How to evaluate the impact of research on environmental policy: A SEVEN STEP GUIDE

Output from SKEP Call 2 - Science to Policy Process: Lot 1

Understanding the Impact of Environmental Research on Policy – Developing a Framework for Research Impact Evaluation and Guidelines for its Use

How to evaluate the impact of research on environmental policy: a seven step guide

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Output from SKEP Call 2 - Science to Policy Process: Lot 1
Understanding the Impact of Environmental Research on Policy – Developing a Framework for Research Impact Evaluation and Guidelines for its Use

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How to evaluate the impact of research on environmental policy: a seven step guide

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Introduction

How to evaluate the impact of environmental research on policy: a seven step guide

This document provides a concise practical guide for those wanting to develop and use a framework to evaluate the impact of research on environmental policy. It:

- Outlines seven steps from evaluation planning through to implementation and onto reporting and follow-up;
- Highlights how evaluation frameworks can be tailored to the circumstances and needs of the organisation and type of research being evaluated; and
- Provides links to more detailed information that may be required by those using the Guide.

Research and evidence has a central role to play in the development of environmental policy, both shaping its overall strategic direction and also in the identification and implementation of specific objectives. A substantial investment is made each year in science to support environmental protection policies at the EU and member state level. Understanding the impact of this research is important from a number of perspectives. Funders of research will want to evaluate the performance and impact of the researchers they have funded and also their own organisation’s performance in commissioning and managing research, for example. Alternatively, there is a need to demonstrate value from the public investment in research and also to understand how the impact of research on policy is generated and can be enhanced.

Evaluation is often seen as a defensive, burdensome and resource-intensive activity conducted to ‘justify’ the existence of programmes to funders. It should be considered more positively than this. Good research impact evaluation not only highlights the value of research to users, and society more broadly, but can also enhance the impacts from existing and future research by revealing insights into the processes by which impacts occur. These insights can be used to inform the commissioning and management of new research so that it is more likely to result in research of both high quality *and* high impact. Viewed in this manner impact evaluation is a cost-effective use of resources.

This Guide

This ‘how to’ Guide is an output from the SKEP Call 2 - Science to Policy Process project, ‘An assessment of current approaches towards the evaluation of the uptake and impact of research projects and programmes by environmental policy-makers’. Its aim was to develop an approach for the evaluation of the implementation and uptake of environmental research and guidelines for its use by the SKEP Network.

The challenge for the project has been not that there is a lack of approaches that can be used to evaluate the uptake and impact of research on policy – there are plenty – but rather how to choose between them and how to tailor the chosen approach to particular and varying organisational needs. This seven step Guide was developed to address this challenge. A prescriptive approach to evaluation was considered inappropriate.

The seven step process described in this Guide, which is illustrated in summary form in Figure 1 below, provides a practical tool to assist in the selection, development and implementation of an evaluation framework to assess the uptake and impact of (environmental) research on policy. The output that should result if the seven steps are followed should be an evaluation framework tailored to the specific needs of the organisation using it.

We developed the approach in the expectation that it would be used by those commissioning or managing research in the research directorate of a national environmental agency or ministry – i.e. a typical SKEP Network member – but who may not necessarily be an expert in evaluation design and implementation.

The pages following Figure 1 describe each of the seven steps in more detail and the activities that users of the Guide will need to undertake to develop and implement a research evaluation framework. This Guide is supported by more detailed information in the accompanying document '*How to evaluate the impact of environmental research on policy: Guidelines and supporting information*' (referred to as the 'Guidelines' through the rest of this document). This more detailed material is intended to assist in making the decisions that need to be taken at each step of the process and also provides general background to the issues surrounding research impact evaluation. The final report associated with this Guide gives details of the work conducted during this project. A fully referenced literature review and set of nine case studies were conducted as part of this project. These informed much of the content of the Guide and Guidelines, and are available as separate standalone documents, allowing those interested to follow up the original sources in detail.

Using this Guide

The Guide and the Guidelines can be read quickly to gain an overview of the issues that need to be addressed in planning and delivering an evaluation of research impact. Alternatively, individual sections can be read for advice on specific evaluation issues or methods. However, more time and staff input will be required in order to actually develop an evaluation framework using the Guide and Guidelines. A few hours to a day working through the steps below and discussing and agreeing the outputs from them should result in an outline research evaluation framework suitable for seeking organisational approval to proceed. More time will be then required to refine and translate the framework into a detailed evaluation plan and guidance is provided on the issues that will need to be addressed in doing this.

