



Joint BBSRC-DBT Call for Collaborative Proposals to support Farmed Animal Disease and Health (FADH) Research

Status: OPEN

Closing date: 6 March 2013

Further information: BBSRC: www.bbsrc.ac.uk

DBT: http://dbtindia.nic.in/index.asp

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This document contains the following sections:

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- 2. Background to the call
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- 6. Peer review
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SUMMARY

The Biotechnology and Biological Sciences Research Council (BBSRC) in the UK http://www.bbsrc.ac.uk/ and the Department of Biotechnology (DBT) in India http://dbtindia.nic.in/index.asp are pleased to announce a joint call for collaborative proposals to support research aimed at novel underpinning control measures and technologies to combat infectious diseases of farmed animals (ruminants, pigs, poultry and farmed fish) and improve their health. BBSRC and DBT have each earmarked up to £5M for this call. Projects should be up to a maximum duration of 3 years; whilst no upper cost limit per project is stipulated, BBSRC and DBT envisage funding multiple projects under this call.

The purpose of the call is to build on the combined strengths of academic research groups within India and the UK to work together on collaborative multi-disciplinary research that will underpin the development of novel control measures and technologies to prevent and reduce diseases of farmed animals including aquaculture.

This call for collaborative proposals will require applicants based in India and the UK to work together in partnership within cross-national teams on research projects where the India-based component would be funded by DBT and the UK-based component would be funded by BBSRC. Eligibility to apply will be determined by national eligibility rules. The nature of the resources requested must also adhere to national guidelines. Further information is presented within the Section: **Application process including how to apply.**

The call for proposals will be focussed around three priority areas and two underpinning, cross-cutting themes identified at the workshop:

Priority Areas

- New Generation Vaccines
- Genetics of Host Disease Resistance
- Novel Diagnostic Tools

Cross-cutting Themes

- Epidemiology and Modelling
- Pathogen Biology

Applicants wishing to apply to the call must use the specific **Case for Support Template** associated with this call. The template can be downloaded from the related links section: http://www.bbsrc.ac.uk/funding/opportunities/2013/farmed-animal-disease-health.aspx

BBSRC and DBT will conduct an integrated peer review process involving external referees. Applications will be ranked by an international panel of experts in September 2013 and a decision for funding will be made by October 2013. Awards will be announced in November/December 2013. It is expected that all grants will commence within six months of award.

The deadline for receipt of full proposals is: 6 March 2013: 16:00 UK time for UK applicants, 24:00 IST for Indian applicants

A **Frequently asked Questions** document can be found in the related links section: http://www.bbsrc.ac.uk/web/FILES/Guidelines/fadh-fag.pdf





BACKGROUND TO THE CALL

Endemic and exotic diseases of farmed animals have significant global impact in terms of high economic costs and animal welfare, and reducing this impact is of major importance. In addition, emerging pathogens are increasingly recognised as a threat to biosecurity, public health and food security. BBSRC and DBT recognise that each organisation has made significant investments in livestock disease and health research; moreover each organisation wishes to strengthen and diversify their portfolios by combining the research strengths of two countries.

In February 2012, BBSRC and DBT held a joint workshop in New Delhi. The rationale behind the workshop was for invited experts, in different areas of research from India and the UK, to come together to discuss the relative research strengths, and gaps, that exist in different areas of livestock research within the two countries. The ultimate aim of the workshop was to identify areas of complementarity and synergy which could form the basis of future collaborative joint working between the UK and India. Further information about the workshop including workshop report can be found here: http://www.bbsrc.ac.uk/web/FILES/Guidelines/fadh-workshop-report.pdf

The workshop identified specific research areas where there would be particular merit, and benefit to both countries, in developing joint collaborative research projects relevant to underpinning control measures and novel technologies to combat infectious diseases.

The Programme is focussed around the 3 priority areas and 2 cross-cutting themes agreed at the workshop (see **Scope of the Call**, below).

