 | | G5 | F9 | D4 | G6 | | | | F2 | E1 | F2 | | | | | |
| | H2 | | G6 | G | D5 | G7 | | | | F3 | E3 | F3 | | | | | |
| | H3 | | H | G3 | D6 | H1 | | | | F5 | E4 | F5 | | | | | |
| | H4 | | H4 | H | D7 | H2 | | | | F6 | F1 | F7 | | | | | |
| | | | | H1 | D8 | H3 | | | | F7 | F2 | F8 | | | | | |
| | | | | H3 | D9 | H4 | | | | F9 | F3 | F9 | | | | | |
| | | | | | E | | | | | G3 | F4 | G1 | | | | | |
| | | | | | E1 | | | | | G4 | F5 | G3 | | | | | |
| | | | | | E2 | | | | | G6 | F6 | H3 | | | | | |
| | | | | | E3 | | | | | G7 | F7 | H4 | | | | | |
| | | | | | F | | | | | H2 | F8 | | | | | | |
| | | | | | F4 | | | | | H3 | F9 | | | | | | |
| | | | | | F6 | | | | | H4 | G1 | | | | | | |
| | | | | | F7 | | | | | | G2 | | | | | | |
| | | | | | F9 | | | | | | G5 | | | | | | |
| | | | | | G | | | | | | G6 | | | | | | |
| | | | | | G1 | | | | | | G7 | | | | | | |
| | | | | | G2 | | | | | | H2 | | | | | | |
| | | | | | G3 | | | | | | H3 | | | | | | |
| | | | | | G4 | | | | | | H4 | | | | | | |
| | | | | | G5 | | | | | | | | | | | | |
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| | | | | | G7 | | | | | | | | | | | | |
| | | | | | H | | | | | | | | | | | | |
| | | | | | H1 | | | | | | | | | | | | |
| | | | | | H2 | | | | | | | | | | | | |
| | | | | | H3 | | | | | | | | | | | | |
| | | | | | H4 | | | | | | | | | | | | |

**Please note:** *[1]The **Italian Ministry of Agricultural Food and Forestry Policies** will fund activity lines D, F and the specific topic C2, whereas the **Italian Ministry of Health** will fund activity lines C, D, E, F, and the specific topics A1, A2, A6, B4, C1, C2, C3, C4, C5, C6, D1, D2, D4, D6, E2, E3, E4, F2, F3, F5, F7, F8, F9, G1, G3, H3 and H4.

*[2]The **German Federal Ministry of Food, Agriculture and Consumer Protection (BMELV)** will fund activity lines A, B, C, D, E, F, G, H and the specific topics A2, A5, B4, C3, C7, D1, E1, E2, E3, F4, F9, G3, H1 and H3 , whereas the **German Federal Ministry of Education & Research (BMBF)** will fund activity line A, C, D, F, and the specific topics A1, A2, A5, A6, C3, C4, C5, C7, C8, E2 and E3.

# ANNEX 3: EMIDA Call Funding Organisations

In total, the following EMIDA partners from 18 different countries will take part in funding the second EMIDA call with "distributed common pot" funding.