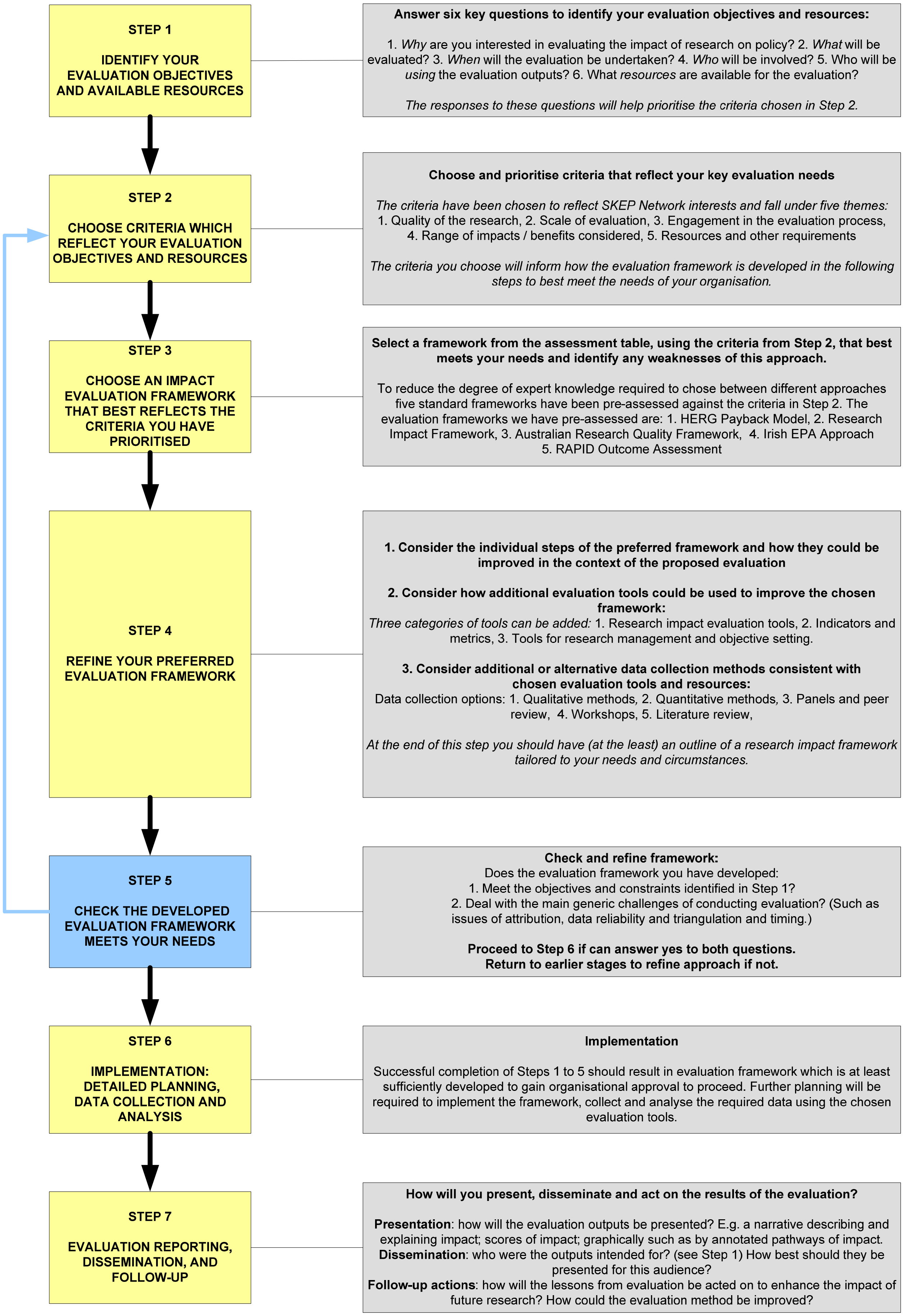
Ready-to-use evaluation frameworks

We realise that not all members of the SKEP Network interested in research evaluation will necessarily want, or have the time, to work through this Guide to develop a tailored research impact evaluation framework. We have therefore used the process described below to develop two complementary ‘ready-to-use’ evaluation approaches. These have been developed to respond to two common research impact evaluation needs identified by the SKEP Network.

The first need identified was the requirement for a pragmatic quick and light-touch impact evaluation framework to be used where time and resources for research evaluation are limited. The second was the need for a more strategic impact evaluation framework which would be used to facilitate organisational learning and better planning and management of research programmes in order to both monitor and enhance the impact of the research outputs. Details of the two developed frameworks are given in the Guidelines, together with an outline of how this Guide was used to develop the two frameworks, i.e. a worked example of how to use this Guide.

