

Pre-Announcement of a Call for Transnational Collaborative Research Projects: “Helminth infections and changing climate: tackling the challenges for animal health”

The International Coordination of Research on Infectious Animal Diseases (ICRAD) is an ERA-Net under Horizon 2020 (Grant Agreement No. 862605).

The key mission of ICRAD is to:

- support cross-cutting research to improve animal health and welfare, with associated benefits towards public health, the environment and the economy.
- connect research partners with different but complementary scientific and technological expertise to maximize resources and share risks, costs and skills. The partnership between industrial and academic researchers, where appropriate, will improve and accelerate the development of technological solutions for the benefit of animal health and welfare.

Research and innovation jointly funded by the ICRAD partners seeks a collaborative approach towards the development of novel and improved instruments to address, detect and control infectious diseases, particularly regarding novel detection, intervention and prevention strategies.

With an aim to increase preparedness and ability to respond to emerging and endemic livestock threats, 19 projects funded through the first co-funded ICRAD call are looking at major infectious animal diseases and 10 projects selected for funding in the second ICRAD call will study zoonotic diseases with an emphasis on the animal-human interface. **This third ICRAD call will focus on the impact of helminth infections and climate change on livestock health, together with development of control strategies such as novel vaccine and diagnostic technologies.**

In light of this, ICRAD announces this upcoming third call for joint transnational research projects on animal health. The Joint Call is expected to bring together nine funding organisations from eight countries.

Aim & scope of the call

The overall objective of this research call is to increase understanding and preparedness for impending effects on animal health and the livestock industry caused by spread of anthelmintic resistance and climate change. This includes basic research to better understand mechanisms behind these topics or applied development of detection, management, intervention, and prevention strategies.

Proposals should address one of the three following research areas of the call:

Research Area 1:

Research to improve understanding of anthelmintic resistance mechanisms, the impacts of anthelmintic resistance on livestock health, and the development of tools to help diagnose, prevent, and manage it.

Potential areas of interest could be:

- Understanding the biological response of helminths to changing climatic conditions and potential impacts on anthelmintic usage/ requirements;
- Improving methods used for diagnosis and monitoring of helminth infections, including drug efficacy;
- Tests for detecting anthelmintic resistance;
- Pen-side tests and associated decision support tools that rapidly inform on levels of infestation and morbidity;
- Develop methods to quantify or map levels of anthelmintic resistance present in livestock
- Improved knowledge of the immune mechanisms associated with natural, and vaccine induced protection from helminths; and
- Development of novel and improvement of currently available helminth control strategies including the development of anthelmintic vaccines.

Research Area 2:

Research to increase understanding of the impacts of climate change and vector borne diseases on animal health, including the development of tools to prevent, prepare and respond to animal health emergencies triggered by climate change.

Potential areas of interest could be:

- Epidemiological monitoring of changes to spatial and temporal distribution of animal disease resulting from climate change– including the development of novel digital tools to visualise, collate and report this information;
- Modelling and forecasting of the impacts of climate change on the spread of infectious livestock disease - including how animal movement and implementation of control zones could influence this;
- Understanding changes to transmission and pathogenicity of animal disease resulting from climate change; and
- Understanding direct and indirect impacts of climate change, for example thermal stress, on the susceptibility of livestock to disease.

Research Area 3:

Research to support the development of novel and improved vaccine and diagnostic tools and platforms will be supported, as well as research to assess the utility and efficacy of existing technology platforms. Proposals with a focus on anthelmintic vaccines, or which include an industrial partner are strongly encouraged in this research area.

a. Vaccine Technology Platforms Robust and flexible vaccine platform technologies, fit for multiple, and rapidly changeable vaccine targets, can reduce the technical and regulatory time for vaccines against emerging pathogens.

Potential research areas of interest may include:

- Target areas within the pipeline of platform technologies, from antigen discovery and delivery through to immunological testing and enabling systematic evaluation and comparative analysis of platforms e.g., dose/duration/vaccination regimen;
- Development of rapid response genetic protein sequence platforms (e.g., DNA and mRNA-based), particularly to utilise as 'plug and play' tools;
- Expand the range of antigen-delivery systems (adjuvants, vectors, etc);

b. Diagnostic Technology Platforms Novel and point of care diagnostic platforms are needed to accurately detect disease presence in animals. Although reagents are available to develop diagnostics in many animal species, these are not always practical in the field or effective at detecting the presence or exposure to pathogens.

Potential areas of interest may include:

- Multiplex serology - Developing adequate testing to deal with pathogen and host diversity and coinfections and in field-based/on-site testing;
- Species independent testing - Develop serology tests that are non-species specific and can be used in a wide range of environments; and
- Pathogen specific testing - Development of tests to monitor and detect circulating strains, including bacterial strain typing.

Proposals that focus on the development of novel vaccines or diagnostic tools targeting helminths are of particular interest.

The research funded through this call is to improve health of livestock and the focus of each research proposal should be on animal health / disease. Research that mainly focuses on the below **are not in scope of the call**:

- Improving human health
- Companion animals
- Food-borne pathogens
- Animal welfare
- Environmental/climatic modelling
- Antimicrobial resistance
- Ectoparasites

Eligibility rules

In this call, ICRAD expects proposals for collaborative research, development and innovation from transnational consortia composed of a minimum of three members from at least three different countries with a maximum of eight, with no more than two partners from one country. National and regional eligibility rules must be followed. They will be published together with the full call announcement at <https://www.icrad.eu/calls/> and <http://www.submission-icrad.eu>.

Procedure & Timeline

The call will follow a two-stage evaluation procedure. Projects are expected to start in **July 2024** at the latest, depending on grant negotiations with the relevant regional or national funding organisations.

Timetable		
	Phase	Date
Pre-proposals	Opening date	3rd April 2023
	Deadline for submission	1st June 2023
Full proposals	Opening Date	2nd October 2023
	Deadline for submission	4th December 2023
Funding decisions and project start	Funding decisions	April 2024
	Project start	July 2024

Information & Application

The full call text and link to the digital submission platform will be published when the call opens on **3rd April 2023**.

A live webinar for applicants will be organized and announced in due time. This webinar will present the call and its research area. Call secretariat and representatives from funders participating in the call will answer questions live.

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*grey = participation to be confirmed