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| CZ | Ministry of Agriculture, Department of Research & Development | Milan Podsedníček | Milan.Podsednicek@mze.cz<br>+420 221812133 |
| DK | Ministry of Food, Agriculture & Fisheries | Lars Arne Jensen | larj@ferv.dk<br>+45 41 89 25 26 |
| FI | Ministry of Agriculture and Forestry | Katri Levonen | katri.levonen@mmm.fi<br>+358 916053437 |
| FR | The French National Research Agency (ANR) | Serawit Bruck | serawit.bruck@agencerecherche.fr<br>+33 173 54 81 70 |
| DE | Federal Ministry of Education & Research (BMBF) | Sabine Dues<br>Petra E. Schulte | s.dues@fz-juelich.de<br>+49 2461 61 9286<br>Petra.Schulte@fz-juelich.de<br>+49 2461 61 9031 |
| | Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) | Till Schneider<br>Elke Saggau | till.schneider@ble.de<br>+49 228 996845 3568<br>elke.saggau@ble.de<br>+49 228 99 6845 3930 |
| GR | Ministry of Ministry of Education, Lifelong Learning and Religious Affairs, General Secretariat for Research & Technology, International S&T Cooperation Directorate | Chrysoula Diamanti | cdiama@gsrt.gr<br>+30 210 74 58 190 |
| IE | Department of Agriculture, Fisheries & Food | Michael Gunn | Michael.Gunn@agriculture.gov.ie<br>+353 1 6157103 |
| IL | Ministry of Agriculture & rural development, veterinary services & animal health, Kimron Veterinary Institute | Boris Yacobson | Dir-kimron@moag.gov.il<br>+972 3 9681682 |
| IT | Ministry of Agricultural Food and Forestry Policies | Alberto Masci | a.masci@politicheagricole.gov.it<br>+39 06 46655085 |
| | Ministry of Health– Dep. for Veterinary Public Health, Nutrition & Food Safety | Marina Bagni | marina.bagni@sanita.it<br>+39 06 5994 6129 |
| LT | The Ministry of Agriculture of Lithuania | Antanas Sederevicius | Antanas@lva.lt<br>+370 37 363362 |
| NL | Ministry of Economic Affairs, Agriculture & Innovation | Albert Meijering | A.Meijering@minlnv.nl<br>+31 6 54232285 |
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| ES | INIA | Joan Calvera | calvera@inia.es<br>+34 91 34 76 801 |
| SE | The Swedish Research Council for Environment, Agricultural Sciences & Spatial Planning | Johanna Dernfalk | Johanna.dernfalk@formas.se<br>+46 8 775 4021 |
| CH | Swiss Federal Veterinary Office | Irene Schiller | Irene.schiller@bvet.admin.ch<br>+41 31 323 16 89 |
| UK | Biotechnology & Biological Sciences Research Council<br>Department for the Environment, Food & Rural Affairs | Sadhana Sharma | Sadhana.sharma@bbsrc.ac.uk<br>+44 1793 413 099 |

# ANNEX 4: Available National Funding Budgets

The following table specifies the maximum national budget available from the respective EMIDA partners.

| Partner | Country | Intended total financial contribution (k€). |
|---|---|---|
| Federal Ministry of Health | AT | Contact your national contact point |
| Veterinary and Agrochemical Research Centre | BE | 200 |
| Ministry of Agriculture, Department of Research and Development | CZ | 300 |
| Ministry of Food, Agriculture and Fisheries | DK | 1500 |
| BMBF | DE | Contact your national contact point |
| BMELV | DE | Contact your national contact point |
| Ministry of Ministry of Education, Lifelong Learning and Religious Affairs, General Secretariat for Research & Technology, International S&T Cooperation Directorate | GR | 200 |
| Ministry of Agriculture and Forestry | FI | 300 |
| The French National Research Agency (ANR) | FR | 1000 |
| Department of Agriculture, Fisheries and Food | IE | Contribution in kind |
| Ministry of Agriculture and Rural Development, Veterinary Services and Animal Health, Kimron Veterinary Institute | IL | 180 |
| Ministero delle Politiche Alimentari Agricole e Forestali | IT | 500 |
| Ministry of Health, Department for Veterinary Public Health, Nutrition and Food Safety | IT | 1000 |
| The Ministry of Agriculture of Lithuania | LT | 100 |
| Ministry of Agriculture, Nature and Food Quality | NL | 950 |
| Food and Consumer Product Safety Authority | NL | 300 |
| The Research Council of Norway | NO | 1125 |
| INIA | ES | 500 |
| The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning | SE | 1500 |
| Swiss Federal Veterinary Office | CH | 1000 |
| Biotechnology and Biological Sciences Research Council | UK | Contact your national contact point |
| Department for the Environment, Food and Rural Affairs | UK | 3000 |

# ANNEX 5: National Regulations

## National Regulations Austria

**Eligible Participants and Target Groups:**
This EMIDA Joint Call addresses all Austrian researchers from universities and non-university research organisations, as well as institutions of agricultural research, industry, national or regional bodies, and all others, which carry out cooperative research in the field of emerging and major infectious diseases of production animals.

The project consortium has to include **at least one Austrian participant.** The minimum number for an EMIDA project consortium is at least one participant from three different EMIDA-countries.

**Project financing** will be realized via *Virtual Common Pot*. Exact available budget not yet determined

**Eligible costs** are costs which are necessary for carrying out the approved project proposed, insofar as their amount is appropriate. In addition, all expenses or costs attributable to the project which are incurred directly, actually and in addition (to the established operating expenses) for the duration of the funded research activity, are eligible costs.