Research impact evaluation is a fast developing and complex area. The Guide, Guidelines and additional material in the final report, literature review and case studies are intended to provide an accessible and practical approach that can deal with this complexity, but which is supported by progressively more detailed supporting information for those that might want it. We hope it will be used to develop new approaches to evaluation and stimulate debate on how best to evaluate research impacts in the SKEP Network and more widely. We are keen to have feedback on its use and details of any evaluation approaches and outputs it may lead to.

Figure 1: How to evaluate the impact of environmental research on policy – summary.



Instructions for using this guide

Work through Steps 1 to 7 one by one. For each step:

- **Read the background** material given, referring to the Guidelines if necessary for further details.
- **Conduct the activities** indicated.
- **Capture the outputs** from these activities.

This and the following page can be detached and used to record the outputs from Steps 1-5. This should result in an outline plan for your evaluation framework and a structure for the more detailed planning that will be required to implement it. The Guidelines contain **two worked examples** that illustrate this process in practice and the types of evaluation framework that could result from using the Guide. It may be useful to read these in advance of working through the 7 steps.

Step 1: Identify your evaluation objectives and available resources
Output - Answers to planning questions

1. Why are you interested in evaluating the impact of research on policy?

   ____

2. What will be evaluated?

   ____

3. When will the evaluation be undertaken?

   ____

4. Who will be involved in the evaluation?

   ____

5. Who will be using the evaluation outputs?

   ____

6. What resources are available for the evaluation?

   ____

Were any other important considerations identified?

____

Step 2: Choose criteria which reflect your evaluation objectives and resources
Output – Criteria used to inform choice of evaluation framework

Essential criteria: ______________________________

Desirable criteria: ______________________________

Unimportant criteria: ______________________________

Step 3: Choose an impact evaluation framework that best reflects the criteria you have prioritised
Output – a preferred framework

Which framework appears to best suit the criteria identified in Step 2?

____

Scores for frameworks:

HERG ___, RIF ___, Irish EPA ___, Aust RQF ___, Rapid ___

Scoring approach and weighting used (if any): ______________________

Weaknesses identified in framework:

____

____

____

Step 4: Refine your preferred evaluation framework
Outputs – identification of weaknesses and methods to address them

How are weaknesses of the preferred approach to be addressed?

____

____

Additional evaluation tools to be incorporated?

____

____

Additional data collection methods to be incorporated?

____

____

Data availability and quality issues?

____

____

Step 5: Check the developed evaluation framework meets your needs
Output – an outline framework that meets your needs

1. Does the research impact evaluation framework developed meet the requirements identified in Step 1? What issues still need to be resolved?