For information about animal disease research supported by BBSRC please see http://www.bbsrc.ac.uk/funding/priorities/fs-animal-health.aspx

For information about livestock disease research supported by DBT please see http://dbtindia.nic.in/index.asp

Specific Objectives that underpin the FADH Initiative are:

- To support high quality collaborative scientific research aimed at novel underpinning control measures and technologies to combat infectious diseases of farmed animals, supported by a strong understanding of host/pathogen biology and epidemiology.
- To enable academic research teams within India and the UK to benefit from international collaboration thereby developing collaborative research that would add value to ongoing research and would not be possible by using existing mechanisms.
- To use resources provided by BBSRC and DBT in a co-ordinated manner to provide access to skills, expertise, existing equipment and infrastructure including national facilities for mutual benefit.





SCIENTIFIC SCOPE

FADH will support high-quality basic and strategic biological and biotechnological research into infectious diseases of farmed animals (ruminants, pigs, poultry, and farmed fish). For the purpose of this Call, infectious diseases include infestations of animals by "pests", i.e. internal (helminth) or external (arthropod) parasites, as well as infections by viral, bacterial, protozoal or fungal pathogens.

The aim of FADH is to exploit recent scientific advances, including the rapid expansion of genetic sequence data available for both pathogens and hosts; to develop new generation tools and underpinning control measures to improve the ways in which diseases of farmed animals can be controlled in order to improve their health, welfare and productivity.

The focus of the call will be on diseases that are endemic or potentially emerging in the UK or India and that have significant economic and social impacts (e.g. on food production, livelihood, trade in animals or animal products) or a substantial effect on animal health and welfare. The scale and extent of the impacts of the disease to be studied, and the potential of the research to address those impacts, will be an important criterion in the assessment of research proposals. Therefore, applicants should set out the economic, social and environmental context of the project to demonstrate the relevance and potential impact of the proposed research.

The call for proposals will be focussed around three priority areas and two underpinning, cross-cutting themes identified at the workshop.

Projects that take a "holistic" approach by integrating cross-cutting themes within a priority area are particularly welcome.

Priority Areas

New Generation Vaccines: Vaccines are pivotal to the control of many livestock diseases. Recent technological advances and detailed knowledge of immunology, molecular biology, microbiology and biochemistry can be exploited to generate novel vaccines. Subunit, recombinant, and DNA vaccines are rapidly gaining scientific and public acceptance as the new generation of vaccines and are seriously considered as alternatives to current conventional ones. Some of the research needs highlighted at the workshop are:

- Using genomic and proteomic approaches to design novel vaccines
- Thermo-stable vaccines
- Novel vaccine vectors and novel and easy-to-use delivery systems
- DIVA vaccines to differentiate infected from vaccinated animals and reduce the potential for asymptomatic carriers to spread disease
- Long lasting vaccines that induce an early onset of immunity (e.g. for emergency vaccination)
- Multivalent vaccines to reduce the number of inoculations, handling costs and increased coverage
- Understanding variation in host response to vaccines

Genetics of Host Disease Resistance: India has a wide variety of native breeds and immense genetic diversity. The UK has major expertise in genomics and host genetics.





Exploiting current advances in genomic technologies would help dissect host variation and its role in the incidence and impact of diseases. Research needs include:

- Understanding molecular basis and mechanisms of genetic resistance to disease
- Understanding species and strain difference in disease resistance and distinguishing resistant genotypes
- Technologies that enable creation and/or exploitation of resistant phenotypes and biomarker discovery

Novel Diagnostic Tools: Effective disease control requires rapid and accurate detection coupled with a fast and effective response to an outbreak. The use of effective diagnostic tests for surveillance purposes and for the rapid confirmation of disease outbreaks is essential. Research needs include developing:

- Novel, robust, low-cost and effective tools, especially to monitor epidemiology of disease and for use in the field and regional laboratories Rapid and sensitive methods for differential diagnosis (DIVA diagnostics - parallel development of vaccine and test)
- Diagnostic platform to assess multiple conditions or pathogens

Cross-cutting Themes

Epidemiology and Modelling: Research needs include:

- Predictive and real-time epidemiological modelling of diseases, evolution of infectious agents and transmission dynamics (including infectivity and host range)
- Conventional, descriptive and molecular epidemiology to map pathogen flows, distribution and diversity, disease burden, disease reservoirs
- Epidemiological studies of risk factors e.g. ecological changes and other socioeconomic factors

