

Achieving Future Research Impact: Guidance for Preparation

Impact Oriented Interdisciplinary Research (IIRG) Programme

Acknowledgements

This hand out is compiled directly from materials presented in Research Excellence Framework (REF) Impact Toolkit [1]. Materials are also borrowed from EI 2018 Australia and many other publicly available resources. All these sources [1-9, and others cited in the text] are gratefully acknowledged.

References

1. H. Tilley, L. Ball, C. Cassidy, Research Excellence Framework (REF) impact toolkit, March 2018
2. EI 2018 Australia
3. Research Services, University of Sheffield <<https://www.sheffield.ac.uk/rs/impact/pathways>>
4. <https://www.sheffield.ac.uk/rs/impact/pathways>
5. <https://mssociety.ca/uploads/files/guide-to-writing-lay-summary-eng-final20130726.pdf>
6. <https://www.sheffield.ac.uk/rs/impact/ref>
7. Many other publicly available resources (including those cited in the text)
8. G. Hall, A. Macdonald and J. Chubb, An introduction to Research Impact, Training Course, UK
9. G. Hall, L. Davies, A. McRae, Tools and techniques for research impact, Training Course, UK

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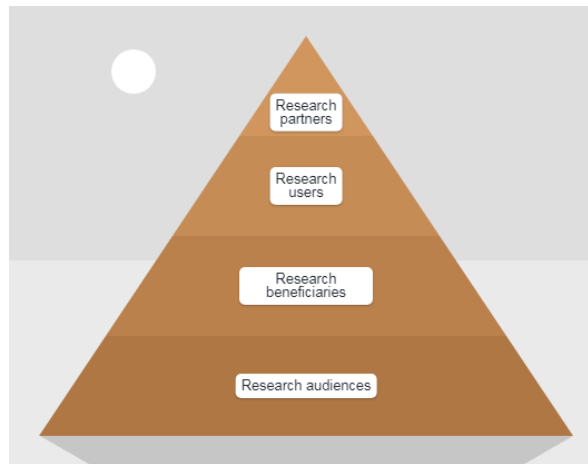
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Glossary

Research partners: Research partners are those stakeholders who are with you all the way through a research project and/or are fundamental to realising your research goals. They may also be key beneficiaries or users of your research – the main difference here is that without them your research would not happen at all. Research partners may provide crucial infrastructure, funds or advice, they may broker access to equipment, staff, participants or those research users who can help you maximise your impact goals.

Research user: For your research to have meaningful, long-term impact you need it to be taken up by someone other than yourself or your immediate peers. Research users play a vital role in disseminating, discussing, adapting, developing and adopting research. They can be found in any sector of society including charities, government departments, industry and special industry groups. Which users you engage with depends entirely on your field of study and the type of impacts you hope to have. For example, translating research from the laboratory to the pharmacy will require researchers from other disciplines, both inside and outside of academia to engage with your research, as well as commercial companies, medical regulators and even pharmacists. A research user is thus an individual, community or organisation external to academia that will directly use or directly benefit from the output, outcome or result of the research. Examples of research users include governments, businesses, non-governmental organisations, communities and community organisations.



Research beneficiaries: It is important to think about those who might be affected either directly or indirectly by your research. For example, imagine that you want to introduce a new therapeutic approach for a chronic but prevalent condition. You would need to engage directly with patients and patient groups but also those who will be impacted indirectly, such as carers, family, even employers or local health authorities.

Stakeholder: A stakeholder is anyone who is affected by or has an interest or stake in a particular issue. Examples of stakeholders include members of local, state, federal or tribal agencies; business leaders and industry representatives; representatives from non-profit groups or other citizen organizations; and individuals from loosely defined user groups, such as local residents or farmers etc.

All research users and beneficiaries could also be considered stakeholders, but not all stakeholders are research users or beneficiaries.

Research audiences: No matter what your research, someone will always be interested in what you do. The general public and the media are always interested in research which gets them thinking and talking, provides new insights or involves cutting-edge technology. They may also want to know more about your research because it intersects with their own interests or needs or has a specific meaning for their demographic, occupation, home town etc.

Engagement: Research engagement is the interaction between researchers and research users and stakeholders outside of academia, for the mutually beneficial transfer of knowledge, technologies, methods or resources.

Alignment: Is the research likely to lead to policy/outcome the stakeholders broadly agree with? Do they share the same sense of potential importance and agree with your approach?

Interest: Are they interested in the issue your research is addressing? Are they committing resources to the issue? Do they want change? Are they speaking about the issue?

Influence: How important are they to making change happen? Are they in a position of authority? Can they put pressure on a decision-maker or others who can make a difference?

PART 1

1. Introduction to Research Impact, Stakeholder Engagement, Research Communication

1.1 Research Impact

Impact is defined as an effect on, or change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia (REF2014).

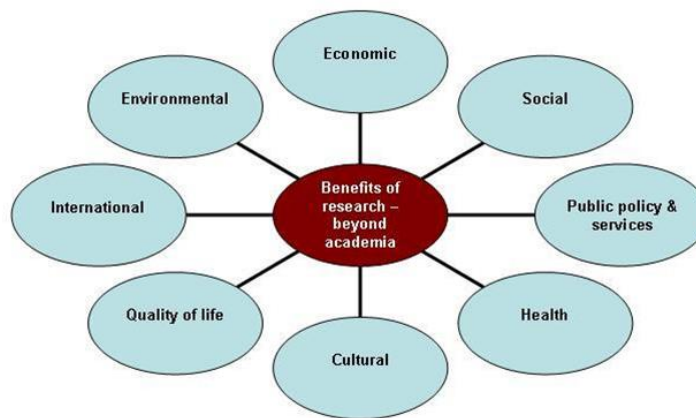


Fig. 1 Impact beyond academia.

Impacts can be manifested in a wide variety of ways including, but **not** limited to: the many types of beneficiary (individuals, organisations, communities, industry, regions and other entities); impacts on products, processes, behaviours, policies, practices and understanding; and avoidance of harm or the waste of resources in the widest sense. Impact of any type may be local, regional, national or international. Some examples of impact (not exhaustive) are given in Annex A as a guide.

To have impact with your research, you need to be clear about what sort of change you want to see and what ‘impact’ means for your research. An impact objective is a statement of how you intend to do this, and it is required by the Pathways to Impact statement and the impact summary, in which you need to outline who will benefit from the research and how. This will also help define a good research communications strategy, to ensure messages from research reach those who can make a difference throughout the decision-making processes. It will determine the types of evidence you will collect during the research and implementation of the communications strategy, and in turn the monitoring of impact will inform the writing of the impact case study.

Start thinking about impact and how you will measure it at the start of your research. This will help you understand and capture impact when it arises. Also, revisit your plan regularly to adjust it as necessary. Your role in achieving impact may not be straight forward. Your influence may be direct or indirect. It may be that you only contribute to broad changes. Consider complexities such as unexpected impact, impact over the longer term, contribution and co-creation, and contextual factors.

Impact objectives revolve around getting your research known and used amongst those who can benefit most from it (ESRC, 2017). Achievement of research impact depends on successful communication, collaboration and interactions with stakeholders (Fig. 2). Most research is done in collaboration with others. Work in partnership, or as part of a coalition.

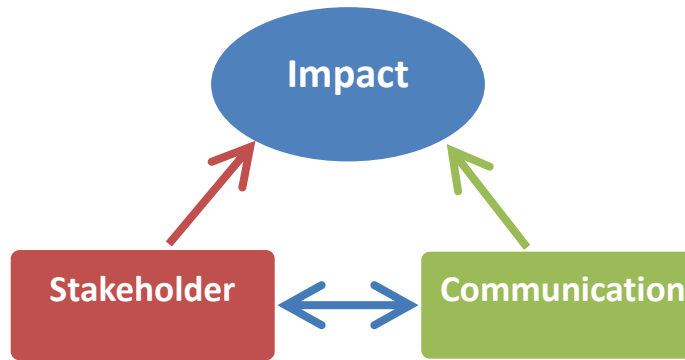


Fig. 2 Impact is achieved through effective communication and working closely with stakeholders.