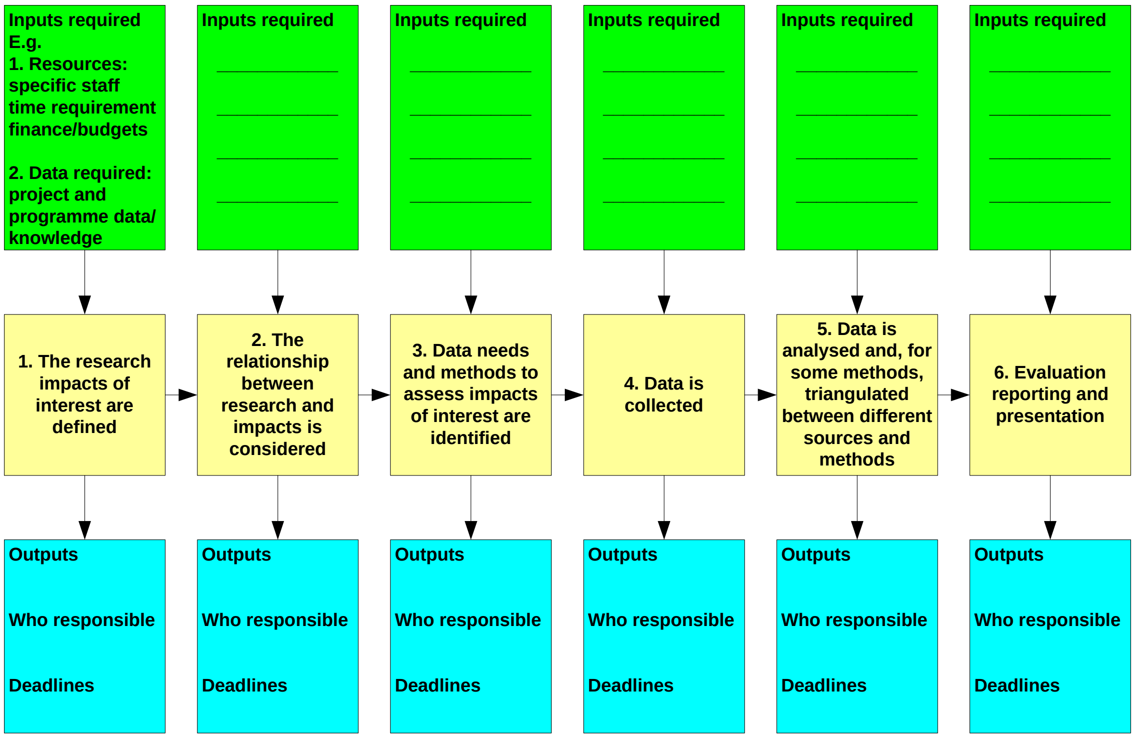
   ____

   ____

2. Does the framework developed deal with the main generic challenges associated with research impact evaluation? What issues still need to be resolved?

   ____

It may be helpful to portray the outputs from this process visually, for example based on the steps of evaluation illustrated in Figures 2 and 3. Each step would specify tasks to be completed, with an indication of the inputs of resources and data required, outputs and responsibilities for actions, etc, required at each step. For example:



Step 1: Identify your evaluation objectives and available resources

Before an organisation can begin to consider how best to evaluate the impact of their research on policy, the objective of the evaluation and resources available for it need to be clear. These can be established by answering the six context-relevant questions below:

1. **Why are you interested in evaluating the impact of research on policy?**
   - What is your motivation and what do you hope to achieve in the evaluation?
2. **What will be evaluated?**
   - What sort of research will be evaluated and what impacts are you interested in? Were any impact-related objectives set at the outset of the research project/programme which you would like to review?
3. **When will the evaluation be undertaken?**
   - During or following research? How long after? How much time do you have to conduct an evaluation?
4. **Who will be involved in the evaluation?**
   - Researchers, research managers, funders, and/or users? Who is available?
5. **Who will be using the evaluation outputs?**
   - Researchers, research managers, higher management, funders, and/or users?
6. **What resources are available for the evaluation?**
   - Money, staff time, data, stakeholder input, expertise?

Answering these questions is an important step in planning the development and implementation of a research impact evaluation framework. They will also help to identify the capacity the organisation has to conduct the evaluation and what external support, if any, is likely to be needed.

Further information on the issues associated with these six questions is given in the Guidelines accompanying this document. This includes, for example, the different reasons for wanting to evaluate research, the importance of timing in evaluation and how different types of research (e.g. applied or basic) may affect the choice of evaluation methodology.

The responses to these questions should help to prioritise the criteria chosen in Step 2 and, subsequently used in Step 5, to refine the developed framework.

Activities and output from STEP 1
Members of the group considering the development of the evaluation framework should answer these questions individually and then discuss them as a group with the aim of

clearly identifying a shared understanding of the evaluation objectives and any obvious constraints that may affect it. Issues of how to conduct the evaluation should **not** be considered in this step.

Step 2: Choose criteria which reflect your evaluation objectives and resources

The responses to the questions in Step 1 should have identified the evaluation needs and constraints of the organisation planning the evaluation. The aim of Step 2 of the model is to ensure these are reflected in the evaluation framework developed in Steps 3 to 5.

In this step, users identify the criteria which are most relevant to their evaluation needs from those given below in Table 1. These criteria are used in subsequent steps of the process to help choose between different evaluation options and identify their strengths and weaknesses. These criteria have been chosen to reflect the range of needs across the SKEP Network.

Table 1. Criteria relevant to SKEP Network evaluation framework needs

<u>**Consider each criterion below and:**</u> 1. **Ask 'How important is it that your evaluation… (*insert criterion*)?'** 2. **Agree the level of importance it has for your proposed evaluation.**	**Importance** *1 = unimportant 2 = desirable* *3 = essential*
Quality of research	
1. Evaluates quality of research? How important is it for the evaluation to focus on the *quality* of the research outputs as judged by peers, research managers, commissioners and users as opposed to the impact of the outputs.	
Scale of evaluation	
2. Evaluates individual *projects* effectively?	
3. Evaluates *programmes* effectively?	
Engagement in evaluation process	
4. Provides opportunities for internal consensus building and organisational learning? Is an aim of the evaluation to generate internal lessons and awareness within the research commissioning organisation on the value and impact of research and how to enhance this in future?	
5. Engages external stakeholders? Is an aim for the evaluation to engage with, and gain feedback from, those involved in the research outside the commissioning organisation, e.g. researchers, their peers, external funders and users of research?	
Range of impacts/benefits considered	
6. Considers short-term to long term impacts? How important is it for the method to be able to investigate impacts at a variety of timescales whether short, medium or long term? Separate issues are: the timing at which the evaluation is best conducted to both allow impacts to have occurred and capture them; and the speed with which it can be conducted, which are addressed	

