

Grant Writing for Agri Research

Ruth Sandland – Head of Research Grant Development, Rothamsted Research

- *to deliver knowledge, innovation and new practices to increase agricultural productivity within sustainable systems.*



TIGR²ESS: Transforming India's Green Revolution by Research and Empowerment for Sustainable food Supplies

A programme to develop innovative research to bring resilience, equal opportunities and diversity to the food system in India. TIGR²ESS combines capacity-building & fundamental research with a development agenda for rural impact and empowerment in India.

<https://tigr2ess.globalfood.cam.ac.uk/>



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About Ruth Sandland

Head of Research Grant Development, Rothamsted Research, UK
Research Grants Office

Expertise in:

- **Over 15 years of experience of supporting the development of research grants**
- **Expertise in areas related to identifying & costing research funding**
- **At Rothamsted, leads and manages support service for the planning, development and delivery of the institute's externally funded research activities**
- **Provides strategic & practical expert advice to research leaders**

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Before we get Started

- Ruth will walk us through this presentation for **approximately 45 mins.**
- **You are welcome to ask questions** by clicking on the Q&A tab at the bottom of your screen. She will answer as many queries as she can following her presentation.
- You can choose to **either make your questions visible to everyone** or only send them to the panellists
- You can choose to ask questions anonymously or publicly to the group
- If you have any issues with audio, visuals etc. please write to the panellists in **the Chat Box**
- Please note that **we can only take text based questions** as this is not a call based webinar and your mic will be muted throughout the presentation

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Today we will look at:

1. Developing the research idea
2. Finding collaborators
3. Choosing the right funding opportunity
4. Effective proposal writing
5. Understanding the differences between output, outcomes and impact
6. Developing a budget and timelines
7. Examples of funding available for early career researchers



7 Steps for Success

1. Formulate the idea
2. Find a funder
3. Choose the type of funding you need
4. Write the application
5. Cost the application
6. Get peer review
7. Check, check and double check



Developing the Research Idea

You need a big idea – from where?

- **Gap analysis**
- **Discussions with peers**
- **Conferences**
- **Follow on from your thesis or pilot data**
- **Public initiatives and other drivers**

IDEALLY make sure you have left enough time to write a quality application, usually around 3-6 months

“Doing one piece of research usually leads to the revealing of many other questions or gaps in knowledge, and so that then forms the basis of a new research idea.”

“Just about every famous person I have had the chance to ask (including Nobel Laureates) just stumbled on their idea. Difference is they realised the significance and invested in it”

“If you are following a line of reason, and things get harder as you continue, you probably need to think of a better idea. An idea that makes it easier to progress (e.g. suddenly connects a whole bunch of things that seemed unconnected) and throws up new insight, might be the one to continue with.”

Developing the Research Idea



• Is your idea novel?

- *Are there other researchers in this field? Are you building on their research or is your idea completely new?*

• Is it proving or disproving a known theory or process?

- *Has it been done before, what work do you know of in the field?*

• Does it have impact?

- *Who will it affect, both within and outside of academia? Is the purpose to create impact or will it be secondary? Who is your audience?*

• Is it risky?

- *Could it fail? Could the project move in an unpredictable direction?*

• Can you do it alone?

- *Do you need a Co-investigator/ Mentor/ Industry/ Collaborators?*

• Is it ready?

- *Do you need pilot study data first?*



Finding Collaborators

Who?

1. Identify the TYPE of collaboration you need?

- Industry
- Charitable bodies
- Other academics – internal or external
- Expertise – contractors
- Other country participants

2. What do you need your collaborators to do?

- Co investigate
- Mentor
- Offer expertise
- In kind funding
- Sit on an advisory group

Finding Collaborators

How?



Choosing the Right Funding Opportunity

What type of funding will you need?

- Depending on how many people, time, consumables, outputs etc you need will determine the RIGHT type of funding



Where can I find funding opportunities?

- Use search engines
- Sign up to funder newsletters

Do your research

- Has this funder funded your kind of research before?
- Has research in this area been funded before?

What can I do?

- Are you eligible for the call or do you need support?

Effective Proposal Writing

Independent Research

- form research questions around researcher's own interests and data gathered

Vs.

