2018

Seventh Call EUFMD – Fund for Applied Research (EuFMD-FAR) – 2018

Wildlife, Environmental sampling, Vaccine Stability and Data management

eufmd
european commission for the control of foot-and-mouth disease

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EuFMD Fund for Applied Research (EuFMD-FAR)

7th Call: for proposals on the following

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Theme 12. Development of improved, web-based tools for FMD risk mapping

A funding of circa **160,000€** is available to support up to **three proposals** at a maximum of **50,000 €** per contribution (study). As the overall number of proposals that can be funded is not limited, proposers should consider if the studies can be performed for a fraction of the maximum of 50,000€, to give more chance of success and to enable the reviewers to support a higher number of active research collaborations.

Background

The EuFMD, under the multi-annual agreement with the European Commission (DG-SANTE), has since 2008, provided support for small applied research projects that are relevant to the technical issues that are seen as priorities of the EuFMD member states[1]. The thematic priorities have been mainly identified at the biennial General Sessions, held in 2009, 2011, 2013, 2015 and 2017 and a specific Research fund was adopted as a component (1.5) of the four-year, EC funded Workplan of the Commission. In addition to this, Funds are available to assist the work in specific Pillars and the 7th Call relates to **Pillar III, Global Strategy.**

The Strategic Plan of the EuFMD for the period 2015-19 has three Strategic Objectives (Pillars), which are:

1. To Improve readiness for FMD crisis management by Members;
2. To Reduce risk to Members from the FMD situation in the European neighbourhood (progressive control in neighbouring regions);
3. To Promote the global strategy of progressive control of FMD.

The plan was updated and adopted at the 42nd General Session of the EuFMD member states in April 2017.
The 7th call scope relates to priorities agreed with the EuFMD Executive at the 94th and 95th Sessions in 2017 and March 2018.

[1] Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Georgia, Greece, Hungary, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Norway, Poland,

Theme 9. Parameter setting of FMD transmission at the wildlife/domestic animal interface for integration into the EuFMDiS disease spread model

Expected results

1. Evidence-based evaluation of risks and parameter estimates for transmission within and between wildlife species and wildlife-domestic species relevant to the diverse ecological settings for wildlife/domestic transmission of FMDV between species in European neighbourhood
2. Demonstration that the parameters can be utilised within the modelling framework of the EuFMDiS model (or another alternative model). The programming of EuFMDiS or an alternative model need not be achieved within the proposal but if desired it may be included, to add value to the proposal.

Impact of the results

The addition of a wildlife spread component to EuFMDis (or other models) will assist epidemiologists and disease contingency planners within the member states to review how the involvement of wildlife in FMDV epidemic may affect the duration, spread, and impact of an FMDV incursion.

Context

To support Foot-and-Mouth Disease (FMD) planning, there is a need to better understand and manage the risks of FMD transmission associated with wildlife, particularly wild boar. This involves understanding how and under what conditions FMD might be transmitted between wild life and domestic livestock and vice versa. The ability to incorporate wild animal components in existing FMD decision-support tools would improve the ability to evaluate and manage these risks The development of a multi-country European FMD spread model (EuFMDiS) was initiated following an award made under an earlier FAR call, and has significant progressed in 2017-18 (Lead: Graeme.Garner@fao.org) with seven central European countries participating in providing data and parameters relevant to model application at national level in Europe. At present, this model -and most FMD spread models used to support FMD preparedness- do not incorporate how incursions may begin in wildlife and/or involve wildlife transmission. The potential for wildlife to maintain FMDV over several months has been seen in outbreaks in Europe in 2010-11. Understanding transmission parameters at the wildlife/domestic animal interface and model development may also be relevant for other wildlife associated infections.

The confidence in estimates of certain parameters may be improved by additional studies in the field. The proposers can include such studies if needed to address critical evidence gaps.

Desirable elements to proposals

- The grant-recipient organization (RO) should bring the capacity of its own network and be able to leverage its existing workplans to provide the parameter data;
- The RO should have a history of work in the area of wildlife associated disease transmission;
- The RO should already have significant work in the area of providing data on wildlife populations in Europe;
- The identification of sensitive parameters (those with a likely strong impact on the results of epidemiological modelling of FMD) should be suggested in the proposal, and means to gain evidence identified. If field studies are needed, it is best these are separately described and costed to enable the reviewers to see the added value of the field studies (additional EuFMD funds for the field studies may be possible);
- It is recognized that different skill sets may be required to address this call (covering wildlife ecology, FMD epidemiology and disease modelling). The RO should provide information on their experience in these areas, their proposed approach to the work, and where appropriate any external collaborators that would be used. Costings should include any sub-contracted external expertise or collaborations;
- Close working relationship embedded in the workplan, between the EuFMD Secretariat and the RO. This may involve, for example, consultation on the design and implementation of the project activities.