by Criteria 13.	
7. Provides a summary impact score allowing comparison? Scores will clearly communicate impacts and enable comparison between projects and programmes but will not provide an explanation of the impacts.	
8. Describes and explains impacts? How important is it that the evaluation framework both describes *and* explains impacts and the mechanisms behind them rather than just rating or scoring the degree of impact? All the frameworks considered in Step 3 at least describe the impacts but vary in the degree to which they explain the mechanisms of impact.	
Resources and other requirements	
9. Can be conducted at low cost? What is the likely cost and staff time requirement of the approach desired? These tend to be equivalent but some methods can be expensive with low staff time requirements as they are conducted by external consultants.	
10. Does not require a high level of internal evaluation expertise? Some evaluation methods require specific skills (depth of expertise) and others a range of skills (breadth of expertise) to conduct effectively. Others are more straightforward and do not require specific evaluation skills.	
11. Is independent? Is it important that the evaluation is conducted by an independent body? This needs to be balanced against the learning and communication benefits of an internal evaluation.	
12. Produces results with high confidence and rigour? All the methods will identify impacts from research. While increasing confidence and rigour is obviously desirable, achieving it will tend to increase the costs of data collection and analysis and require triangulation of results from different methods, and engaging more stakeholders in the evaluation process. There is therefore a need to balance desire for confidence and rigour with the availability of resources.	
13. Can be conducted quickly? How quickly are evaluation results needed? Are impacts likely to have had a chance to occur by the time of the evaluation?	

Activities and Output from Step 2

Users should work through the list of criteria in Table 1 ranking the importance of each criterion as ‘essential’ (rank 3), ‘desirable’ (rank 2) or ‘unimportant’ (rank 1).

The key aim is to identify the essential criteria for the evaluation to fulfil. These criteria will be used in Step 3 to assist in choosing an appropriate evaluation framework.

Step 3: Choose an impact evaluation framework that best reflects the criteria you have prioritised

This step is intended to assist in the selection of an evaluation framework that meets a specific user's needs but with a reduced requirement for expert input. It is based on an assessment of the performance of five standard evaluation frameworks against each of the criteria listed in Step 2. The result of this assessment is given in Table 2 below.

The five evaluation methods we have pre-assessed are:

1. **HERG Payback Model –** A comprehensive framework for recording the wider impacts of research across five domains: services; policy; practice; research; and capacity-building. Incorporates qualitative and quantitative data collection.
2. **Research Impact Framework (RIF) –** an easy-to-use framework that includes descriptive categories to prompt researchers to systematically explore and describe the impact of their work.
3. **Irish Environmental Protection Agency (EPA) –** an indicator-based approach which uses an expert panel to assess research quality and impact based on an assembled evidence portfolio.
4. **Australian Research Quality Framework (RQF) –** a similar approach to the Irish EPA one but with a wider composition to the expert panel and a more detailed evidence portfolio.
5. **RAPID Outcome Assessment (ROA) –** A participatory mixed-methods framework to map visually the impact of a programme (including research, events and actors) on policy and the policy environment.

These five evaluation frameworks were chosen from a larger number of evaluation approaches identified in the literature review conducted by this project. These five approaches were chosen as they appear to be complete evaluation frameworks whereas the others were more narrowly defined evaluation tools. Except for one of the five frameworks (the Australian RQF), they have each been used and adapted successfully in practice, display an element of flexibility, range from being comprehensive to more focused, and have the potential to be of value in addressing the needs of the SKEP Network.

Details of the frameworks and their strengths and weaknesses are given in the Guidelines. However, a brief inspection of Table 2 will demonstrate that no method performs well against all criteria and there are tensions to be balanced in picking a method suitable for a particular situation.

Activities and Outputs from Step 3

Table 2 should be used to identify which evaluation frameworks perform well against the criteria identified by users as important in Step 2.