Having a good understanding of the wider policy context is necessary before you can formulate your impact objective. The Results Chain (Fig. 3) shows the various stages leading up to impact. Achievement of impact is preceded by stages like, activities, output and outcome.



Fig. 3 The results chain.

Examples of inputs, activities, outputs, outcomes and impact are shown in Fig 4. Outputs are the first level of results of research which are direct, immediate and short term. Outcomes are the second level or medium term results. Impact is the long term economic, social, health or environmental consequences of your research.

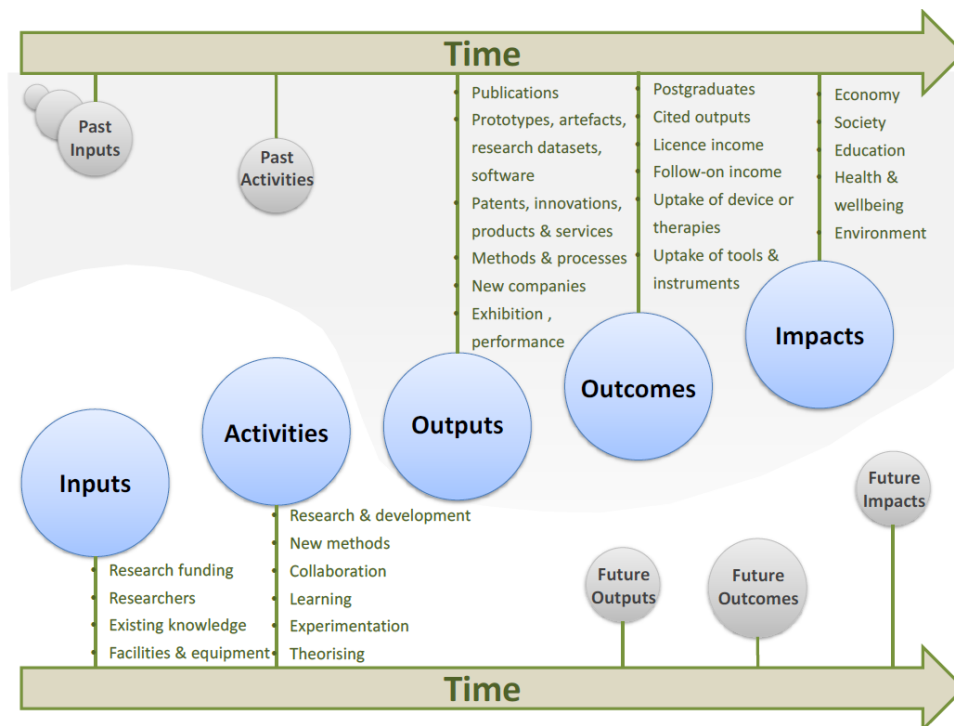


Fig.4. Examples of inputs, activities, outputs, outcomes and impact (University College Dublin Report)

The sphere of influence framework (Fig. 5) is useful to determine what is and what is not within our power to influence at different stages of the results chain. It originates from Outcome Mapping (OM) (Earl et al., 2001) which is concerned with results or 'outcomes' that fall strictly within the programme's sphere of influence. The focus is on changes in behaviour, relationships, actions and activities of the people, groups and organisations you work with directly (Young et al., 2014).

Inputs, activities or outputs within the sphere of control are those where we have complete control over our actions. The sphere of influence is where events are not completely in our control but where we do have the power to change the outcomes (Tsui et al., 2014). On the other hand, the sphere of concern focuses on events occurring over which we have no control. They often represent actions taken by others or the results of a cascading set of external factors. Although this is where the results that really matter lie (such as better education, quality health care, secure livelihoods), to have an influence in this sphere you have to work with others. Results within the sphere of control and sphere of influence are those that you can measure and can use to guide your strategy and engagement plan (Young et al., 2014).



Fig.5 Framework showing spheres of control, influence and concern.

In order to work towards achieving impact, you are required to prepare and submit the following at the beginning of the research program: i) an Impact Summary, and ii) a Pathways to Impact. In addition, you will also have to submit iii) an Impact Case Study towards the end of the programme. These are discussed below.

1.1.1 Impact Summary

The Impact Summary describes how your research may have a benefit or result in a change outside academia. This is not restricted to the duration of the project and can consider the short, medium and long term benefits that occur outside academia. Consider both the direct and the indirect beneficiaries (it could be a company, charity, group of individuals, specific community, geographical region, the environment, the economy, members of your research team, etc.)

Address the following in Impact Summary (in less than 500 words):

1. Who might benefit from this research (not including other academics)?
2. How would they benefit from this research?

1.1.2 Pathways to Impact

Pathways to impact primarily addresses the following questions:

What will be done to ensure that potential beneficiaries or research users have the opportunity to engage with this research?

The Pathways to Impact document (**maximum 2 A4 page attachment**) focuses on what you or your group will do to move the research and its outputs towards this benefit or change. The Pathways to Impact document should:

- Provide a detailed description of a set of specific activities to be undertaken as part of the research project

- Include a realistic timeline for carrying out the activities
- Add to and complement the other parts of the research proposal
- Think of the most appropriate activities to engage with or reach the beneficiaries you have identified (see Section 1.2)

For each activity, give as much detail as possible. For example, consider:

- At what stage of the project it needs to happen
- Who will be responsible for managing/carrying out the activity
- Whether you will require additional support
- Which other stakeholders need to be involved and how you will identify and engage with them
- How you will measure success.

Do's and Don'ts

Do

- Think about your Pathways to Impact early on in the development of your research proposal.
- Be imaginative but realistic.
- Be specific and give details (dates, responsibilities, etc.).
- Tailor your impact activities to your research. They should be relevant to the type of research and to your stakeholders/end users.
- Plan impact activities throughout the life of your project and involve stakeholders and potential research users early in the process.
- Make your engagement two-way wherever possible. Give stakeholders a chance to feed into the design of your project.
- Request additional support for impact activities, if necessary.
- Keep it brief and relevant. 2 sides of A4 is the upper limit for the Pathways to Impact.
- Get peers and colleagues to read over your Pathways to Impact.

Don't

- Describe your research all over again.
- Mention academic impact (conferences, papers and articles) unless it is a key pathway to delivering your non-academic impact. If this is the case, you should make this link clear.
- Cut and paste your Impact Summary into your Pathways to Impact.
- Make wild and unrealistic claims for potential impact.
- List vague and general activities (e.g. "We will engage industry").
- Cut and paste from a previous or a colleague's Pathways to Impact, or use an 'off the peg' template

1.1.3 Impact Case Study

An Impact case study(ICS) is a narrative which describes how research, conducted during a specific time-frame, resulted in a change, had an effect on or benefited culture, the economy, the environment, health, public policy, quality of life or society using qualitative and quantitative evidence. This has to be written towards the end of the project. A format for the impact case study will be provided in due course.

1.2 Stakeholder Engagement

In order to achieve impact, you have to work with both research users and stakeholders. The following will help you in identifying your research users and stakeholders.

1.2.2 Research Users

Research users are direct beneficiaries of your research. Their involvement in the project is vital to achieving impact from your research. Using the questions below as a guide, characterize each known and potential research user by completing a row for each in Table 2 (see Part 2).

Who are your research users?

- What users or user groups have a decision-making role related to the issue of concern?

What are their needs or wants?

- What are the relevant needs or wants for each research user or research user group? What problems are you hoping to help them address?
- What information do you know they need or want, given their decision making context?
- How do you know they plan to use the information?
- What are the known opportunities for the research user to use the information you are planning to work with them to produce? What are the known barriers?
- What do you expect will be the impact of the information you produce?

How engaged should they be?

- What role do you anticipate the research user will play in the development and implementation of the project, e.g. help define the project goals; facilitate iterative/adaptive learning; testing/providing feedback; evaluation, etc.? How will their engagement in this role enhance the production and usability of the science for this project?
- How frequently do you need to meet in order for them to meaningfully play this role? Note: This and the last question will likely require a conversation with your research user.
- How engaged are they able/do they want to be?

When do the outputs need to be available to the users?

- When do you expect the research user to apply the project outputs, e.g., during the project, after the project concludes, in a more distant future?