Theme 10. Field application of environmental sampling for FMDV

Expected results

1. Proof-of-concept that environmental sampling (ES) for FMDV can provide added-value to the current means of detection of infection which are limited to animal-sampling;
2. A review of the potential of environmental sampling to improve surveillance for FMDV, covering situations including but not limited to 1) early detection of infected animals, before clinical signs develop, 2) detection in situations where clinical signs may be missed, such as vaccinated populations, and 3) the detection of FMDV on fomites or personnel/equipment as part of improving biosecurity or 4) as part of removal of restrictions on farms or villages affected by FMDV and following the last case of clinical FMD.

Impact of the results

ES has the potential to assist in earlier detection of infection (air, milk, etc) , even before clinical signs, which may allow for restrictions or culling of such affected animals; ES might have a role in wildlife infections where sampling requires hunting/ shooting of animals which might disperse infection. ES also has a potential to change the way surveillance is conducted, by adding environmental monitors to provide additional (24/7) surveillance support, for example upon high risk and high value farms.

Context

Environmental sampling (ES: from air, on fomites or any surfaces contaminated by infected animals) is utilised for other infectious diseases and may add value to surveillance where the clinical signs are either missed by livestock keepers or there is a reluctance to report the suspected disease. In endemic regions, the situation of very large dairy and pig operations may complicate control and the impact of vaccination may be to reduce shedding of infection, and here ES may provide evidence to improve vaccination programmes, or to allow future lifting of any restrictions where control by complete culling is not feasible. In both epidemic and endemic situations, livestock owners may fail to notice or report clinical signs of FMDV and environmental sampling may potentially give the VS or the owners of such farms the ability to monitor for infection and take action at an earlier stage to control spread.

Desirable elements to proposals

- Studies in field settings in endemic regions for FMDV are strongly encouraged.
- Studies that look at situations where FMDV is expected to be present at the pre-clinical (or subclinical) level are encouraged.
- Studies relevant to proof-of-concept that ES may be an aid to assess residual infection in vaccinated pig or cattle herds are encouraged.
- The grant-recipient organization (RO) should bring the capacity of its own network and be able to leverage its existing workplans to manage the studies, and provide convincing evidence of capacity to manage the relationship (including permits) for studies with countries where the studies are proposed to occur.

Theme 11. Field applicable assays for FMDV integrity in vaccines (vaccine stability)

Expected results

1. Proof-of-concept that methods for detecting FMDV integrity in vaccine preparations can adapted to formats that can be applied at field level;
2. A review of the potential of the method(s) for application to improve monitoring of vaccine stability along the production to marketing chain.

Impact of the results

A field applicable test for evidence that significant degradation of virus integrity has occurred could have a high impact by making possible the screening of vaccines held in production centres or cold stores, replacing the one month (at least) delay and cost of animal immunogenicity studies. Such a test could give confidence to vaccine service providers (agents in the delivery chin) and assist to monito the vaccines held in storage by veterinary services at field service centres.

Context

FMD virus is only moderately stable and in vaccines, temperature of storage, seed virus, vaccine composition and use of adjuvants and excipients, all affect the stability with the result that duration of immunogenicity of FMD Vaccines may be compromised at many points in the production process. In the field, the cold chain may be affected by power cuts or other events, and FAO frequently has met a problem with cold chain maintenance from the producer plant to the airport of destination.

Previous studies, partly supported by the FAR-Fund, have indicated that several methods look to be applicable to testing formulated vaccines for stability. However none of these methods have yet been applied in field settings either to prove the extent of the problem at field level, or to follow the stability of vaccines during formulation/blending. Field level in this context may include the vaccine producer, but principally the desire is for tests applicable at the point of vaccine use (e.g. in cold storage). Potentially the feedback to producers may assist them to improve the formulation or storage of their vaccines, to give confidence to buyers or users of FMD vaccines.

Desirable elements to proposals

- Studies in field settings at the “point-of-use” for FMD vaccines are strongly encouraged;
- Development of assays in formats that can be undertaken rapidly (<24 hours) are encouraged. A “penside test” format could be ideal but is not the only format that could be the target, since a more quantitative method may also be important for the decision on whether a vaccine vial passes the stability test threshold for use;
- Studies conducted with the participation of an FMD vaccine producer are encouraged. A statement from them of their willingness to participate is essential, and any in-kind or other contribution to the overall studies should be recorded;
- Field studies that provide evidence of their being a problem (or lack of a problem, if proven) at field level in vaccine stability (or following simulated and realistic field conditions) are encouraged. It is important that the confidence in stability is supported by evidence, and it is desired that the studies should assist to provide these.