Investigating Pathogen Biology at the Molecular Level: A basic understanding of the biology of pathogens is essential for development of effective prevention and intervention strategies. For example:

- Better knowledge of pathogens, their (intermediate) hosts, diversity, virulence and drug sensitivity (including genomic approaches to understand the expression pattern and role of individual genes in colonisation, pathogenesis and transmission; host's immune response; transmission pathways and host specificity)
- Mechanisms of amplification and persistence of pathogens in host and environment
- Basic immunological research to understand susceptibility and resistance to infection

Applications in priority areas should be able to demonstrate that there is already sufficient information regarding epidemiology and pathogen biology to justify the work that is planned, and applications that focus on a cross-cutting theme should indicate how the information they generate would facilitate work on the priority areas.

Additional Factors to Consider

Projects that employ cutting edge technologies including: genomics, systems biology and synthetic biology are particularly welcome, as are projects that reach across the boundaries of individual science areas and employ multi-disciplinary teams.





Working with Industrial partners will be strongly encouraged, where relevant to the research; however, neither BBSRC nor DBT will provide funding for such collaborators. Such partnerships will be welcome provided they come with contribution in kind.

Applicants considering developing research projects within the overall topic of infectious diseases of farmed animals, but outside the key priority areas outlined above are strongly advised to contact BBSRC or DBT at an early stage of the project development and before submitting the proposal.

Exclusions

This call will **not** support research projects that focus:

- Solely on developing pharmaceuticals and anti-microbials as control measures
- Solely on disease surveillance systems
- On aspects of animal health that are not related to infectious disease
- On diseases that are not of importance in ruminants, pigs, poultry or farmed fish
- Solely on model species with no translation to target animals

The funders reserve the right to withdraw applications that do not fit the scientific scope of the call.

APPLICATION PROCESS INCLUDING HOW TO APPLY

A. Eligibility to apply

Each collaborative research proposal must involve eligible applicants based in India and the UK with a minimum of one applicant per country. The principal investigator (PI) from India and the PI from the UK will act as the project coordinator for their country and the liaison point with DBT and BBSRC respectively. It is the responsibility of the project coordinators from each country to ensure that all named co-Investigators are eligible. Applications involving ineligible applicants, from either India or the UK, will result in the whole application being withdrawn.

UK based applicants will apply to BBSRC and Indian based applicants will apply to DBT for funding. All applicants must adhere to national eligibility rules for research proposals as set out by BBSRC and DBT.

BBSRC applicants:

Research supported by BBSRC must be in BBSRC's scientific remit and for the purpose of this Call, infectious diseases include infestations of animals by "pests", i.e. internal (helminth) or external (arthropod) parasites, as well as infections by viral, bacterial, protozoal or fungal pathogens.

Standard BBSRC rules for eligibility will apply. Full details of eligibility conditions can be http://www.bbsrc.ac.uk/funding/apply/eligibilitythe **BBSRC** website: found on and BBSRC Research Grants: The Guide overview.aspx in http://www.bbsrc.ac.uk/funding/apply/grants-guide.aspx





UK Applicants and co-applicants should be from Institutions that are eligible to receive BBSRC managed mode funding and individual applicants **must** meet with BBSRC eligibility criteria (see paragraph 3.1 of the BBSRC Grants Guide). Applications with non-eligible applicants will be withdrawn from the call

Applicants must ensure that <u>all</u> of the proposed research, both that in the UK and in India, will comply with the principles of BBSRC's and other UK funders' common guidance on "Responsibility in the use of animals in bioscience research" http://www.bbsrc.ac.uk/organisation/policies/position/policy/animals-in-bioscience-research.aspx. In particular, UK Institutions should be aware of the following aspect of the guidance relating to research or collaboration outside the UK:

"When collaborating with other laboratories, or where animal facilities are provided by third parties, researchers and the local ethics committee in the UK should satisfy themselves that welfare standards consistent with the principles of UK legislation (e.g. the Animals (Scientific Procedures) Act 1986), and set out in this guidance, are applied and maintained. Where there are significant deviations, prior approval from the funding body should be sought and agreed."