The assessment can be done informally by discussion and agreement. Alternatively, a more formal scoring system can be used, possibly with increased weightings given to key criteria. (A spreadsheet is available to assist in this process if required.) Initially it may be worth ranking using the essential criteria and then adding in desirable, with a lower score per criterion to see how this affects the score. Using a small number of essential criteria (not more than 3 or 4) will be likely to differentiate the methods more effectively than if more essential criteria are chosen. If a scoring approach is used care needs to be taken that the direction of increase of each individual criterion's ranking aligns with a user's priorities. In some cases this may require a criterion ranking to be reversed (e.g. 1 to 5 or 5 to 1).

The aim of the table and scores it can generate is to *guide* the user to an appropriate framework and prompt discussion of the strengths and weaknesses of an approach rather than to provide a definitive answer on which approach is best. An over-formalised scoring system may therefore be inappropriate. There are also likely to be tensions between criteria which are hard to resolve, for example, detailed and comprehensive evaluation approaches inevitably cost money. However, it should be possible to balance these tensions in most cases, for example, to provide a method that provides sufficient rigour but that can be delivered with available resources.

Consideration of Table 2 and the scores it gives should indicate a preferred framework, or at least narrow down the options.

At this stage we would advise that the details of the methods given in the Guidelines are read to understand the approaches (and their strengths and weaknesses) more clearly, particularly thinking about the context in which they may be used. Any weaknesses identified should be noted so they can be addressed in later stages by adding (or removing) impact themes, evaluation tools or data collection methods from different approaches.

Table 2: Performance of evaluation frameworks against key criteria of interest.

Use this table to score the frameworks against the criteria of most importance to the user. Use the scores to inform discussion rather than make the decision on which framework best meets your needs. See text for more details.

Assessment Criteria	HERG Payback	RIF	Irish EPA	Aust. RQF	RAPID Outcome Mapping	Importance of criteria – *from Step 2*
Quality of research						
1. Evaluates quality of research ✓ = not considered, ✓✓✓✓✓ = assessed	✓✓✓✓✓	✓	✓✓✓✓	✓✓✓✓	✓✓	
Scale of evaluation						
2. Evaluates individual *projects* effectively ✓ = not effective, ✓✓✓✓✓ = effective	✓✓	✓✓✓✓✓	✓✓✓	✓✓✓	✓✓✓✓✓	
3. Evaluates *programmes* effectively ✓ = not effective, ✓✓✓✓✓ = effective	✓✓✓✓✓	✓✓	✓✓✓✓	✓✓✓✓	✓✓✓	
Engagement in evaluation process						
4. Provides opportunities for internal consensus building and organisational learning ✓ = limited, ✓✓✓✓✓ = considerable	✓✓	✓	✓✓✓	✓✓✓	✓✓✓✓✓	
5. Engages external stakeholders ✓ = limited, ✓✓✓ ✓✓= extensive	✓✓✓✓	✓	✓✓	✓✓✓	✓✓✓✓✓	
Range of impacts/benefits considered						
6. Considers short-term to long-term impacts ✓ = not considered, ✓✓✓✓✓ = in-depth	✓✓✓✓✓	✓✓	✓✓✓	✓✓✓	✓✓	
7. Provides summary impact score allowing comparison ✓ = little/no scoring, ✓✓✓✓✓ = score provided	✓✓	✓	✓✓✓✓✓	✓✓✓✓✓	✓	
8. Describes and explains impacts ✓ = describes…, ✓✓✓✓✓ = …and explains	✓✓✓✓✓	✓	✓✓✓	✓✓✓	✓✓✓✓	
Resources and other requirements						
9. Can be conducted at low cost ✓ = high cost, ✓✓✓✓✓ = low cost	✓	✓✓✓✓✓	✓✓✓	✓✓✓	✓✓	
10. Does not require a high level of internal evaluation expertise ✓ = high expertise, ✓✓✓ ✓✓= limited expertise	✓	✓✓✓✓✓	✓✓✓	✓✓✓	✓✓	
11. Is independent ✓ = low, ✓✓✓✓✓ = high	✓✓✓✓✓	✓	✓✓	✓✓✓	✓✓✓✓	
12. Produces results with high confidence and rigour ✓ = low, ✓✓✓✓✓ = high	✓✓✓✓✓	✓	✓✓✓	✓✓✓✓	✓✓✓	
13. Can be conducted quickly ✓ = slow, ✓✓✓✓✓ = quick	✓	✓✓✓✓✓	✓✓	✓✓	✓	

Score of method against key user criteria						

Step 4: Refine your preferred evaluation framework

Step 3 should have identified a preferred framework for evaluation and also weaknesses it may have, either generally or in the proposed context of use.