1.2.2 Stakeholders

Stakeholder participation should complement the role of research users and provide unique perspectives on the issue and possible solutions. Consider why you are engaging specific stakeholders, what information you need, and how you will use their feedback. Stakeholders can help you:

- Refine the focal question;
- Understand the policy, social, and political landscape;
- Collect the data, local knowledge, or technical or industry insights necessary for an informed assessment;
- Be perceived as credible or legitimate;
- Identify creative and acceptable solutions to the focal question;
- Ground-truth preliminary results; and/or
- Improve the development of final products and presentation of results.

Examples of engagements with stakeholders are given in Annex B.

1.2.3 Stakeholder Mapping

Stakeholder mapping has various uses in developing effective Pathways to Impact and for putting in place an effective strategy for achieving impact. It can be used to identify:

- research users to consult during the research planning stage, to discuss the role they may play in planning the research, such as co-investigators;
- opportunities for building strategic partnerships and strengthening relationships;
- and actively engage relevant users of research and stakeholders at appropriate stages.

An Alignment, Interest and Influence Matrix (AIIM) (Fig. 6) can help ensure you consider the full range of stakeholders who may be influenced by your research in some way. It is a simple stakeholder mapping tool with three aspects: the degree of interest in the research topic; the degree of alignment with the thrust of the research; and the degree of influence they have within the policy-making process. Each of the quadrants in the AIIM is explained below.

Top right quadrant: stakeholders in this quadrant are both interested in your issue and aligned with your approach. These people are your collaborators and allies. You may want to ‘work in partnership’ with this group. Perhaps you could form a community of practice or set up meetings with key organisations or individuals to share ideas or coordinate activities.

Top left quadrant: stakeholders in this quadrant agree with your approach, but they are not interested or prioritising the issue. This could be for several reasons – they may not know much about the issue, have limited capacity or have competing priorities. If there are influential stakeholders in this group, start to think about how you can develop their interest or capacity to get involved.

Bottom right quadrant: stakeholders in this quadrant are interested and perhaps active in your issue area, but they don’t agree with your approach or position. If you need to get stakeholders from this group on board, you’ll need to challenge their current thinking and persuade them of your position. Evidence usually works best for this group. Working through champions who are aligned with your position can also be effective.

Bottom left quadrant: stakeholders in this quadrant do not know much about the project, or if they do, they are not very interested and probably do not agree with your views. If they are not influential in your project’s success, you may prefer to ignore them as a group.

Ultimately, you cannot do everything and may need to focus your energies on the actors in the other three quadrants. It may also be hard to know who these actors are, because they might not even be known to you. If they are potentially influential, you may need to just monitor them to ensure that they don’t move into another quadrant and start to cause your project harm.

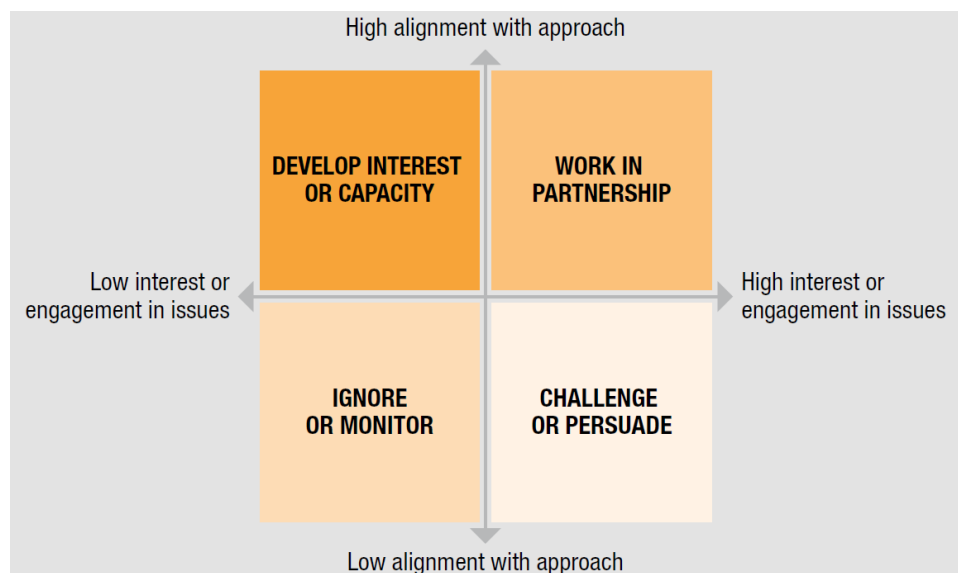


Fig. 6 Stakeholder Intent and Influence Matrix (AIIM). Source: Young et al. (2014)

1.3 Research Communication

Your research will only have real world impact if it reaches the right people. Research communications should be understood in the broadest sense. It involves effective knowledge exchange with non-academic communities (ESRC, 2017). Communication can take many forms – formal and informal. This includes digital engagement, social media, publications, field visits, public events, emails or private meetings. The key is to: know *who* you want to reach; know *what* you want to do; and work out *how* you want to reach them – this means thinking about the channels and tools you will use and to what messages they will relate. Do not leave it to the end. It should be done throughout the project's lifetime.

1.3.1 Step 1: Knowing your audience

The audience is at the heart of any communication. Before you can begin communicating your research, you need to be clear about your aims: who do you want to reach and what do you want them to do with the information? Effective communication material needs to be carefully tailored and adapted for different audiences. It is helpful at this point to look back at your impact objective and reflect on the following:

1. Is there a problem you are working to address?
2. Are you offering a solution (or several solutions)?
3. Are you providing new information to support others to find solutions?
4. What do you want your communications to achieve?
5. Who do you need to engage with to achieve your goal?

1.3.2 Step 2: Crafting effective messages

Identify your key message

A strong message should be at the core of any good report, presentation or other piece of communication. Research frequently focuses on facts and data, but it is important to explore ways to tell a story through your messaging as well. Audiences, from academics to decision-makers, are far more likely to want to interact with new information if they can relate to it in some way. Key messages are 'just the tip of the iceberg' (Young and Quinn, 2012). They are what your audience most needs to know, and are supported by the main information (the rest of the iceberg) as needed. If you give readers all the information in one go they are unlikely to absorb it. When planning your key messages, think about your audience. Who are they? What sort of message do you need to communicate to them, and why? Thinking through several questions can help you shape the message, then the channel for best conveying it:

1. Who are the audience? What role do they play? Are they specialists in the topic or are they non-technical? Are they people who you already know?
2. What do they need to know? What are they currently working on? How can they use your information? Did they ask for the information? If so, are you delivering what they wanted? Do they need to know more?
3. How do they best receive information? Do you know how they tend to prefer to receive communications? What has worked well in the past (and what has not)? Is it better to approach them for a meeting or to send a report?

Make your message stick

Six dimensions to a good message:

Simple. The best messages are always simple. This does not mean dumbed down. Rather, you are pulling out the key message your audience needs to know. Keep it concise and don't over-elaborate.

Unexpected. If you can make people sit up and listen you're more likely to have impact. Counter-intuitive messages, a surprising fact or a different angle can be one way to do this.

Concrete. Don't be too abstract. Make your message tangible, relating to real life examples where possible. For example, rather than saying 25%, say one in four people.

Credible. Your message can be clear, concise and well-constructed, but if it isn't credible the audience is unlikely to listen. Is your message backed up by evidence? Is it believable?

Emotional. We know emotions provoke reaction. Is there a way to explore emotions with your audience, make them connect or care about the human story behind your research?

Stories. We use storytelling all the time for effective communications. Can your message tell a story rather than just hard facts? What's the impact of the evidence?

1.3.3 Step 3: Planning your outputs and activities

Every research project needs to think about outputs and activities. While research may be published in an academic journal, if you want to have an impact beyond academia you will need to think how to achieve this and explore other communication channels. Remember that effective engagement is more than one-way communication.

Engaging stakeholders with your research can improve the quality of your research outputs and the impact, raise your profile and develop your skills. Communication activities, therefore, are some of the most important actions you can take to increase the impact of your research. The outputs, channels and activities you use will depend on what impact you want to have, who your audience is and what resources you have.