Funded Research

- research question meets aims of the funder
- Even in responsive mode, funders will have strategies & objectives that they are hoping to achieve

Effective Proposal Writing

What funders look for:

- articulate the research question, aims and objectives clearly,
- provide appropriate background, with recent references,
- be manageable within time and resources, provide value for money,
- demonstrate excellence and impact,
- know what it wants to achieve (be linked to specific outcomes),
- be seen to make a contribution to the field and non academic impact,
- have a clear methodology,
- include appropriate collaboration where necessary,
- have credible academic supervision (relevant people/expertise for all the required skills)

**Why you?
Why this?
Why now?**

Remember that all funders are different.

Take time to read your chosen funder's ethos and funding priorities – are you & your research a good fit?

Effective Proposal Writing

7 steps to success

1. Formulate the idea
2. Find a funder
3. Choose the type of funding you need
4. Write the application
5. Cost the application
6. Get peer review
7. Check, check and double check

Each funder will have specific guidance on how to construct your application and what headings to use,

Let's look at some common sections for many funders.

Please remember to check the guidance notes of the fund you are applying to for scheme specific details.

Abstract/Lay summary

- Briefly summarise the whole research project in a language that both experts and non-experts would understand
- Be clear, concise and do not lift this text from anywhere else in the application
- Remember that if successful, this is what will probably appear on the funder's website as a description of your project

Background & context

- Introduce the topic and explain its academic and industrial context.
- Demonstrate a knowledge and understanding of past and current work in the area both in the UK and Internationally (with references)

Research questions/Aims & objectives

- Set out the research idea or questions.
- What contribution will your work make to the current body of knowledge in your area of study?
- Why is it important? Why now?
- Identify the overall aims of the project and the individual measurable objectives.

Methodology

- Detail the methodology to be used.
- Why have you chosen this methodology?
- Why is it more appropriate than others?

Project management

- How will the project be managed?
- What will be your role and the role of other members of the team?
- When planning who will be involved (PI, Co-I, Research Assistant, Technician, etc), ensure that the composition of the team is such that all required skills and competencies are covered.
- What is the timetable for the project and is it realistic?
- Can you demonstrate experience of running a research project and bringing it to completion? If you cannot, can your Co-I?

Understanding differences between output, outcomes and impact

Outputs tell the story of what you produced or your data

The most popular output for academics is publications in high impact journals

Outcomes are the events, occurrences, or changes in conditions, behaviour, or attitudes based on the results you have identified

Outcomes are specific, measurable, and meaningful

Example:

McDonald's sells approximately 33 million hamburgers a day. Five Guys sells approximately 350,000 burgers daily. Based on this information, who makes a better burger? Would you conclude that McDonald's makes a better hamburger based on this data alone? Of course not! You would want data around quality, nutrition, and taste before making this decision.

*You cannot merely **count** hamburgers as **proof of their effectiveness or impact**.*

*In this case the hamburgers are **outputs**, created at the end of a process. Outputs demonstrate what you have produced. Output measures **do not** address the **value** or **impact** of your services for your clients.*

*The **outcome** is the level of performance or achievement that occurred because of the activity or services the restaurant provided. Outcomes are a more appropriate indicator of effectiveness. **Outcomes quantify performance and assess the success of the process**. So in this example the outcomes could be the level of quality of the burgers, as decided by the customer, and how much it filled them up.*

<https://measurementresourcesco.com/2014/02/02/outputs-vs-outcomes-matters/>

The **research impact** is the effect & influence of the results, and is difficult to measure – its both academic and non academic (societal)



Your data or techniques could affect the way that data is managed in the future, or could be a basis for further projects to build on

That same data could improve practice in the field affecting both farmers and end users