**Non-eligible costs** are costs that are not directly connected with the funded project and costs that are not considered as eligible costs due to EU competition law regulations.

**Start date** of the project can be fixed **retroactively** (a date prior to the signature of the grant agreement) at the request of the consortium, but at their own risk in case the application or the subsequent contract negotiations fail.

Generally, the **terms and conditions** for the Austrian participants follow the generic Terms and Condition of Contract ("Allgemeine Vertragsbedingungen AVB") of the Austrian Federal Ministry of Health (Bundesministerium für Gesundheit / BMG), available in German language at the Austrian EMIDA national contact point.

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Hermann Schobesberger<br>Federal Ministry of Health | Hermann.Schobesberger@ages.at | +43 664 967 09 74 |

## National Regulations Belgium (CODA-CERVA)

Projects will only be funded if one or more of CODA-CERVA staff is a partner of the proposed Research Consortium. Other Belgian scientific institutions or universities are invited to participate in Research Consortium, but on their own expenses.

The proposed research will be in line with the core activities and the mission of CODA-CERVA, i.e.

- Epidemic, endemic, and emerging transmittable diseases in animals.
- Zoonotic and emerging infectious diseases threatening public health.
- Contaminants and the quality of the environment in the framework of safe food production.
- Epidemiology : surveillance, risk analysis, and molecular epidemiology

The mission of the CODA-CERVA includes following tasks:

- Improve methods of diagnosis and prevention in view of reducing animal transmittable diseases, the impact of zoonosis on animal health and environmental pollution by harmful micro organisms
- As reference laboratory for the Belgian and international authorities,
  - Conduct scientific research in view of the development and the application of new scientific techniques and methods in the field of veterinary medicine and agro chemistry
  - Develop relevant scientific methods as standards in this field
  - Supply the official confirmation, especially of diseases that are subject to legal measures and
  - Isolate, identify, and characterise causal disease agents in the field of diseases of the list of the OIE
  - Coordinate and harmonise the diagnostic techniques used in certified diagnostic laboratories, in cooperation with the FASFC
- Study new transmittable animal diseases and the epidemiology of diseases with a strong impact on animal welfare and human health, including research on the potential role of wild fauna
- Control the safety of products of animal or vegetable origin, thereby checking the compliance with consumer and export requirements
- Conduct scientific research in order to develop and apply improved scientific techniques and methods for tracing residues of drugs, pesticides, organic substances, heavy metals, and other residues and elements that could discredit the safety of animal or vegetable products
- Study the interactions between agriculture and stock farming, and the environment in order to protect the safety of the food chain

The total budget available is €200,000 for a period of three years. Eligible costs are salaries, consumables and travel costs.

For all further information please refer to the national contact point:

Hein Imberechts — Hein.Imberechts@var.fgov.be — +32 2 379 04 26
Veterinary & Agrochemical
Research Centre

## National Regulations Czech Republic

Funding will be provided for topics, approved by Ministry of Agriculture, Department of Research, Education and Consultancy Service. Ministry of Agriculture will be finance Research Institutes, set in under the rule of law No: 341/2005 Sb., and under law No. 130/2000 Sb., as emended.

For all further information please refer to the national contact point:


| | | |
|---|---|---|
| Milan Podsedníček<br>Ministry of Agriculture,<br>Department of Research, Education<br>& Consultancy Service | Milan.Podsednicek@mze.cz | +420 221812133 |


## National Regulations Denmark

**Ministry of Food, Agriculture and Fisheries**

Research Institutes can apply for funding for research projects of up to three years' duration.

The research must strengthen the knowledge base within the specific topics of research indicated in all eight activity lines (all equally prioritised), except for specific topics B2, C3, C4, E4, F1, F2, F3, F5 and F8. The work carried out must be actual research, cf. the definitions in the OECD Frascati Manual. Product development and demonstration projects will not be funded.

In order to consolidate Danish research as a leading player internationally, emphasis is on ensuring that projects bring together relevant Danish competence in networks, consortia and related configurations. Such a grouping can help promote cohesion within the chain, collaboration with the industry and participation in other national and international programs in the field.

Public and private research institutes can apply for funding for individual projects or collaborative projects across several institutes and collaboration partners. Companies cannot apply for funding.

*Collaborative projects between* several institutes must be forwarded as a joint application. The application must contain a description of the management of the project, including organisation. The individual partners' activities, responsibilities and financial involvement, including co-financing, must be clearly stated in the application. A collaborative project has only one project manager and one contact person from each collaboration institute.