A spectrum of knowledge communication activities is a helpful framework to reflect on the different types of knowledge roles you can play (Fig. 7). This may change throughout your research lifetime, depending on what you're trying to achieve and your resources. If you are clear about what your role is and what you can achieve, you can then see where your limits are and where others can help.

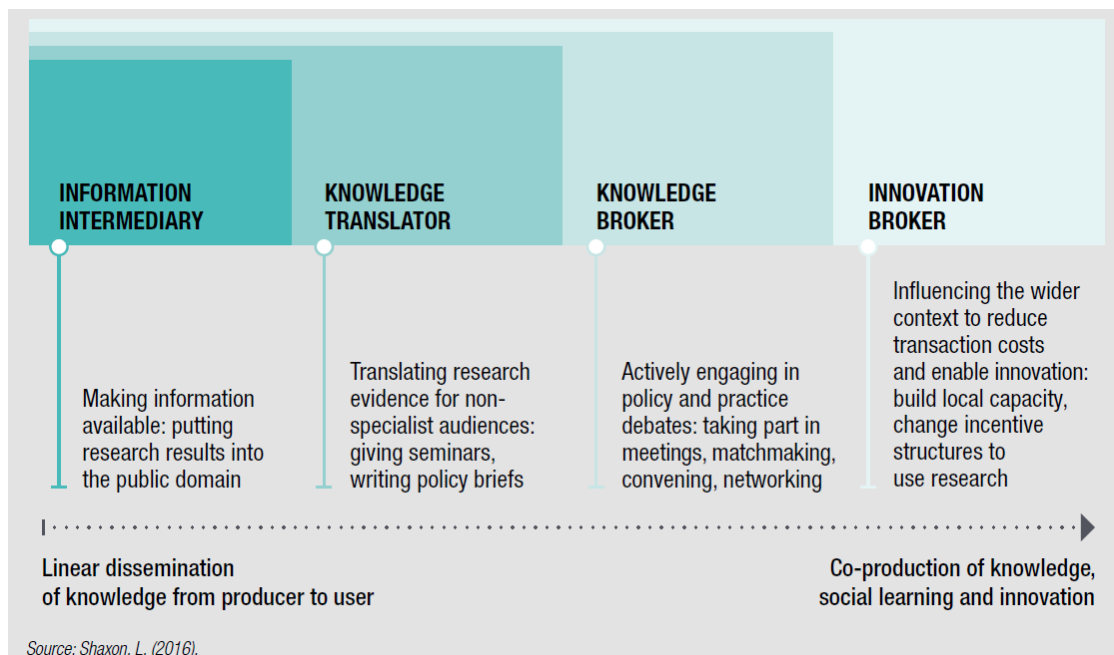


Fig. 7. Spectrum of knowledge communication activities.

Table1. Example outputs, channels and activities.

Types of output	Why use it
Written formats	
Journal article	It presents your full research methodology and analysis. It is likely to be read by other academics or students so the language can be technical (although should always be as clear as possible).
Research report	It presents your full research and evidence. It is likely to have a broader audience than just other academics, so it needs to provide a comprehensive and accessible overview of your research.
Brief	Short, sharp targeted briefs can help communicate key recommendations to policy audiences.
Toolkit	It presents practical tools, insights or experiences in a way that can be easily used or applied by other people.
Blogs and op-eds	They can be used to provide an accessible and engaging 'way in' to bigger pieces of research or learning, as well as reaching broader or targeted audiences.
Media release	Designed to communicate key information to regional, national and international media outlets, it may be picked up by online and print media publications. Media is especially useful for reaching influential people and policy-makers, as well as the general public (depending on what media outlet picks up your work).
Digital tools	
Website	It can provide a central platform to host resources and make your work publicly available. By hosting everything in one place you can track downloads or page views and find out who is interacting with your work.
Data visualisation	It is used to present data visually, making it easier to understand or compare, to tell compelling stories or to draw attention to key messages and statistics.
Online networks	Tapping into existing or established online networks of people interested in research you're working on is a good way to reach wider, but targeted, audience groups. Newsletters can target a mass audience. It may be far more effective to ensure your research appears in other newsletters, for example a university newsletter.
Email	Often overlooked, email plays a critical communications role. A personal email from a researcher to a contact can be one of the most effective ways to share research.
Events and meetings	
Public events	They are one of the most common ways to showcase research on a public platform. They can be part of a conference, a public panel or keynote event. Events may be streamed online or available for users afterwards through a video or podcast.
Policy dialogues	They convene a range of policy stakeholders from different interest groups and with different perspectives, to focus on a policy issue.
Workshops	They can be a good method to engage directly with key stakeholders and encourage small-group discussions.
Bi-lateral meetings	Meetings are one of the most common ways to engage people early on with your project and to showcase results to several key stakeholders, particularly decision-makers and donors.
Webinars	Webinars can be a way to present new research online to audiences in different countries, and, particularly, can encourage new learning and/or guidance for users.
Multimedia	
Social media	It allows you to reach larger networks of people who may be interested in reading, or using your research. This could be on Twitter, LinkedIn and Facebook, as well as WhatsApp and SnapChat.
Multimedia	This media may be better for reaching some audiences, such as young people or policy-makers. It can include videos, podcasts and animation, but also photography.
Radio, TV broadcast	Radio and TV have enormous potential to communicate to a wide audience. For example, in some developing and emerging countries, community radio can be a critical way to reach key audiences.

1.3.4 Step 4: Presenting your research

a) Presentations

At some point during your research, you are likely to need to present it – either formally or informally. This section examines some of the ways in which you can improve your presentation skills and effectively share your key messages.

Tips for presenting well

- Be clear about the purpose and audience for the presentation. This will help you focus on the information you most need to prioritise your key messages.

- Structure your presentation. Can you identify one overarching message and three key points to share? The beginning should capture your audience – quotes or surprising facts can work well. Then introduce the outline of your presentation. To close, highlight your key points and any recommendations or next steps.
- Plan your presentation and practice. Even the most experienced presenters practise, practise and practise.
- Make sure it is clear and accessible. ‘If you can’t explain it simply, you don’t understand’ – so goes the quote by Einstein.
- Try practising what you want to say with someone who does not know very much about the topic (a relative, friend, spouse or colleague) and get them to give you honest feedback.
- Stick to your time limit. Find out how long you will have to speak and prepare for less time than this, as it is normal to overrun. Also, try to keep presentations short, or break it up with time for questions. Don’t just speak non-stop at the audience – they will switch off.
- Find your passion. Stakeholders are more likely to listen to you if you sound confident but, above all, interested in what you are saying.

What not to do (common mistakes)

- Don’t use your slides as a crutch. Slides are there to enhance your presentation, not duplicate it. People can’t listen and read at the same time. If you need to, make notes, don’t read your slides.
- Don’t overload your slides. Avoid putting too much information on one slide. Break up text with images, videos or quotes. Lots of studies show people respond better to visual stimuli than text (Gallo, 2014). Be careful with graphs and data; they can be helpful but can be difficult to read (see tips on data visualisation). Short videos can also be a good way to break up the presentation.
- Don’t use PowerPoint until you have a structure. It pays off to spend time identifying your key messages and structuring your presentation. Don’t start making your PowerPoint presentation until you’ve got a proper structure in place.
- Do not assume PowerPoint is the only format. There may be other formats that are more appropriate for the presenting your context and getting your message across. For example, Prezi is a visual tool that allows a different structure.

b) Briefs

Briefs don’t replace reports as you still need to be able to provide the detailed evidence. Instead, briefs are a useful tool to reach specific audiences, particularly when they may not have time to read the full report or just need key information. They help present your findings and recommendations in a way that is digestible. The policy brief is a common form of brief used to target policy-makers. It typically has four functions: to explain/convey the urgency of an issue; to present policy recommendations or implications on the issue; to provide evidence to support the reasoning behind the brief; and to point the reader to additional resources on the issue.