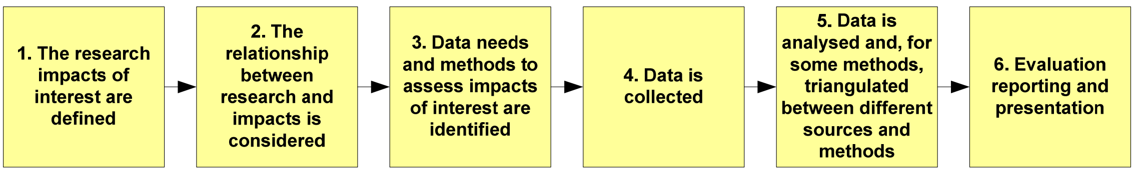
These weaknesses can be addressed in two ways.

Firstly, by considering the chosen framework alone and how elements of it could be improved, for example, by emphasising or downplaying particular impact categories/themes included in the framework. Secondly, further evaluation tools, data collection methods and/or elements of other frameworks can be added to create a hybrid approach.

If Step 3 has not resulted in one preferred framework, the strengths and weaknesses of the short-listed frameworks may be explored in more detail in order to arrive at a preferred method. This process may be assisted by examining the specific steps of the different frameworks (as outlined below) and the fuller descriptions (given in the Guidelines).

Enhancing specific steps of the chosen framework
Each of the five evaluation frameworks considered in Step 3, very broadly consist of six similar steps, as illustrated in Figure 2.

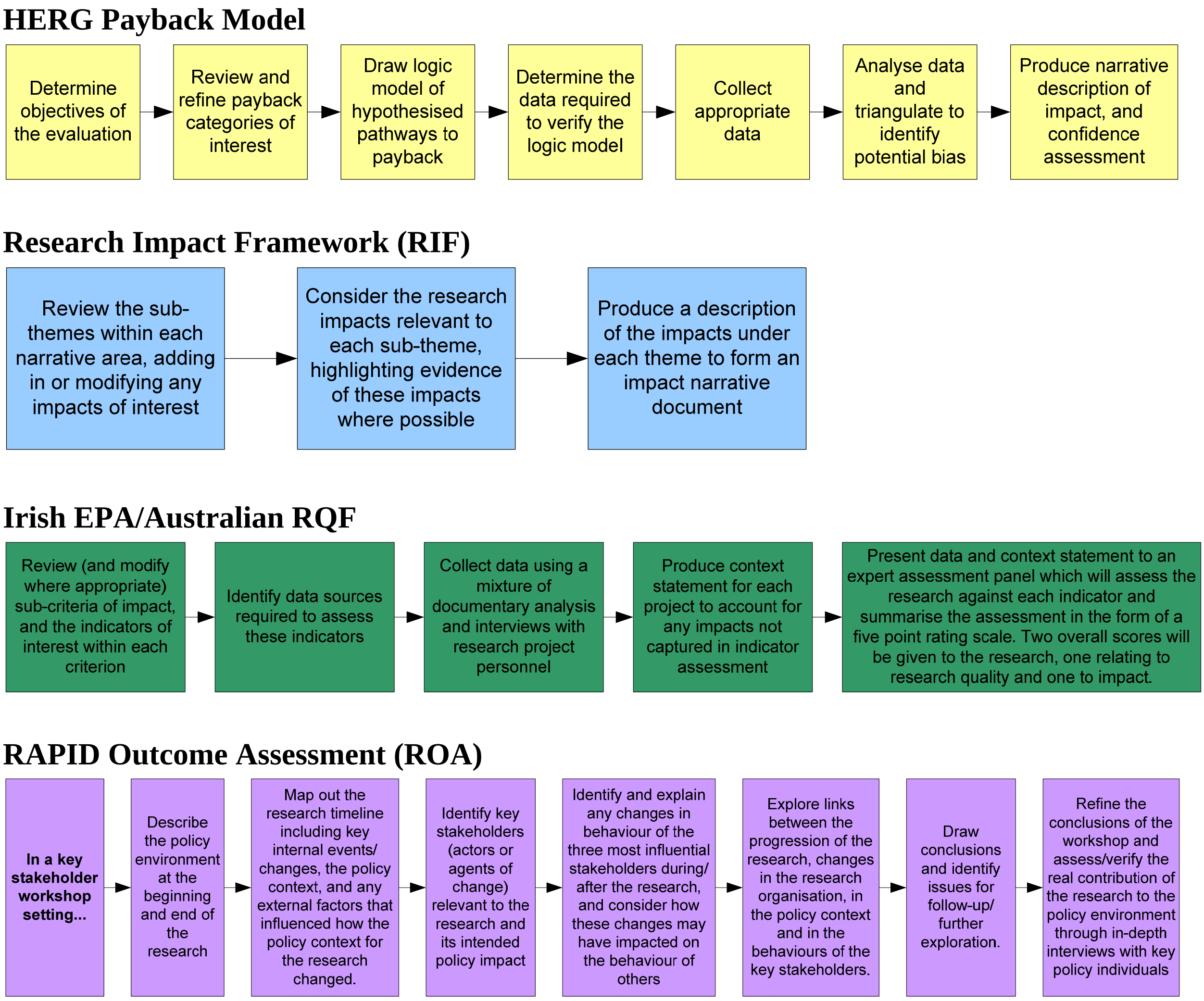
Figure 2. Six Generic Steps of Impact Evaluation