Applicants should also be aware DBT's guidance:

"Institutional and national biosafety guidelines for studies related to usage of infectious agents and/or handling of animals infected with such organisms must be followed. Regulations that control the use of non-human animals for scientific experimentation in India and UK should be considered while preparing the project proposals. Mode of treatment, restraint, alleviation of pain and suffering using appropriate anaesthesia or medication with detailed description of procedures etc. should be provided in the proposal. Handling and disposal of infectious organism or infected animals should also be followed according to local (city) and national norms. Investigators should provide a signed statement that 1) they will follow guidelines for use of animals for research available in UK and in India and that 2) before initiation of the proposed research work, appropriate approvals from Institutional and/or central animal ethics and biosafety committees will be obtained for experimental protocols to be adopted in their projects."

Funding will be awarded on the basis of full economic costs as described on the BBSRC website. PhD students will not be funded as part of this call.

Special schemes such as the New Investigator Scheme, Industrial Partnership Awards and Industrial LINK will **not** apply to this call.

Changes in how equipment is requested on Research Council grants came into effect in May 2011 in response to the Wakeham Review. Applicants requesting items of equipment costing over £10k will be required to follow the guidelines as set out on the BBSRC website. http://www.bbsrc.ac.uk/funding/apply/research-equipment-guidance.aspx

For applications involving work at more than one BBSRC eligible institution, funding for a Joint Research Project may only be requested by submitting one joint application from the lead institution. The principal applicant must be from the lead institution and will be the person to whom all scientific correspondence is directed. All other applicants and their affiliations must be entered on the application form. The lead institution will be responsible for the distribution of funds to the other named BBSRC eligible institutions. Failure to adhere to this requirement may result in the project being withdrawn.





Only costs associated with the UK project participants should be entered on the BBSRC proforma. Overall project costs should be entered in Part A of the Case for Support: http://www.bbsrc.ac.uk/web/FILES/Forms/fadh-case-support.doc.

DBT applicants:

The standard DBT rules for eligibility will apply. DBT will fund eligible Indian academics at 100% of the full economic costing in terms of equipment, consumables, contingency, overheads and manpower salary costs employed under the project. PhD students will be funded as part of this call as per normal DBT guidelines.

Only costs associated with the Indian project participants should be entered on the DBT finance proforma which should be downloaded here: http://www.bbsrc.ac.uk/web/FILES/Forms/fadh-dbt-proforma.doc

Overall project costs should be entered in Part A of the Case for Support. http://www.bbsrc.ac.uk/web/FILES/Forms/fadh-case-support.doc

B. Structure of proposals; how to apply and format of proposals

Both UK and Indian based applicants must complete the necessary components required to submit an application to their national funding agency. *However, the Case for Support submitted to both BBSRC and DBT must be identical and must be submitted using the specific template developed for this call, adhering to page length restrictions as specified within the template.* The Case for Support template can be found within the related links section: http://www.bbsrc.ac.uk/web/FILES/Forms/fadh-case-support.doc. Failure to use the specific template will result in the application being withdrawn.

Proposals must be written in English using Arial, Helvetica or Verdana typefaces (or an equivalent) and a minimum font size of 11.

BBSRC applicants must apply using Je-S by completing a standard BBSRC grant application along with their customised Case for Support document (see below).

Within Je-S, under "document type and scheme" please select "standard"; within call / mode please select "13 BBSRC/DBT Joint Call in Farmed Animal Diseases". The application should include all standard attachments (Pathways to Impact statement, Applicants' CVs (up to 2 pages) these can be the same as those included in the case for support, Letters of Support; and Justification of Resources). Applicants should refer to the Je-S help text https://je-s.rcuk.ac.uk/Handbook/index.htm#pages/JeSHelpdesk.htm

Applicants should also attach the completed copy of the DBT finance proforma http://www.bbsrc.ac.uk/web/FILES/Forms/FADH-dbt-proforma.pdf as type "other attachment".