Here are four main steps to help plan a policy brief:

1. Identify the purpose and overarching message of the brief.
2. Determine three recommendations/implications if relevant.
3. Construct a logical line of argument for making these recommendations (your results or conclusions). When you are thinking about your line of argument you can ask: what is the problem and how does my research fit into this? Why is it urgent/timely/ important? Why should the target audience know more?
4. Based on an understanding of the context around the issue, identify one or two entry points or hooks for the message. These are commonly used at the beginning of reports, summaries or briefs to entice the reader into continuing to read.

c) Data visualisation and infographics

Data visualisation, the graphic representation of data or knowledge, can add value to your research by (ODI internal infographic guidelines):

1. Making data or information easier to understand or compare;
2. Telling complex stories in a condensed and compelling way;
3. Drawing attention to key audiences;
4. Engaging a wider audience.

Data visualisations showcase data or information in visual form, so there are a wide variety of options that fall under this category.

At the simplest level, a data visualisation could be a graph or chart, a timeline, a map or an illustration.

d) Lay abstract

A lay abstract is a brief summary of a research project that is used to explain complex ideas and technical and scientific terms to people who do not have prior knowledge about the subject.

A lay audience is diverse and includes members of the general public, media, funding agencies, and researchers in different disciplines. It is intended to explain why the research is being suggested, what researchers aim to achieve and how this may impact society, economy, environment etc. Typical summaries might discuss the purpose of the research, its relevance, and the proposed methodology.

PART 2

2. Impact Development Workshop

Each IIRG team will engage in hands-on activities as described below (Activities 2.1-2.4) to develop their impact plan.

2.1 Impact

Activity 2.1: Identify your impact objective

Time	20–40 minutes
Resources	1 x flip chart paper and pen per group
Purpose	To develop a clear and concise impact objective
Activity	<p>In your research team, answer these seven questions:</p> <ol style="list-style-type: none">1. What is your research question and/or hypothesis? See Table 3 for guidance on developing a strong research question.2. What wider policy problem or issue does this feed into? For example, if your research is on youth perceptions on agriculture in eastern Uganda, the wider policy problem may be youth unemployment in the region.3. How can your research contribute to understanding or solving this problem or issue? What information or perspective will your research bring to light? What influence do you expect this to have? Will you engage or encourage participation from local stakeholders?4. Who will benefit from this research? How will they benefit? Rather than just listing stakeholders or making broad statements about how your research will 'provide new insights' or 'increase understanding', the purpose of this exercise is to dig deeper. How will new insights or greater understanding make a difference to people's lives? Will the research achieve this by engaging with local stakeholders? For example, a greater understanding of how young people perceive agriculture in eastern Uganda may help policy-makers create policies that incentivise young people to access available jobs in agriculture – this will help young people build a sustainable livelihood and feed their families.5. What is your high-level impact objective? This is the ultimate impact objective you would like to see the research achieve. This may take place beyond the end of the research and it may be outside your sphere of influence. Critically, think about this and how you may need to adjust it to reflect your responses to questions 1–4. It could be that you have more than one high-level impact objective.6. What are your impact objectives within your sphere of influence? Examples may be to build awareness of the research among a target audience, secure the commitment of a target group of stakeholders to the research aims, influence specific policies or policy-makers on key aspects or encourage participation among researchers or partner bodies (ESRC, 2016).7. What would you point to, to indicate that change has happened and that your research has made a difference? What observable changes among these groups might you see? Is it plausible that your research has contributed to these? Think about this for your impact objectives both within your sphere of influence and for high-level impacts.

2.2 Stakeholder Engagement

Activity 2.2: Map your stakeholders

Time	60 minutes
Resources	1 x flip chart paper, marker pen, up to 20 sticky notes per group
Purpose	To identify: <ul style="list-style-type: none"> • research users to consult during the research planning stage; • opportunities for building strategic partnerships and strengthening relationships; • relevant users of research and stakeholders.
Activity	<ol style="list-style-type: none"> 1. Place the flip chart paper on the wall or in the middle of the table and draw the matrix. Write your policy objective at the top of the page. 2. For your policy objective, list all the stakeholders you can think of. Write them down on the sticky notes (one per note). Be specific and refer to different individuals or teams, rather than just saying the Ministry of Agriculture. This is important as different teams may have different positioning. 3. Select those stakeholders who have the highest or the lowest interest or alignment. 4. Take turns to place the sticky notes on the matrix, placing the notes for the four stakeholders that are at the most extreme points: so most interested/most aligned, least interested/least aligned, most interested/least aligned, etc. This allows an analysis of their relative rather than absolute levels and prevents all stakeholders being concentrated in the top right hand corner of the matrix. 5. As you place the sticky notes, explain to the group why you are placing the stakeholder in that position. Discuss whether people agree or not. Remember you can have more than one sticky note per organisation; if an individual or team has a different degree of interest, alignment or influence, separate them out. 6. Add dots to the sticky notes to show how influential the stakeholder is to the success of your research. Add three dots if they have a lot of power or influence; two dots for reasonable influence; one dot for minimal influence; and no dots for no influence. This will help you prioritise your efforts and resources later on. 7. Once all stakeholders are on the matrix, start to look at the groupings. Refer to Box 5: Alignment, interest, influence matrix – groupings. Look at the individuals and groups that are most influential to you. Are they where you want them to be on the matrix? If not, use the pens to draw arrows to where you would like them to move to. 8. Now add a 'tick' to any sticky note you have already had contact with or have access to. 9. Think about what strategies you may want to implement to respond to your findings.

Please note that quality engagement of a few end users and stakeholders is more important than reaching a large number of people. Your team is encouraged to develop a formal project advisory group that includes end users, other relevant decision makers, and representative stakeholders. Invitations to serve on the advisory group should emphasize the contribution of and benefits to participants.

At the end of this activity please fill in the following forms.

Table 2. Research User Characterization Worksheet*.

User (name, title, organization)	Description of need/want	Level & frequency of engagement	Potential timeline for use of outputs
Research user 1:			
Research user 2:			
Research user 3:			
Research user 4:			

*Water Center, University of Michigan

2.3 Research Communication

Activity 2.3: Identify your audiences

Time	60 minutes
Resources	1 x flip chart paper, marker pen, up to 20 sticky notes per group
Purpose	To develop a clear and concise impact objective
Activity	<ol style="list-style-type: none"> 1. Write your impact objective on a large piece of flip chart paper so everyone can see it. 2. Put four sheets of flip chart paper on the wall. Label the first 'Audience', the second 'Objective', the third 'Message' and the fourth 'When', and distribute sticky notes to participants. 3. Invite participants to write a key audience on a sticky note, contributing up to three each. Be as specific as possible (i.e. rather than writing 'policy-makers', write 'the Minister of Education'). 4. Invite participants to place their sticky notes one by one on the first flip chart paper. 5. Invite one or two participants to cluster the notes into groups and explain why they have chosen that particular grouping. (You may also want to refer to your stakeholder maps.) 6. Get into groups of three or four people and think about why you want to engage with that audience. Is it to bring them on board as a partner? Is it because you want them to share your research with others? Or is it because you want to influence their actions with your research? 7. Invite one participant from each group to add the objectives to the second flip chart paper, so that they are aligned with the respective audience groups. This may lead to some discussion, try to reach a consensus. 8. In those same groups, think about what kind of information the different audiences will most likely be interested in, or need. Write them down on sticky notes. 9. Invite each group to add their ideas to the third flip chart paper for each audience group. Again, this may lead to some discussion and debate among the groups, try to reach a consensus. 10. In the same groups, think about when you will want to engage with that audience. This will link to the objective, for example if your objective is to build a partnership you may want to do that early in the research process. You may find that you need to engage with some audiences throughout the research.

Activity 2.4: Map your communications activities

This exercise builds on 'Identify your audience'. In this task, you will start to identify the outputs, channels and activities you need to reach your priority audiences. You can then determine who will do what. It is useful to note any capacity shortfalls you may be facing and possible interim strategies to address these. Activities often take longer than you think, particularly those requiring working with external actors, such as developing partnerships. It is also important to include leadership of senior staff to draw on their experience.