The application must contain a plan for communication of results, including reporting of results at seminars, workshops and to the public in collaboration with the Ministry of Food, Agriculture and Fisheries.

Applications with methodology/technology content must include an assessment of the anticipated environmental effect of the method as well as an assessment of the time perspective of implementation and commercialisation of the method in Denmark as well as animal welfare and ethics.

In addition, where relevant, the application must make reference to the industrial and social significance of the research. The research program is administered by the Ministry of Food, Agriculture and Fisheries; further information is available at www.ferv.fvm.dk.

**Expenditure qualifying for a funding**
Funding will be awarded as a framework grant, and additional funding will not be provided.
Funding does not cover expenditure for activities implemented before the project has been granted.
Funding can be applied for as follows:

**Direct costs:**
***Salaries (Staff costs)* –** Divided into scientific staff (including foreign visiting scientists, postdoc, PhD students) and technical administrative staff. The maximum amount funded for salaries in accordance with agreements for comparable positions in the public sector. It is a requirement that expenses for sick pay or parental leave benefit, holiday pay and other social obligations is held by the employing authority.

*Universities and other governmental institutes, that are required to act in accordance to the rules concerning funded research activities in the budget guidelines of the Ministry of Finance,* make up the salary costs as the actual salary expenses.

*Private research institutes, e.g. Approved Technological Service Institutes (GTS institutes)* budget actual salary costs per hour used (i.e. without overheads/general costs). Instead of monthly reporting, the number of effective hours has to be stated.

***Running costs, travel expenses*** – Expenditure that is necessary for accomplishing the project, including analyses, expenditure in connection with meetings and travel expenses.

***Apparatus*** – Applicants must provide the necessary apparatus for the project themselves. If this is not possible, consideration will be given to obtaining the apparatus applied for. Applications for a funding for *Apparatus* must be accompanied by an explanation.

***Other costs*** – E.g. suppliers, including consultancy services, where the institution acquires full rights of exploitation. Applications for funding of *other costs* must be accompanied by an explanation describing the details of the matter. This includes payment for Ph.D. and Post Doc training. However, attention is drawn to the fact that general expenditure for salaries must be included under the budget item *"Salaries (Staff costs)"*.

**Indirect costs:**
***Contribution to general costs***
*Universities and other governmental institutes, that are required to act in accordance to the rules concerning funded research activities in the budget guidelines of the Ministry of Finance,* add to the budget a contribution to overheads of 44% of direct costs. *Private research institutes, e.g. Approved Technological Service Institutes (GTS institutes),* add to the budget a contribution to overheads of 20% of direct costs.

For all further information please refer to the national contact point:

Lars Arne Jensen
Ministry of Food, Agriculture and Fisheries
larj@ferv.dk
+45 41 89 25 26

## National Regulations Germany

### a. Federal Ministry for Education and Research (BMBF)

- BMBF funding of the EMIDA call is provided as delineated in the announcement „Förderung von transnationalen Kooperationsprojekten in der Tiergesundheit im Rahmen der europäischen Initiative EMIDA (Emerging and Major Infectious Diseases of Animals)" published in September 2009 and updated in March 2011
- Proposed projects must be compatible with the above mentioned national announcement
- Funding will be awarded as non-repayable project grant
- The funding regulations, follow up and reporting of publicly funded projects are regulated according to ANBest (Allgemeine Nebenbestimmungen), BNBest (Besondere Nebenbestimmungen) and NKBF 98 (Nebenbestimmungen für Zuwendungen auf Kostenbasis des Bundesministeriums für Bildung und Forschung an Unternehmen der gewerblichen Wirtschaft für Forschungs- und Entwicklungsvorhaben)
- Applicants proposing a project must be registered in Germany and must be well established in Germany with plants, laboratories, employees, etc.
- The proposed project must be conducted in Germany
- The utilisation of the project results has to be in Germany
- Companies proposing a project must be capable to provide the co-financing
- Proposed projects must provide added value to the national biotech scenery and must add benefit to the national economy
- A double funding is not possible

Companies proposing a project must submit the following documents submission deadline at Project Management Jülich in addition to the online submission:

- Financial statement 2010, preliminary financial statement 2011
- Annotation of own contribution
- Business assessment
- Liquidity planning for period of proposed project