Theme 12. Development of improved, web-based tools for FMD risk mapping

Expected results

A new or improved web-based tool for displaying (and communicating) information on reported or inferred FMD occurrence, patterns of virus circulation and changes in risk profiles for countries and regions.

The tool or system developed should:

1. Be based on a range of key information sources for informing the risk of FMD;
2. Be capable of integrating information provided by a network of informants and relevant stakeholders, and provide real-time analysis or feedback to such information providers;
3. Include interactive, user-friendly, web-based outputs that display FMD patterns and risks using the most recent data available.

Context

Reliable, up-to-date information on FMD virus circulation is key for informing surveillance priorities, disease control strategies and contingency plans including decisions on vaccine selection. EuFMD, working with the WRL for FMD at Pirbright has developed the "PRAGMATIST" tool to improve vaccine selection. PRAGMATIST requires estimates of the relative prevalence of virus lineages in circulation, which is currently based upon expert opinion together with the limited the virus typing information available at country and regional level.

It is planned to improve these estimates through better support to the network of experts whose role in providing national or regional assessments requires access to a range of information relevant to projecting changes in risk and lineage circulation. This work also needs to integrate with the EuFMD "Global Monthly Report" (GMR), by improving the display of information. Currently this report received inputs from FMD laboratories around the world, but the mapping in the reports is not interactive to allow users to configure the information they want to see.

In addition to laboratory data and reports, which tend to relate to samples taken several months earlier, there is a need to utilise other types of information relevant to FMD risk including:

- sequencing and vaccine matching data from the WRLFMD and other reference laboratories;
- OIE WAHIS reports;
- field intelligence from focal points on disease trends and high-risk periods
- animal population at risk data
- analyses or expert opinion on:
    - effectiveness of control measures, including vaccination, to mitigate risk in the country or region at risk;
    - cyclicity of FMD incidence in the country concerned, which may relate to natural immunity after previous epidemics;
    - outputs of relevant research studies ;
    - market trends affecting cross-border movements, and where available, differentials in price for live animals and products;
    - seasonal migration patterns.

There is a need to integrate several of these multiple sources of data in a systematic way to provide a timely, informative and accessible portal for risk managers.

Desirable components of proposal

- user-friendly interface;
- mapping functionalities that integrate and display diverse data types to produce up-to-date reports of FMD occurrence and risk profiles;
- functionalities that include temporal-spatial elements to consider such aspects as emerging lineages, and changes in risk (i.e. herd immunity, performance of vaccines, and animal migration patterns);
- incorporates expert forecasts for change in risk lineage incidence, to assist contingency planning in both free and endemic setting;
- the display communicates the level of uncertainty in the output;
- other methods of data display /communication are encouraged In addition to the maps.

Preference will be given to proposals that have a route to sustainability (by FAO or the partner involved) with the system chosen, and which automate, to the extent that is secure and safe, the collation of information and generation of information content for the GMR.

The recipients of this award are expected to work closely with the EuFMD and its network of data informants, and also bring an existing network of relevant collaborators and background in risk analysis and communication.

Available funding and timeframe

The total budget envelope at this point is circa 160,000€, with a maximum contribution of **50,000€ to support individual proposals.** The final report are desired before the end of August 2019.

Notes on the funding

The funds are expected to be used mainly to provide expertise to undertake the studies. The proportion of expenses related to the overheads, travel and procurement should not exceed **10%** of the budget for the overheads, **20%** for the travel and **10%** for the procurement. Any additional expenses needed for the development of the system should be indicated together with the application form.

General:

1. Payments

Usually made in three tranches, the initial advance being not greater than 30%, and final payment not less than 20%. The interim payment is conditional on interim reports/progress and the necessary milestone indicators will be agreed with the RO.

2. Eligibility of costs

- Currency : mandatory in USD or EURO
- Non - Eligible costs for financing (EU funded projects)
  - overhead costs;
  - administrative;
  - any other indirect costs.

3. Budget drafting some useful indications (a template is attached)

a)**Human Resources - Personnel:** -insert wording **Experts** –Avoid wording Consultant

b)**Procurement & Expandable equipment ancillary to services**
(Include Non-disposable and Disposable Equipment/Material)

- Non disposable Equipment: Beneficiaries receiving benefit at end of the project should be precisely indicated into the Description of the services;
- Total amount of budget dedicated to purchase of disposable equipment not to be more than **5%** of total procurement;
- Disposable Equipment (intended as consumable) should not be charged than more than effective cost;
- "FAO could ask to provide proforma invoice/or quotations of supplied consumables/materials);
- *to indicate final Beneficiaries and who will keep equipment at the end of project as results and implementation of service after end of Agreement.*

4.In case of sub-contracting / or partnership where the RO wishes to work with additional parties:

The FAO form of agreement is strictly bilateral - and must be only between one unique partner and FAO/EUFMD.