Time	30-40 minutes
Resources	2 x flip chart paper, marker pens and sticky notes
Purpose	To develop communication strategies for each audience group
Activity	<ol style="list-style-type: none"> 1. Look back at the flip chart papers from the previous task. Re-familiarise yourself with your audiences, why you want to engage with them and why. 2. Add a fifth flip chart to the wall titled 'Communications activities'. 3. In the same groups, identify what communications outputs and channels may be best to reach the different audience groups (e.g. a report, a policy brief, the media, an event, a face-to-face meeting, email). Write these on sticky notes. 4. Invite participants to add their sticky notes to the flip chart paper. 5. Next, think about your resources (time, expertise and budget). Which of these activities are a 'must'? Which are a 'nice to have'? Do you have the time, expertise and budget to deliver these activities? 6. Take a new flip chart paper and turn it landscape. Draw out the example table below (Table 9) and start filling it in.

PART 3

3. Impact Planning

Please plan your impact related activities from the beginning and document them. An indicative list of activities and related time line is given below.

Table 4. An indicative list of activities and related time line.

	Year1				Year2			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Cluster:								
Activities								
Workshop/training	Impact Development Workshop				Follow-up Workshop			
Progress monitoring		Half yearly		Year End		Half yearly		Year End
Researchers:								
Activities								
Internal Meeting of Researchers	*	*	*	*	*	*	*	*
Impact	Impact Summary, Pathways to Impact		Plan and carry out your impact activities					Impact Case Study
Stakeholder Engagement	Research User and Stakeholder Characterization Worksheets		Plan and carry out your engagement activities					
Research Communication	Lay Abstract, Graphical Abstract		Plan and carry out your communication activities					

Annex A: Examples of impacts and indicators

Table below is intended to illustrate the wide variety of areas in which impact from research may be found to have a positive influence on the quality of life of individuals and communities locally, nationally and internationally. **These are indicative only**, and in practice much of the impact will cross boundaries between them or go beyond them.

Areas of impact	Types of impacts	Indicators of reach and significance
<p>Impacts on the health and wellbeing of people, and animal welfare</p> <p>Impacts where the beneficiaries are individuals and groups (both human and animals) whose health outcomes have been improved, whose quality of life has been enhanced (or potential harm mitigated) or whose rights or interests have been protected or advocated through the application of enhanced policy and practice for individuals or public health activities.</p>	<ul style="list-style-type: none"> • Outcomes for patients/users or related groups have improved. • Public health or wellbeing has improved. • Quality of life in a developing country has been improved by new products or processes. • A new clinical or lifestyle intervention (e.g. drug, diet, treatment or therapy) has been developed, trialled with patients/users, related or other groups (e.g. community samples), and definitive (positive or negative) outcome demonstrated. • Patient health outcomes have improved through, for example, the availability of new drug, treatment or therapy, diagnostic or medical technology, changes to patient care practices, or changes to clinical or healthcare guidelines. • A new diagnostic or clinical technology has been adopted. • Disease prevention or markers of health have been enhanced by research. • Misleading health claims identified by research are not included in food packaging. • Care and educational practices have changed. • Clinical, dietary, health or social care guidelines have changed. • Health or social care training guidelines have changed. • Decisions by a health service or regulatory authority (to take, or not to take action) have been informed by research. • Public health and quality of life has been enhanced through, for example, enhanced public awareness of a health risk, enhanced disease prevention or, in developing countries, improved water quality or access to health and social care. • The user experience has improved. • Increased patient/user involvement in shaping and implementing policy and practice. • Public awareness of a health risk or benefit has been raised. • The control of diseases has changed in developing countries. • Development or adoption of new indicators of health and wellbeing. • Development of policy and practice with regard to medical ethics, health services or social care provision. • Influence on CPD and training standards. • Influence or shaping of relevant legislation. • Influencing policy or practice leading to improved take-up or use of services. • Improved provision or access to services. • Animal health and welfare has been enhanced by research. • Use of animals in research has been reduced, refined or replaced. 	<ul style="list-style-type: none"> • Measures of improved clinical outcomes, public behaviour or health services (lives saved, reduced infection rates). • Measures of improved wellbeing. • Evidence from clinical trials. • Measures of improved patient/user outcomes, public health or health services. • Documented changes to clinical and/or public health guidelines (documented references to research evidence in guidelines). • Evidence of enhancement of patient/user experience. • Evidence of take-up and use of new or improved products and processes that improve quality of life or animal welfare in any given context, e.g. developing countries. • Evidence of the number of animals no longer used in research or a specific sector (e.g. per test, drug, laboratory, or leisure industry). • Documented changes to animal welfare codes or guidelines.
<p>Impacts on creativity, culture and society</p> <p>Impacts where the beneficiaries may include individuals, groups of individuals, organisations or communities whose behaviours, creative practices, rights, duties and other activity have been influenced.</p>	<ul style="list-style-type: none"> • Collaboration with museum professionals results in enhancements to (cultural) heritage preservation and interpretation, including museum and gallery exhibitions. • Co-production of new cultural artefacts, including for example, films, novels and TV programmes. • Generating new ways of thinking that influence creative practice, its artistic quality or its audience reach. • Inspiring, co-creating and supporting new forms of artistic, literary, linguistic, social, economic, religious, and other 	<p>Arts Council England offer guidance and toolkits for evaluating impact:</p> <ul style="list-style-type: none"> • https://www.artscouncil.org.uk/quality-metrics/quality-principles • https://www.artscouncil.org.uk/quality-metrics/quality-metrics • https://www.artscouncil.org.uk/measuring-outcomes/aeneric-learning-outcomes • https://www.artscouncil.org.uk/measuring-outcomes/aeneric-learning-outcomes

	<p>expression.</p> <ul style="list-style-type: none"> • Collaboration with public arts venues, artists and programming professionals to produce new forms of artistic expression. • Research-led engagement with marginalised, under-engaged and/or diverse audiences leads to increased cultural participation. • Developing stimuli to cultural tourism and contributing to the quality of the tourist experience. • Improvements to legal and other frameworks for securing intellectual property rights. • Increased understanding of local traditions leads to enhanced cultural preservation in any given context, for example developing countries. • New forms of artistic expression resulting in enhancement of quality of life. 	<p>outcomes/generic-social-outcomes</p> <ul style="list-style-type: none"> • Testimonials from creative practitioners, curators, media professionals. • Publication and sales figures both in the UK and overseas, audience or attendance figures (including demographic data where relevant), broadcasting data and other forms of media, download figures, or database and website hits over a sustained period. • Evaluative reviews in the media. • Citations in reviews outside academic literature. Independent citations in the media, including in online documents. • Tourism data, including audience figures and visitor numbers at exhibitions, events, performances. • Professional evaluations of exhibitions, performances or other outputs. • Audience/visitor/participant feedback (e.g. through surveys, interviews or focus groups).
<p>Impact on social welfare Impacts where the beneficiaries include individuals, groups of individuals, organisations or communities whose rights, duties, behaviours, opportunities, inclusion, quality of life and other activity have been influenced.</p>	<ul style="list-style-type: none"> • Improved social welfare, equality, social inclusion; improved access to justice and other opportunities (including employment and education). • Engagement with research has enhanced policy and practice for securing poverty alleviation. • Influential contributions to campaigns for social, economic, political and/or legal change through engagement with civil society groups. • Changes to social policy have been informed by research. • Changes to social policy have led to improved social welfare, equality or social inclusion. • Research has contributed to community regeneration or development. • Improved social and educational inclusion of marginalised groups in any given context, for example developing countries. • More effective integration of refugees into host communities. • Enhanced understanding of victims' needs in reconciliation processes in post-conflict states. 	<p><i>A beginner's guide to evaluating social return on investment (SROI) can be found here:</i> http://www.socialvalueuk.org/resource/guidance-on-starting-out-on-sroi-2/</p> <ul style="list-style-type: none"> • Documented evidence of changes to social policy. • Measures of improved social equality, welfare or inclusion. • Citations in campaign literature (e.g. leaflets). • Evidence of public debate in the media or other fora being influenced by the research. • Documented evidence of increased social inclusion (e.g. participation figures). • Testimonials from civil society groups and policymakers.
<p>Impacts on commerce and the economy Impacts where the beneficiaries may include businesses, either new or established, the NHS, private health and social care, agriculture or other types of organisation which undertake activity that may create wealth.</p>	<ul style="list-style-type: none"> • A spin-out or new business has been created, established its viability, or generated revenue or profits. • Contributing to innovation and entrepreneurial activity through the design and delivery of new products or services. • Decisions are made not to introduce a new process or product as a result of research. • Social enterprise initiatives have been created. • The costs of treatment, health or social care have changed as a result of research-led changes in practice. • Policies have been introduced which have had an impact on economic growth or incentivising productivity. • Gains in productivity have been realised as a result of research-led changes in practice. • Research helps to stimulate foreign direct investment (FDI). • The performance of an existing business has been improved through the introduction of new, or the improvement of existing, products, processes or services; the adoption of new, updated or enhanced technical standards and/or protocols; or the enhancement of strategy, operations or management practices. • Contributing to economic prosperity via the creative sector including publishing, music, theatre, museums and galleries, film and television, fashion, tourism, and computer games. • Performance has been improved, or new or changed technologies or processes adopted, in companies or other organisations through highly skilled people having taken up specialist roles that draw on their research, or through the provision of consultancy or training that draws on their research. 	<ul style="list-style-type: none"> • Evidence of improved cost-effectiveness. • Evidence of service change. • Sales of new products/services. • Business performance measures (e.g. turnover/profits, trends in key technical performance measures underlying economic performance). • Employment figures. • Licences awarded and brought to market; market authorisation. • Demonstrable collaborations with industry (including knowledge transfer partnerships, and contracts). • Commercial adoption of a new technology, process, knowledge or concept. • Business performance measures, for example sales, turnover, profits or employment associated with new or improved products, processes or services. • Jobs created or protected. • Investment funding raised from UK and/or non-UK agencies (venture capital/Business Angel, and so on) for start-up businesses and new activities of existing businesses. • Priority shifts in expenditure profiles or quantifiable reallocation of corporate, non-profit or public budgets. • Evidence of critical impact on particular projects, products and processes confirmed by independent authoritative evidence, which should be financial where possible. • Evidence of research leading to avoidance of negative outcomes.