***The documents must be submitted to:***

Sabine Dues, Projektträger Jülich, Geschäftsbereich Biotechnologie EU & Internationales (BIO 3), Forschungszentrum Jülich GmbH, Wilhelm-Johnen-Straße, 52428 Jülich

For all further information please refer to the national contact point:


| | | |
|---|---|---|
| Sabine Dues | s.dues@fz-juelich.de | +49 24 61 61 92 86 |
| Petra E. Schulte | petra.schulte@fz-juelich.de | +49 24 61 61 90 31 |
| Projektträger Jülich | | |
| Geschäftsbereich Biotechnologie | | |
| EU & Internationales (BIO 3) | | |

### b. Federal Ministry of Food, Agriculture and Consumer Protection (BMELV)

BMELV funding of the EMIDA call is provided as delineated in the announcement "Bekanntmachung über die Durchführung von transnationalen Kooperationsprojekten in der Tiergesundheit im Rahmen der europäischen ERA-Net Initiative EMIDA (Emerging and Major Infectious Diseases of Animals)" published in March 2011.

Funding bases on §§23 and 44 BHO (Bundeshaushaltsordnung) and associated administrative regulations. The main items are as follows:

- Proposed projects must be compatible with the above mentioned national announcement.
- Funding will be awarded as non-repayable project grant.
- The funding regulations follow up and reporting of publicly funded projects are regulated according to ANBest (Allgemeine Nebenbestimmungen).
- Eligible Applicants are universities and research institutions domiciled in Germany. Funding of companies is not possible. Research institutions, which receive basic financing, can be funded subject to specific conditions.

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Till Schneider | till.schneider@ble.de | +49 228 99 68 45 35 68 |
| Elke Saggau | elke.saggau@ble.de | +49 228 99 68 45 39 30 |
| Federal Ministry of Education, Agriculture and Consumer Protection (BMELV) | | |

## National Regulations Finland

Funding will be provided according to the standard research requirement procedures of the Ministry of Agriculture and Forestry. Maximum amount of funding for the call is 200,000 € for three years. Any Finnish researcher or organisation is eligible to bid within eligible transnational consortia. If Finnish research providers are involved in a successful proposal, then contracting and payments will be according to standard procedures and standard terms and conditions of the Ministry of Agriculture and Forestry. More information can be found on the website: http://www.mmm.fi/fi/index/tutkimus.html. Deadlines for submission of the pre-proposal and full proposal follow the EMIDA Guidelines for Applicants.

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Katri Levonen | katri.levonen@mmm.fi | +358 916053437 |
| Ministry of Agriculture and Forestry | | |

## National Regulations France

**ANR** is funding all 8 activity lines with no priorities.

The general guidelines for the French partners can be found, in French, on ANR website (http://www.agence-nationale-recherche.fr/programmes-de-recherche/appels-a-projets/). The same rules apply to the transnational as to the national calls opened by ANR.
Generally, the terms and conditions for the French participants follow the generic Terms and condition of funding available in French language on ANR web site (http://www.agence-nationale-recherche.fr/documents/uploaded/2007/reglement-modalites-attribution-aide.pdf).

**Eligible Participants**:
This EMIDA Joint Call addresses all French researchers from research organisations, associations or companies. There must be at least on research organisation (university, public institute…) in the whole consortium.

**Eligible costs** are costs which are necessary for carrying out the approved project proposed, insofar as their amount is appropriate and justified.

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Serawit Bruck<br>The French National<br>Research Agency (ANR) | serawit.bruck@agencerecherche.fr | +33 173 54 81 70 |

## National Regulations Greece

**Funding Institution:** General Secretariat for Research & Technology (GSRT), Ministry of Education, Lifelong Learning and Religious Affairs

**Who can apply?**
Universities, research centres, public/private SMEs and enterprises, sections of the public sector. The enterprises should have at least one (1) annual financial report and have published at least one (1) balance.

**What types of costs are eligible for funding?**
I Eligible costs as direct costs:

a. Costs of personnel
b. Costs of durable equipment
c. Consumables and supplies
d. Fees for third parties
e. Travel & Subsistence allowance
f. Expenses required for the future use of the research project results

II Additional Costs: up to 5% of the total budget

**Upper funding limits for the eligible costs:**
There is no upper limit per type of eligible cost. However, the upper limits for the national public funding to private enterprises depend on the size of the enterprise and the type of the research performed (fundamental/basic research, industrial/applied research, experimental development), in accordance to the European State Rules.