DBT applicants: Standard eligibility norms and terms and conditions of DBT will apply. In addition to the custom Case for Support, DBT applicants should complete and submit both a hard copy and an electronic version (soft copy) of the DBT finance proforma: http://www.bbsrc.ac.uk/web/FILES/Forms/FADH-dbt-proforma.pdf. The electronic version (soft copy) should be e-mailed to Shailja Gupta (shailja@dbt.nic.in) by the closing date: 6 March 2013.





Applicants should ensure that the DBT finance proforma is submitted as an additional attachment with the UK application via Je-S.

Case for Support

The scientific case for support submitted by Indian and UK applicants must be identical and must be submitted using the specific template developed for this call, http://www.bbsrc.ac.uk/web/FILES/Forms/fadh-case-support.doc adhering to page length restrictions as specified within the Case for Support document. The document should be completed using: Arial, Helvetica or Verdana typefaces (or an equivalent) and a minimum font size of 11. A minimum of single line spacing and standard character spacing must be used. Margins must not be less than 2cm.

The Case for Support template can be found within the related links section: http://www.bbsrc.ac.uk/web/FILES/Forms/fadh-case-support.doc.

In addition to the assessment criteria set out under the section 'Peer Review', applicants should carefully demonstrate within the Case for Support that their projects:

- Represent true collaborative partnerships between transnational research teams; the added value of such collaborations should be clearly highlighted within the proposals.
- Highlight the relevance and benefits to both the UK and India.
- Contain an integrated work plan and an equal commitment to the project (in terms
 of hours dedicated to the project rather than project costs). Projects that appear to
 be working in parallel with little interaction between the countries will not be
 supported.

Projects will be funded for a maximum duration of 3 years, and applicants who receive funding from this call must be prepared to contribute to workshops and / or other dissemination type activities associated with this call.

The Case for Support (template available at http://www.bbsrc.ac.uk/web/FILES/Forms/fadh-case-support.doc should comprise the following Sections:

1. General Information (up to 3 sides of A4) comprising:

- Project title.
- Names, full affiliations and contact details, including e-mail addresses, of the lead investigators for each country.
- Names of all co-Investigators and affiliations.
- Short summary of project (up to 4000 characters).
- Project aims (up to 4000 characters).
- Summary of resources required for the project: total cost of project, (in £ sterling), including UK and Indian Partners.

2. **Detailed Scientific Information** to include:

- **a. Previous Track Record** (up to 4 sides of A4) describing:
 - Track record of all applicants, and where relevant, experience of conducting international, collaborative, research.





- Information relating to the project's host institutions including access to specific infrastructure and equipment required to undertake the project.
- Details of other National Facilities, outside of the project's host institutions that would be required to undertake the project.

b. Detailed description of project (up to 16 sides of A4 in total (17 if using animals); page limits below cannot be exceeded or combined)

- i. Overall aims and objectives of project (max 1 side of A4).
- ii. Description of the current landscape relevant to the project in India, the UK and other countries (max 1 side of A4).
- iii. Detailed project description highlighting the novelty and originality of the project, anticipated outcomes and potential impacts. The economic, social and environmental context of the proposed biological research should be described in order to demonstrate its relevance and potential impact. The description should indicate where project participants fit to the specific work packages (up to 8 sides of A4).
- iv. Added value of the proposed collaboration, including a description of how the project will be managed, communication strategies, data management and data sharing across the project and management of intellectual property (up to 2 sides of A4) see data management, below.
- v. A description of dissemination and knowledge exchange mechanisms along with potential routes to translate the outcomes from the project into genuine impacts that benefit the UK and India, including interaction with the private sector, policy makers and other relevant stakeholders (up to 1 side of A4).
- vi. A Gantt chart, or diagrammatic work plan, for the project including milestones (1 side of A4).
- vii. A description and justification of the resources requested for the project (up to 2 sides of A4), applicants should ensure that sufficient travel and subsistence costs are included within their applications to undertake the project. Additional costs should be included to cover the costs of travelling to two workshops: one held within India and one within the UK, see **Dissemination Events**, below.
- viii. Applications including the use of animals should (up to 1 side of A4) justify the animal use, including appropriate power calculations, as laid out in paragraph 4.37 of the BBSRC grants guide, http://www.bbsrc.ac.uk/funding/apply/grants-guide.aspx.