Developing a Timeline

Milestones

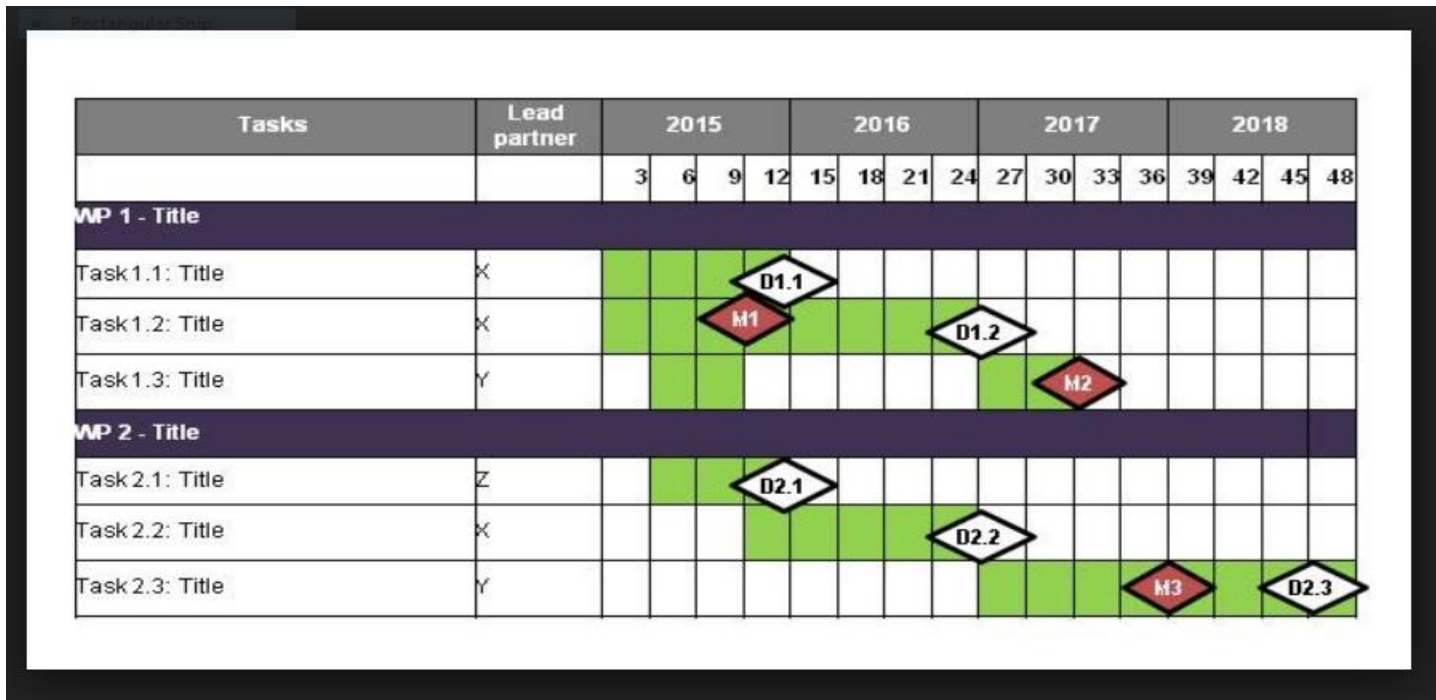
- Key stages of the project
- Measurement of progress

Deliverables

Result of a milestone – measurable, such as a data set, report, publication etc

Timings

Shows what happens month to month, year to year



How can I organise my project – depends on the duration

- By work packages
- Month by month
- Pilot - Full

Developing a Budget

What costs are allowed under the scheme

- Is there a limit on funding?
- What costs are included and excluded?
- Are overheads covered?
- Do you need to add inflation or VAT?

What is the full cost of the project?

- Staff time – both employed and existing
- Equipment
- Research Consumables
- Recruitment
- Impact activity costs
- Travel and subsistence
- Open access
- Relocation
- Subcontracting

How much will my Institution or Institute need to support?

- Is the project fully funded?
- Talk to your Head of Department before continuing

Are there other places I can apply to, to help boost my funding?

- In kind funding from project partners
- Open access funds
- Conference reductions - present

Developing a Budget

Ask yourself – is my project good value for money?

- Is the amount I am requesting balanced with the number of outputs?
- Have I allowed enough for impact related activities?
- Have I included enough costs to exploit the outcomes?
- Have I recruited the right amount of staff? Can I offer them personal and career development?
- Have I used the right estimates for travel?

Example

- Three year project at £250k/Rs 2.5 crores
- Expectation of 3 publications
- Holding 2 non-academic events for stakeholders – start and end
- Full time employment and progression for 1 post doc
- Industry partner offering space for events
- Impact related costs that best meet the needs of the stakeholders– i.e. a blog/ marketing material/ links to radio or tv well costed and identified

Getting Peer Reviewed

1. What is Peer Review?

Peer Review of a research application is where another person, not usually involved in the bid, reads it for you and comments constructively.