**Additional National Eligibility Criteria for the proposal:**
**National eligibility criteria are further specified and defined in detail in the respective "Guide for applicants" about "European S&T Cooperation – Action for funding Greek organizations participating successfully in the Joint Calls for Proposals of European ERA-NETs"**

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Chrysoula Diamanti<br>General Secretariat for<br>Research & Technology (GSRT)<br>International S&T Cooperation<br>Directorate – European Union Division | cdiama@gsrt.gr | +30 210 7458190 |

## National Regulations Ireland

For all information please refer to the national contact point:

| | | |
|---|---|---|
| Michael Gunn<br>Department of Agriculture,<br>Fisheries & Food | Michael.Gunn@agriculture.gov.ie | +972 3 9 68 16 82 |

## National Regulations Israel

For all information please refer to the national contact point:

| | | |
|---|---|---|
| Boris Yacobson<br>Ministry of Agriculture & Rural Development,<br>Veterinary Services & Animal Health,<br>Kimron Veterinary Institute | Dir-kimoron@moag.gov.il | +353 1 6157103 |

## National Regulations Italy

### a. Ministry of Health

Italian research units willing to apply to the present call are required to meet the *criteria* of the present "Guidelines" and of the rules running for the "Ricerca finalizzata" (http://www.ministerosalute.it/ into the area "Ricerca sanitaria/Ricerca finalizzata/Bandi), for all the issues which are not specified in or in contrast to the present guide.
The main national criteria to be fulfilled are listed as follows:
The Principal Investigator (PI), either he/she is proposed as coordinator or partner in the project, has to be part of the staff of an Istituto Zooprofilattico Sperimentale (IZS).
No more than 3 IIZZSS can be associated in the same project (comprehensive of the applicant).
Other eligible institutional partners (Destinatari Istituzionali, DI) and other research organizations (Istituzioni Esterne, IE) are allowed to be part to the project on the basis of specific agreement and/or contract as sub unit with the IZS proposing the project.
Each researcher can apply to the present call with only one proposal as coordinator or partner.
Each IZS can apply to the present call with only one proposal as coordinator.
The maximum project duration is three years (36 months).
A copy of the pre-proposals and of the full proposals, have to be submitted also to the "Dipartimento per la sanità pubblica veterinaria, la nutrizione e la sicurezza degli alimenti - Ufficio II" at the following address: marina.bagni@sanita.it and m.ianniello@sanita.it ; the above will apply also in the case of partnership in an not Italian coordinated project.

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Marina Bagni<br>Ministry of Health<br>Dep. for Veterinary Public Health,<br>Nutrition & Food Safety | marina.bagni@sanita.it | +39 06 5994 6129 |

### b. Ministry of Agricultural Food and Forestry Policies

Research Institutions can apply for funding for research projects of up to xy years' duration.
The Italian Ministry of agricultural food and forestry policies has no particular restrictions for what concerns the nature of the applicants.
As "Research institution" we mean University Departments and Institutes; Research Councils and Agencies both private and public; no profit bodies and agencies or private company (SMEs) and labs. *Collaborative projects between* several institutes must be forwarded as a joint application. The application must contain a description of the management of the project, including organization. The individual partners' activities, responsibilities and financial involvement, including co-financing, must be clearly stated in the application. A collaborative project has only one project manager and one contact person from each collaboration institute.

Restrictions
It is mandatory, for all the research institutions as defined above, that they state in the official documents (statute and/or articles of incorporation, memorandum of association) that among their missions they also "perform research activities" and not only "promote, or support research activities".

The only difference between private labs or companies and public bodies or no profit agencies, is the percentage of contribution.
For what concerns the private labs and companies it is possible to finance up to 60% of approved project costs; for the public bodies it is possible to finance up to 100% of approved project costs. The funds are transferred to the beneficiary in three steps: 1st step: 65% of the approved costs immediately at the issue of the Ministry decree (contract between the Ministry and the beneficiary); 2nd step: 25% of the approved costs once the mid-term report (both scientific and administrative) has been approved; 3rd step: 10% of the approved costs once the final report has been approved.

Admitted costs

*Salaries (Staff costs)* – Only for non permanent scientific staff (including foreign visiting scientists, post.doc, PhD students, fellowships and grants) and technical administrative staff.