In addition, applicants should give full consideration, within the 17 page limit described above, to the following:

Data Management

Applicants to this call should give full consideration to the practical requirements for data sharing both within the research teams and to the wider community and describe how this will be conducted. Applicants should ensure that they have requested appropriate resources for data management and sharing.

Dissemination Events

Successful applicants will be required to disseminate the outcomes of their projects at a mid-term and final dissemination event, one of which will take place in India and the other in the UK. Applicants (both UK and Indian) should ensure that they include sufficient travel costs for two to three members (including post doctoral researcher(s) within their projects to





participate in such events. No other funding will be made available from the BBSRC or DBT for attending these events.

3. Description of the Project Teams:

 Brief CVs of each named investigator (Indian and UK), including the three most significant, recent, publications (maximum of 2 pages per investigator).

Additional Information

Funding Period and Budget

BBSRC and DBT have each earmarked up to £5M for this call. Whilst no upper cost limit per project is stipulated, BBSRC and DBT envisage funding multiple projects under this call. Projects should be up to a maximum duration of 3 years. All budget items must conform to national rules relevant to BBSRC and DBT and be fully justified.

Additional Collaborators

Collaborating partners from industry and / or partners from other countries are strongly encouraged where relevant to the research; however, neither BBSRC nor DBT will provide funding for such collaborators. Such partnerships are welcome provided they come with contribution in kind. Applicants may include Letters of Support to accompany their application. Applicants are advised to restrict such letters to genuine collaborators.

PEER REVIEW

BBSRC and DBT will conduct a rigorous and fully integrated peer review of the projects, using reviewers from India, the UK and other countries. Applicants will be given the opportunity to respond to reviewers' comments. Such responses will be coordinated across the project and submitted by the UK project coordinator. Applications will then be assessed by an international peer review panel comprising experts from India, the UK and other countries. In addition to all relevant application documents, the panel will also have access to reviewers' comments and applicants' responses. The following criteria will be taken into consideration:

- Scientific Excellence
- Timeliness and Promise
- Relevance to the UK and India
- Transnational added value of the project
- Economic and social benefits, including potential impacts
- Project Management, data sharing, data dissemination strategies
- Cost-effectiveness
- Fit to the call's research priorities

Project Administration





The financial administration and contacting of successful applicants will be performed at the national level, where grant announcements and funding announcements will be issued according to national rules.

INTENTION TO SUBMIT

For each project under preparation the proposed UK and Indian principal investigators **must** submit a complete Intention to Submit form to their respective funding agencies, in order to then submit a full proposal. Any proposal submitted without an advance Intention to Submit form will not be accepted. The form can be downloaded from the related links section: http://www.bbsrc.ac.uk/web/FILES/Forms/fadh-i2s-proforma.doc.

The form should be returned to <u>FADH@bbsrc.ac.uk</u> and <u>shailja@dbt.nic.in</u> by 21st January 2013.

The Intention to Submit form will be used for the following purposes:

- To provide information about project numbers and the response to the call.
- To enable BBSRC and DBT to contact the UK and Indian project coordinators to assist with submission queries.

TIMETABLE

- Deadline for Submission of Intention to Submit form: 21 January 2013
- Deadline for submission of full proposals is 6 March 2013.

For applications to BBSRC, proposals must be submitted electronically by the Je-S system by 16:00 UK time on 6 March 2013.

DBT Applicants should submit both hard copies and an electronic version (soft copy) of the proposal to DBT. The electronic version (soft copy) should be e-mailed and hard copies should be sent to Shailja Gupta (shailja@dbt.nic.in) by the closing date: 24:00 IST 6 March 2013.

Note: Applicants should ensure that the completed DBT finance proforma http://www.bbsrc.ac.uk/web/FILES/Forms/fadh-dbt-proforma.doc is submitted as an additional attachment with the UK application *via* Je-S.

Applications will be subject to full peer review and will be assessed and ranked for funding by an International Assessment Panel in September 2013.

CONTACTS

BBSRC (UK)

Scientific, Eligibility and Peer Review queries: FADH@bbsrc.ac.uk

DBT (India)

Scientific and administrative queries: Shailja Gupta (shailja@dbt.nic.in)