The direct partner needs to be the sole and unique counterpart with FAO in the complete wording of the agreement /Letter of Agreement (LoA).

The wording in the LoA and Note for the File needs to be in active tense, where partner is clearly responsible and not to mention any other entities if not as under partner supervision and responsibility

Any kind of partnerships in the LoA **must be eliminated, no wording of sub-contracting/ or other partners in budget section to be mentioned.**

LoA establishes rights and obligations for the two Parties signing the agreement.

Where the RO works with partners, the Agreement must state:

The direct partner assumes the risk of non-performance of other partners (names to be specified) and any other subcontractor for all the services that will be provided within the framework of the current LoA.

5) **TRAVEL:(to include estimated cost per person for travel to)**

- Nb persons: _____
- Destination: _____
- Duration:_____
- Estimated cost:
- Flights Economy A/R:$ _____
- Transportation:$____
- Arrangement:$
- Accommodation $____
- Fee Visa: $____

Applicants

Applications are welcome from **any source** and are not limited by geographical origin. Awards are normally made to **not-for-profit research centres** or **organizations** with a capacity for signing the contract, with principal investigators capable of delivering quality research and/or other project outputs, and for managing funds and reporting. **For-profit bodies** are welcome to apply as part of a consortium but, normally, the financial award can be made only to the Leader which should be a non-profit organisation. Interested parties can discuss ideas prior to proposal with the Secretariat or Members of the Standing Technical Committee (STC).

The applicant should declare this contact with the STC on the form.

The application form is given in Annex 1 and online.

Review Process

Applications will be assessed in two stages, first by external referees (Referee Panel) then by the Standing Technical Committee (acting as the Grant Review Board), a multidisciplinary panel of experts who are familiar with the priorities and scope of the fund and the context of the institutions which are expected to utilise the knowledge, tools and outputs.

Two-Tiered Peer Review Process

1st Review by Referee Panel

- TWO external referees are chosen for their expertise in specific technical areas and geographical regions; at least one of these is from the EuFMD Special Committee on Research;
- Initial review of technical merit and feasibility of the proposal;
- Review of the evidence of the applicant's, past and future, capacity and presence in the selected country;
- Rate and give comments on each grant application.

2nd Review by Grant Review Board

- Assess quality of Referee Panel's comments;
- Final review of technical merit and feasibility and evidence of the applicant capacity and presence in the selected country;
- Evaluate relevance to scope of fund and thematic priorities, applicability to local context, applicant's track record, administering institution's research capability, "value for money" of proposals;
- Make recommendations on funding to the Executive Committee.

Assessment Criteria

These are provided in **Annex 2** and online.

Composition of the Referee Panel

The Referee Panel includes the 15 members of the Special Committee for Research and Programme Development (SCRPD) of the EuFMD, plus three experts from the FAO FMD Reference Centres in Europe. The Referees for each proposal will be selected by the Chair of the STC, or in the case of a conflict of interest, his/her Deputy. One referee must always be from the SCRPD but according to need, the Chairperson may also invite an external referee to undertake the review if the expertise is not present within the SCRPD.
Reviewers should complete a conflict of interest statement before review.

Composition of the Grant Review Board (GRB)

The GRB is composed of the Members of the STC plus the Secretary, EuFMD Commission. DG-SANTE have the right to be represented in the GRB. Representatives of the GRB should complete a conflict of interest statement before review, and if doubt exists, not take part in the review of the applications in which a conflict of interest may exist. The Chairperson should ensure that a minimum of there are at least three persons for any decisions, co-opting a member of the Executive Committee if this is required.

Minutes of these meetings will be reported to the EuFMD Executive Committee.

Award of Grants and dispersion of funds

The EuFMD Secretariat will provide the Executive Committee with the recommendations for funding. Decisions will be normally taken by the Executive or the Chairperson of the Executive together with the EC at the regular Executive Committee Sessions at six-monthly intervals. In case of urgency, decisions will be taken by the Chairman and the representative of the EC as soon as the Review Board have made their recommendations.
Funding will be dispersed by the EuFMD through Letters of Agreement (LoA) which are contracts between the FAO of the UN and not-for-profit institutions. In exceptional circumstances, the funds may also be dispersed through direct implementation mechanisms by the Secretariat where LoAs cannot be used. The application form should provide most of the details needed to enable the LoA to be finalised quickly after decision is taken, and initial funding dispersed. Limited changes to the proposal may be agreed when the LoA is negotiated and any major changes would require a review by the Chairman of the STC.
The Reporting schedule will be set at the time of the LoAs being agreed and normally the contractees must provide reports that coincide with the timing of the six-monthly STC meetings and provide an oral report to the biennial Open Session of the Standing Technical Committee (Next Session: October 2018).