*Private research institutes,* budget actual salary costs per hour used (i.e. without overheads/general costs). Instead of monthly reporting, the number of effective hours has to be stated.

*Running costs, travel expenses* – Expenditure that is necessary for accomplishing the project, including analyses, expenditure in connection with meetings and travel expenses.

*Apparatus* – Applicants must provide the necessary apparatus for the project themselves. If this is not possible, consideration will be given to obtaining the apparatus applied for. Applications for a funding for *Apparatus* must be accompanied by an explanation and three estimations of costs coming from three different suppliers companies. Only depreciation expenses will be reimbursed except for PC and/or note books.

*Other costs* – E.g. consultancy services, where the institution acquires full rights of exploitation. Applications for funding of *other costs* must be accompanied by an explanation describing the details of the matter.

*Overheads* – no more than 10% of the sum of the above mentioned costs, "Apparatus" excluded

Additional forms
Once the project has been approved by the call committee, during the negotiation each Italian research Institution has to fill in a form called "Modello C", which represents the full proposal of the project in Italian. If the Italian institution is also playing the role of coordinator it must fill in another form "Modello A" too.
The forms will be made available on the Ministry website at the following address: http://www.politicheagricole.it/RicercaSperimentazione/default

For all further information please refer to the national contact point:

Alberto Masci a.masci@politicheargicole.gov.it +39 06 46655085
Ministry of Agricultural
Food and Forestry Policies

# National Regulations Lithuania

**Ministry of Agriculture of Lithuania**

According National Regulations, the projects, which are implemented into the sectors of agriculture, environment and others, as described in Regulation (EB) Nr. 800/2008 are financed Fund for each international call are estimated considering to the priorities of the Ministry of Agriculture of Lithuania (MAL).

**Requirements for fund**

Relevance of the applicant to get the fund is valuated in the working group of the ERA-NET Project, which is guiding the criteria of availability and selection priority and is taking into account the recommendations of international experts.

**Assessment of requisitions**

The assessment of international call is administrated of secretariat, participating the coordinator of the Project ERA-NET.

Using virtual joint budget financing model, assessment of requisition is proceeded in four stages:

1. Inspection of administrative correspondence;
2. Inspection of national eligibility to finance;
3. Inspection of international experts;
4. National inspection concerning funding according the criteria of selection priority.

Using real joint budget financing model, assessment is preceded in two stages: inspection of administrative correspondence and inspection of international experts.

**Confirming of requisitions and agreement**

According to the offers of ERA-NET Project leading committee and resolutions of ERA-NET working group by order of minister of Lithuanian Agriculture confirms the list of selected and funding projects in which applicants of Lithuania are participating and partners are quarranting financing sources of their activity. The list is published in the network of The Ministry of Agriculture of Lithuania (MAL) www.zum.lt

The order of funding

The funding for the principal of the Project is paid by the way of cost compensation with imprest or by the way of cost compensation.

**Reports of projects implementations**

Reports of projects implementations are made by coordinator of ERA-NET Project part, accounting for the proceeding of all partners and purposive used fund.

The full version can be seen in the network of The Ministry of Agriculture of Lithuania (MAL) www.zum.lt

For all further information please refer to the national contact point:


| | | |
|---|---|---|
| Antanas Sederevicius<br>The Ministry of Agriculture<br>of Lithuania | Antanas@lva.lt | +370 37 363362 |

## National Regulations The Netherlands

Content
Proposals will only be eligible for funding, which, in addition to the EMIDA eligibility criteria, meet the following requirements.

- Proposals are only eligible for funding if they address one of the *specific topics* supported by The Netherlands (EL&I and/or nVWA)

**Regulations**
Funding will be granted under the "**Algemene voorwaarden voor het verrichten van onderzoek ten behoeve van het Ministerie van Landbouw, Natuur en Voedselkwaliteit" (februari 2004).** However when a DLO institute is the first contractor on the national level, the "Subsidievoorwaarden DLO" and the "LNV tarieven" will apply.

Maximum funding available, from the combination of EL&I and nVWA, is 1.25 M€ for the total call.