	<ul style="list-style-type: none"> • Potential future losses have been mitigated by improved methods of risk assessment and management in safety- or security-critical situations. • The strategy, operations or workplace practices of a business have changed. • Improved support for the development of 'small scale' technologies. • Improvements in legal frameworks, regulatory environment or governance of business entities. • Better access to finance opportunities. • Enhanced corporate social responsibility policies. • More effective dispute resolution. • Alternative economic models (such as fair trade) have been developed and adopted. 	<ul style="list-style-type: none"> • Quantitative data relating, for example, to cost-effectiveness or organisational performance. • Tourism data, including audience figures and visitor numbers at exhibitions, events, performances. • Evidence of closing identified skills gaps.
<p>Impacts on public policy, law and services Impacts where the beneficiaries are usually government, non-governmental organisations (NGOs), charities and public sector organisations and society, either as a whole or groups of individuals in society, through the implementation or non-implementation of policies, systems or reforms.</p>	<ul style="list-style-type: none"> • Policy debate has been stimulated or informed by research evidence, which may have led to confirmation of policy, change in policy direction, implementation or withdrawal of policy. • Policy decisions or changes to legislation, regulations or guidelines have been informed by research evidence. • A policy has been implemented (including those realised through changes to legislation) or the delivery of a public service has changed. • In delivering a public service, a new technology or process has been adopted or an existing technology or process improved. • The quality, accessibility, acceptability or cost-effectiveness of a public service has been improved. • (Sections of) the public have benefited from public service improvements. • Risks to the security of nation states have been reduced. • The work of an NGO, charitable or other organisation has been influenced by the research. • Legislative change, development of legal principle or effect on legal practice. • Research is used by parliamentarians to develop proposals for new legislation through Private Members' Bills, or to assist scrutiny of legislation and inform amendments to other bills such as those introduced by government. • Research recommendations are taken up by policymakers through membership of a government advisory committee. • Policymakers make use of research-based critical evidence synthesis in developing policy. • Government analysts adopt innovative methodological or approach-based advice from researchers. • Forms of regulation, dispute resolution or access to justice have been influenced. • Research is used to change current processes or services, or identify new services to be provided. • Research into the languages and cultures of minority linguistic, ethnic, religious, immigrant, cultures and communities used by government, NGOs, charities or private sector to understand and respond to their needs. • Research helps to highlight issues of concern to parliamentarians and contributes to new analysis of existing issues. • Research helps parliamentarians and staff to identify inquiry topics, shape the focus of inquiries, inform questioning of witnesses, and underpin recommendations. • Research equips parliamentarians, their staff, and legislative staff with new analytical or technical skills, or refreshes existing ones. • International policy development has been influenced by research. • Allocation and/or distribution of Official Development Assistance (ODA) has been influenced by research. • Policy and practice of international agencies or institutions have been influenced by research. 	<ul style="list-style-type: none"> • Documented evidence of use in policy debate (e.g. at a parliamentary Select Committee, material produced by NGOs). • Citation in a public discussion, consultation document or judgement. • Evidence of citation in policy, regulatory, strategy, practice or other documents. • Direct citations of research in parliamentary publications such as Hansard, committee reports, evidence submissions, or briefings. • Acknowledgements to researchers on webpages, in reports or briefings. • Evidence of influence on a debate in public policy and practice through membership of or distinctive contributions to expert panels and policy committees or advice to government (at local, national or international level). • Quantitative indicators or statistics on the numbers of attendees or participants at a research event, or website analytics for online briefings. • Qualitative feedback from participants or attendees at research events. • Data to show close working relationships with members or staff. For example, the number of meetings held, minutes from these meetings, membership of working groups, co-authoring of publications. • Testimonials from members, committees or officials, where available. • Documented evidence of influence on guidelines, legislation, regulation, policy or standards. • Documented evidence of changes to public policy, legislation, regulations or guidelines. • Analysis by third-party organisations of parliamentary proceedings or processes, for example studies of the passage of particular pieces of legislation. • Documented evidence of changes to international development policies. • Evidence of use of process/technology. • Measures of improved public services, including, where appropriate, quantitative information; such information may relate, for example, to the quality, accessibility or cost-effectiveness of public services. • Measures of improved inclusion, welfare or equality. • Satisfaction measures (e.g. with services). • Formal partnership agreements or research collaboration with major institutions, NGOs and public bodies. Consultancies to public or other bodies that utilise research expertise. • Evidence of engagement with campaign and pressure groups and other civil organisations (including membership and activities of those organisations and campaigns) as a result of research.