2. Who should do it?

- It depends! Its worth getting a colleague not in your area of research to read the proposal, as well as a senior scientist that is. Those on the review board of the funder will not necessarily be experts in your field.
- Make sure if you are asked to list reviewers on the application form that you do not ask them to look at the application in peer review before you submit, as it can be a conflict of interest.

3. Why is it important?

- When you have spent a great deal of time on a bid its difficult to be objective around improvements and changes, its also very easy to become immersed in your field which can make it difficult for non experts to understand.
- Often the funder asks you to address a number of sections and it is easy to miss answering what they need.
- Flow can be hard when writing an application and a reviewer can help you achieve that.

Take the feedback and apply it constructively - seek help from your Research Office to find reviewers

Quality Check- Final Grant Application

Now that you have written your application, go back over it and ask yourself the following...

Have I:

1. Clearly formulated the problem?
2. Considered context and demonstrated the way in which my work will build on existing research and make a contribution to the area?
3. Established appropriate aims and objectives?
4. Provided a realistic, well thought out research design, reasoned explanation of the scale, timing and resources necessary?
5. Given a full and detailed description of the proposed methods, including a clear and systematic approach to the analysis and/or data collection?
6. Thought about and addressed ethics? (Don't wait until you receive the award to consider this as you may run out of time.)
7. Identified potential users (particularly outside the academic community) and how to engage them?
8. Recognised and planned for all the skills and competencies required ensuring they are reflected in the research team?
9. Anticipated potential difficulties? Shown that I have recognised these and discussed how they would be handled?
10. Provided a bibliography? This will be used in the selection of referees and indicate your familiarity with the theoretical grounding and current state of your field. Where there is genuinely little or no relevant literature, explain this fully,
11. Fully defended my chosen research design and made it clear why others are not appropriate?

Check the details! Details matter!

- Check page/word limits, font size and style, plain English, grammar and spelling and the presence of required attachments.
- Applications may be rejected in early stages if not within guidelines (eg over word limit)

Examples of funding available for early career researchers

Fellowships

https://royalsociety.org/grants-schemes-awards/grants/newton-international/?gclid=Cj0KCQjw9pDpBRCKARIsAOzRzisVXnGvStu703XKsWZEH3qRjcFgmjSrGLh44Rmh5IJIZf7Tg2_wAlaAjq_EALw_wcB

The Newton International Fellowship Scheme was established in 2008 to select the very best early career postdoctoral researchers from all over the world, and enable them to work at UK research institutions for two years. Newton International Fellowships are made available by the Royal Society, British Academy and Academy of Medical Sciences. The partnership with India is the Newton-Bhabha Fund

India Alliance - The proposed research should fall within the India Alliance's remit which is to support biomedical research that is relevant to human and animal welfare. This is a mentored Fellowship for promising newly qualified postdoctoral researchers to attain independence

<https://www.indiaalliance.org/fellowships/early-career-fellowships>

The EMBO Long-Term Fellowships are awarded for a period of up to two years and support post-doctoral research visits to laboratories throughout Europe and the world. International exchange is a key feature in the application process.

<http://www.embo.org/funding-awards/fellowships/long-term-fellowships>

Travel and Networking

Newton Researcher Links Workshops bring together early-career researchers from the UK and a partner country to make international connections that can improve the quality of their research. Once funded, grants are available for early-career researchers in the UK and the country hosting the workshop to attend – India coming soon!

<https://www.britishcouncil.org/education/science/current-opportunities/newton-fund-researcher-links-workshops>

First Grants

HFSP - Awarded to teams of researchers (2 or more countries), all of whom are within the first five years after obtaining an independent laboratory (e.g. Assistant Professor, Lecturer or equivalent). Applications for Young Investigators' Grants will be reviewed in competition with each other independently of applications for Program Grants.