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Albert Meijering<br>Ministry of Economic Affairs,<br>Agriculture & Innovation | A.Meijering@minlnv.nl | +31 6 54 23 2285 |
| Wim Ooms<br>Food & Consumer Product<br>Safety Authority | Wim.Ooms@vwa.nl | +31 70 448 4088 |

## National Regulations Norway

The Research Council of Norway (RCN) is funding according to the rules of Researcher projects (Forskerprosjekt) of RCN. Up to 100% of total eligible costs may be funded. RCN does not require a national application, but it should be clear from the common application what role the Norwegian partners would have and the size of their budget. The budgets of the Norwegian participants in each proposal must be limited to 1 Mio NOK (110,000 EUR) per year.

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Øystein Rønning<br>The Research Council of Norway | Oro@rcn.no | +47 22037106 |

## National Regulations Spain

**Eligibility**

The call is addressed to public research institutions and other bodies (non-profit bodies, agencies, private entrepreneurs or labs) which are associated to a public research institution.
The body selected for financing will establish an agreement with INIA where both will fix the terms of the contract.

**Funding**

Admitted costs

a) Salaries: Only for non-permanent scientific staff and non-permanent technicians hired for the project.
b) Consumables
c) Travel and subsistence costs
d) Indirect costs: Not exceeding 20 % of the direct costs (DC = a + b +c )
e) The funds will be transferred to the beneficiary in three annual payments.

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Joan Calvera<br>INIA | calvera@inia.es | +34 91 347 68 01 |

## National Regulations Sweden

The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning, Formas, participates in all broad topics/activity lines. The Swedish applicants are recommended to contact their national contact point (see below) to confirm the size of the national funding that is available for each topic.

Funding will be provided according to the eligibility and regulations of “Grants for Research Projects” please see Formas Handbook (www.formas.se) for further information. Up to 100% of total eligible costs may be funded. Formas does not require a national application, but it should be clear from the common application what role the Swedish partners will have and the size of their budget.

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Johanna Dernfalk<br>The Swedish Research Council for Environment, Agricultural Sciences & Spatial Planning | Johanna.dernfalk@formas.se | +46 8 775 4021 |

## National Regulations Switzerland

Potential Swiss project consortia partners must contact their national contact point (see below) before agreeing to participate in a consortium and before submitting a pre-proposal. This is mandatory in order to receive potential funding from the Swiss Federal Veterinary Office (SFVO), and it is needed to get an indication how much national funding might be available for any particular subject within each activity line or specific topic.

Funding will be provided only for projects covering topics within the SFVO`s "Focus of Research 2008-2011" (http://www.bvet.admin.ch/org/01028/01029/index.html?lang=de) and within the "Animal Health Strategy 2010+" (http://www.bvet.admin.ch/gesundheit_tiere/03007/index.html?lang=de).

Funding will be provided according to the standard research requirement procedures of the SFVO with a maximum total pool of CHF 250,000 per year over 3 years. Any Swiss researcher or organisation is eligible to bid within eligible transnational consortia. If Swiss research groups are involved in a successful proposal, contracting and payments will be according to standard procedures and agreements of the SFVO.

Detailed information can be found in the research documents on the SFVO website: http://www.bvet.admin.ch/org/01028/index.html?lang=de

For all further information please refer to the national contact point:

| | | |
|---|---|---|
| Irene Schiller<br>Swiss Federal Veterinary Office | irene.schiller@bvet.admin.ch | +41 31 323 16 89 |

## National Regulations United Kingdom

### Department for Environment, Food and Rural Affairs (Defra)

Funding will be provided according to the standard research requirement procedures of Defra at 100% of eligible costs over the three year project lifespan. Any UK researcher or organisation is eligible to bid within eligible transnational consortia. If UK research providers are involved in a successful proposal, then contracting and payments will be according to Defra's standard procedures and standard terms and conditions. Detailed information can be found in the research documents on the Defra website:
http://defraweb/evidence/science/funding/index.htm

### Biotechnology and Biological Sciences Research Council (BBSRC)

BBSRC will consider applications from eligible researchers in the in the Activity lines listed under the UK column at Annex: Funding scheme by Country. All applicants must meet BBSRC eligibility criteria (see http://www.bbsrc.ac.uk/funding/apply/grants_guide.html). BBSRC funding for this call is not ring-fenced and successful projects will be considered on a case by case basis. Funding will be provided subject to the terms and conditions set out in the BBSRC Research Grants Handbook.

Any UK applicant wishing to apply for the EMIDA ERA-Net call should contact the UK Programme Officer at BBSRC to discuss the remit of their proposal and to confirm that the UK component is appropriate, falls within the funders remit.

For all further information please refer to the national contact point:

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