	<ul style="list-style-type: none"> • Research stimulates critical public debate that leads to the non-adoption of policy. 	<ul style="list-style-type: none"> • Documented evidence of changes to international development policies. • Measures of improved international equality, food security, welfare or inclusion.
<p>Impacts on production Impacts where the beneficiaries are individuals (including groups of individuals) whose production has been enhanced.</p>	<ul style="list-style-type: none"> • Production, yields or quality have been enhanced or level of waste has been reduced. • Research helps to create routes to international innovation and market impact. • Research leads to improvement in productivity and resource-use efficiency. • Decisions by regulatory authorities have been influenced by research. • More efficient production, including food production, for example where costs have been reduced. • Animal husbandry methods have changed. • Management practices in production businesses have changed. 	<ul style="list-style-type: none"> • A new product has been recommended for use or adopted. • Development of a new plant variety or crop protection product which has entered the appropriate national or international regulatory testing system. • Evidence of improved sustainability. • Documented changes to working guidelines. • Documented evidence of improved working practices and/or level of production.
<p>Impacts on practitioners and delivery of professional services, enhanced performance or ethical practice Impacts where beneficiaries may include organisations or individuals, including service users, involved in the development and/or delivery of professional services and ethics.</p>	<ul style="list-style-type: none"> • Professional standards, guidelines or training have been influenced by research. • Professional methods, ideas or ethics have been influenced by research. • Professionals and organisations are able to adapt to changing cultural values as a result of research. • Contribution to continuing personal and professional development. • Practitioners/professionals/lawyers have used research findings in conducting their work. • Professional bodies and learned societies have used research to define best practice, formulate policy, or to lobby government or other stakeholders. • Workforce planning has been influenced by research. • Educational or pedagogical practices and methods have changed in primary, secondary, further or higher education, within or beyond the submitting unit. • Practices have changed, or new or improved processes or methods have been adopted, by individuals, companies or other organisations, through the provision of training or consultancy. • The development of expert systems has been influenced in areas such as medicine, human resources, accounting, and financial services. • The quality, efficiency or productivity of a professional service has improved. • Expert and legal work or forensic methods have been informed by research. • Law enforcement and security practices have changed. • Cessation of practices shown by research to be ineffective. 	<ul style="list-style-type: none"> • Documented change to professional standards, performance or behaviour. • Evidence of adoption of best practice (e.g. by educators or law enforcement personnel). • New or modified professional standards and codes of practice. • New or modified technical standards or protocols. • Documented changes in knowledge, capability or behaviours of individuals benefiting from training. • Evidence of debate among practitioners, leading to developments in attitudes or behaviours. • Literature/web information from practitioners and advisers, including the research findings and how they are applied in practice. • Traceable reference to inclusion of research in national or international industry standards or authoritative guidance. • Traceable references by practitioners to research papers that describe their use and the impact of the research.
<p>Impacts on the environment Impacts where the key beneficiaries are the natural, historical and/or built environment, together with societies, individuals or groups of individuals who benefit as a result.</p>	<ul style="list-style-type: none"> • The environment has been improved through the introduction of new product(s), process(es) or service(s); the improvement of existing product(s), process(es) or services; or the enhancement of strategy, operations or management practices. • New methods, models, monitoring or techniques have been developed that have led to changes or benefits. • Policy debate on climate change or the environment has been influenced by research. • Policy debate on the environment, environmental policy decisions or planning decisions have been stimulated or informed by research and research evidence. • Improved design or implementation of environmental policy or regulation. • The management or conservation of natural resources, including energy, water and food, has changed in a developing country. • The management of an environmental risk or hazard has changed. 	<ul style="list-style-type: none"> • Sales of new products, or improvements in existing products, that bring quantifiable environmental benefits. • Verifiable influence on particular projects or processes which bring environmental benefits. • Evidence of generic environmental impact across a sector, confirmed by independent authoritative evidence. • Traceable reference to inclusion of research into government policy papers, legislation and industry guidance. • Traceable reference to the influence of research in planning decision outcomes. • Sales of new products or improvements in existing products that bring quantifiable environmental benefits. • Traceable impacts on particular projects or processes which bring environmental benefits. • Evidence of generic environmental impact across a

	<ul style="list-style-type: none"> • Changes in environmental or architectural design standards or general practice. • Influence on professional practice or codes. • Changes in practices or policies affecting biodiversity. • The operations of a business or public service have been changed to achieve environmental (green) objectives. • Direct intervention, based on research evidence, has led to a reduction in carbon dioxide or other environmentally damaging emissions. • Increased understanding of the environmental impact of a product or process means that it is not adopted by industry. 	<p>sector, confirmed by independent authoritative evidence.</p> <ul style="list-style-type: none"> • Documented case-specific improvements to environment-related issues. • Traceable reference to inclusion of research into government policy papers, legislation and industry guidance. • Traceable reference to impact of research in planning decision outcomes.
<p>Impacts on understanding, learning and participation</p> <p>Impacts where the beneficiaries are individuals, communities and organisations whose awareness, understanding, participation or engagement have been enhanced as a result of research.</p>	<ul style="list-style-type: none"> • Enhanced cultural understanding of issues and phenomena; shaping or informing public attitudes and values. • Public interest and engagement in research has been stimulated through, for example, the enhancement of science education in schools. • The awareness, attitudes or understanding of (sections of) the public have been informed, and their ability to make informed decisions on issues improved, by engaging them with research. • Public or political debate has been shaped or informed by research; this may include activity that has challenged established norms, modes of thought or practices. • Contributing to processes of commemoration, memorialisation and reconciliation. • Contributing to a wider public understanding of basic standards of wellbeing and human rights conceptions. • Contributing to widening public access to and participation in the political process. • Professionals and organisations have adapted to changing cultural values. • Research has challenged conventional wisdom, stimulating debate among stakeholders. • Increased understanding of gender roles in any given context (e.g. developing countries) has improved equality. • Changes to education or the school curriculum have been informed by research. • Influencing the design and delivery of curriculum and syllabi in schools, HEIs or other educational institutions. • Research results in changes to the delivery of vocational courses and subsequently changes to professional practice. • Reduced gap in academic attainment for students with protected characteristics. 	<p><i>Many organisations use the Generic Learning Outcomes (GLO) to evaluate impacts on knowledge and understanding:</i></p> <p>https://www.artscouncil.org.uk/measuring-outcomes/aeneric-learning-outcomes.</p> <p><i>The Heritage Lottery Fund also offers guidance on evaluating participation and learning:</i></p> <p>https://www.hlf.org.uk/evaluation-guidance.</p> <ul style="list-style-type: none"> • Documented evidence that public understanding has been enhanced through active collaborative involvement in research. • Documented evidence of policy debate (e.g. in Parliament, the media, material produced by NGOs). • Public debate in the media. • Documented shift in public attitude (e.g. to sexual behaviour, or social factors in health). • Documented evidence of enhanced awareness of health risks and benefits by consumers. • Citation in a public discussion, consultation document or judgement. • Citation by journalists, broadcasters or social media. • Evidence of increased public uptake of scientific training, through public engagement. • Information about the number and profile of people engaged and types of audience. • Evidence of secondary reach, for example from follow-up activity or media coverage. • Evidence of sustainability through, for example, a sustained or ongoing engagement with a group, a significant increase in participation in events or programmes or use of resources. • Evidence of engagement with campaign and pressure groups and other civil organisations (including membership and activities of those organisations and campaigns) as a result of research. • Measures of increased attainment and/or measures of improved engagement with science in non-HE education. • Evidence of use of education materials arising from the research.

Annex B: Examples of stakeholder engagements

NOTE—This is **NOT** an exhaustive list. This list includes examples which may not be relevant for all disciplines.

- Mobility of researchers (i.e. researchers employed or placed outside academia, and/or research end-user employees that are employed or placed within academia)
- Patents granted, PCT applications, triadic patents
- Citations in patents to traditional research outputs
- Co-supervision of students by research end-users
- Cash support from end-users
- Research income / commercialisation income
- Students in internships/placements
- Student employment destinations
- Repeat business with industry
- Start-up/spin-out companies
- Co-authorship of research outputs with research end-users
- Co-funding of research outputs with research end-users
- In-kind support from end-users
- Licencing agreements
- Confidentiality agreements
- Number of contracts for research, consulting, expert witness and testing
- Number of licences, assignments and options
- Established networks and relationships with research users
- Number of different clients with contracts worth greater than a threshold value
- Evidence of significant institutional partnerships—e.g. Sydney Health Partners; various global research consortia, OECD, World Bank, World Health Organisation, UN, UNESCO
- Philanthropy linked to research support and in-kind support
- Book sales
- Serving on external advisory boards
- Consultations with community groups, professional/practice organisations, government bodies
- Consultation with/advice to Government
- Expert witness in court cases
- Contributions/submissions to public enquiries on industry-research related issues
- Public lectures, seminars, open days, school visits
- Presentations to practitioner communities
- Connections to cultural institutions, seminars/workshops, internships and engagement with the public
- Support for cultural events/institutions—e.g. Writers' Festivals, Film Festivals, Vivid Sydney, etc.
- Co-designing and collaborating on performances and exhibitions
- Mentoring external research partners
- Involving users at all stages of the research, including working with user stakeholder and participatory groups
- Memoranda of Understanding (MOU)/Agreements
- Collect data around performance and the different types of public activities in which researchers generally report their work to the community or use their research capacity to further the work of community organisations
- Event participation statistics (public lectures, cultural events, exhibitions, etc.)
- Outreach activities (public lectures, policy engagements, media engagements, community events)
- Media coverage of exhibitions and new works
- Modification of traditional 'commercialisation' metrics such as 'spin-offs' to capture arts entrepreneurship such as setting up galleries, ensembles, groups and other professional practice entities
- Metrics which capture social media activity
- Any other indicator