<https://www.hfsp.org/funding/hfsp-funding/research-grants>

Science and Engineering Research Board - Early Career Research Award scheme aims to provide quick research support to the young researchers who are in their early career for pursuing exciting and innovative research in frontier areas of science and engineering

<http://www.serb.gov.in/ecr.php>

Main Indian Funders

- BIRAC (<http://www.birac.nic.in>)
- CSIR (<http://www.csir.res.in>)
- Department of Biotechnology (<http://www.dbtindia.nic.in>)
- Department of Science and Technology (<http://dst.gov.in>)
- Gates Foundation (<http://www.gatesfoundation.org>)
- HFSP (<http://www.hfsp.org>)
- ICMR (<http://www.icmr.nic.in>)
- Newton Fund (<https://www.newtonfund.ac.uk>)
- SERB (<http://www.serb.gov.in/home.php>)
- Wellcome Trust DBT India Alliance (<https://www.indiaalliance.org>)

Personal support schemes for ECR's

- SERB National Postdoctoral Fellowship (<http://www.serb.gov.in/npdf.php>)
- DBT Innovative Young Biotechnologist Award (<http://www.dbtindia.nic.in/funding-mechanism/awards/#4>)
- DST Women Scientist Programs (<http://www.dst.gov.in/scientific-programmes/scientific-engineering-research/women-scientists-programs>)
- Wellcome Trust DBT India Alliance ECF (<https://www.indiaalliance.org/fellowships/early-career-fellowships>)
- EMBO Long-term Fellowship (<http://www.embo.org/funding-awards/fellowships/long-term-fellowships>)
- HFSP Post-doctoral Fellowships (<http://www.hfsp.org/funding/postdoctoral-fellowships>)
- Newton International Fellowships (<https://royalsociety.org/grants-schemes-awards/grants/newton-international/>)
- SERB Overseas Postdoctoral Fellowship (<http://www.serb.gov.in/pdfs/what-new/Overseas%20Postdoctoral%20Fellowship%202016-17%20-WebAdvt%20-1-.pdf>)

Personal support schemes for Independent Researchers

- SERB Ramanujan fellowship –(<http://www.serb.gov.in/rnf.php>)
- Ramalingaswamy Re-entry Fellowship –(<http://www.dbtindia.nic.in/funding-mechanism/fellowships-for-scientists/#Rama>)
- Swarnajayanti Fellowships = (<http://www.dst.gov.in/scientific-programmes/scientific-engineering-research/human-resource-development-and-nurturing-young-talent-swarnajayanti-fellowships-scheme>)
- JC BOSE National Fellowships = (<http://www.serb.gov.in/jcfn.php>)
- Wellcome-DBT India Alliance Fellowships (Intermediate/Senior Fellowships) = (<https://www.indiaalliance.org/fellowships/intermediate-fellowships>)

Project Support

- DBT research grants (<http://www.dbtepromis.nic.in/Login.aspx>)
- SERB ECR award (<http://www.serb.gov.in/ecr.php>)
- DST- SERB Core Research Grant (<http://serb.gov.in/emr.php>)
- DST-SERB High Risk High Reward scheme (<http://www.serb.gov.in/hrhrr.php>)
- DST-SERB Industry Relevant R&D scheme (<http://www.serb.gov.in/irrd.php>)
- DST- Nano Mission (<http://www.nanomission.gov.in/>)
- Gates Foundation, Grand Challenges (<https://gcgh.grandchallenges.org/about>)

Collaborative Support

- USAID PEER (<http://sites.nationalacademies.org/pga/peer/index.htm>)
- CEFIPRA Indo- French Collaborative Research Projects (<http://www.cefipraonline.in/CEFIPRA/>)
- Royal Society International Exchanges Program (<https://royalsociety.org/grants-schemes-awards/grants/international-exchanges/>)
- Indo-Australian Partnership Fund (http://www.dbtindia.nic.in/wp-content/uploads/Final_Indo-Australia_11th-Round_Guidelines-.pdf)
- DST- UKIERI UK- India Collaborative grant (http://www.dst.gov.in/sites/default/files/UKIERI-DST%20Call%20for%20Proposals%202018-19_final.pdf)
- HFSP Research Grants (<http://www.hfsp.org/funding/research-grants/information-and-guidelines>)

**Remember – be bold, be
brave, be exciting!**

Any questions?

Thank You

UK Research
and Innovation