The steps of the preferred framework should be considered in the proposed context of use and against the identified criteria of importance. Does the preferred framework show weaknesses in any of its steps and how might these be addressed?

Figure 3 below gives the steps of implementation for each of the five frameworks used in Step 3 to enable this process of considering and addressing weaknesses.

Figure 3. Steps of Implementation of the Five Evaluation Frameworks



Additional evaluation tools and data collection methods to incorporate into the preferred framework.

It may be necessary to bring in additional evaluation elements or data collection approaches in order to address specific weaknesses of the chosen framework in relation to the identified evaluation needs.

Nineteen additional evaluation tools have been identified which are of potential use to SKEP Network members in augmenting the five main frameworks. These possible additional tools can be subdivided into three categories:

a. **Research impact evaluation tools**. These are discrete evaluation tools that could be incorporated into the broader impact evaluation framework, for example, to explore potential areas or types of impact; to put an economic value on previously identified impacts; or to address the issue of attribution. **Methods include**: impact pathway mapping/logic models; episode studies;

outcome mapping; simulation; economic analysis; social analysis and use of counterfactuals.

b. **Indicators and metrics.** These can be used to provide a summary rating of impacts against important criteria and also allow comparisons to be drawn across different projects or programmes or between the perceptions of different individuals involved in the research/evaluation process. **Methods include**: benchmarking and the balanced scorecard approach.

c. **Tools for research management and objective setting**. These tools enable the evaluation of impact through a focus on the research process and its management, for example, through formalising the impact objectives of a research programme at an early stage of research. The impact objectives can then be evaluated either during the research or following research completion. These tools can be used to assist organisations in considering how to enhance the impact of their research or to consider the impacts that research may have had. **Methods include:** Logical Framework Analysis; ROAMEF (Rationale, Objectives, Appraisal, Monitoring, Evaluation, and Feedback); and Results-Based Management and Accountability Framework.

Details of these additional tools and their strengths and weaknesses are given in the Guidelines.

Additional or alternative data collection methods

Careful selection of data collection methods can also help to overcome weaknesses in the selected evaluation framework. The HERG framework, for example, could still be used where resources are more limited by adopting less resource-intensive data collection methods, such as web-based user questionnaires rather than face-to-face in-depth interviews.

Consideration will need to be given to where or who data are sourced from and the methods by which they will be collected. The realities of the policy-making process and diverse routes that can lead to impact should be acknowledged in the choice of methods made. For example, formal dissemination routes, contacts between researchers and policy-makers at conferences and other informal fora and the impact of media picking up research findings.

There is a need to ensure that appropriate data for the chosen evaluation method(s) can be collected in terms of data availability and quality and the cost of collection.

The project's literature review highlighted a wide range of methods for gathering data that may be used in impact evaluations, details of which are given in the Guidelines along with their strengths and weaknesses. These methods can be grouped into five broad categories:

1. *Qualitative methods,* including semi-structured interviews, documentary analysis, field visits and observations. These methods generate rich descriptive and explanatory data sets but are often resource intensive, and it can be difficult to generalise their findings.
2. *Quantitative methods,* including surveys, bibliometrics and patent/new technology tracking. These methods are used to quantify the impact of research, are suitable for comparisons and can be relatively inexpensive. However, they are often difficult to use in the analysis of research impact and survey response rates can be poor.
3. *Panels and peer review.* This is a relatively flexible and cost-effective approach to generate evaluation data. Experts and peers bring credibility to the process and build ownership of the findings. These methods, however, tend to focus on the quality, rather than impact, of research and panels are heavily reliant on the quality of their membership.
4. *Workshops and focus groups.* This is an interactive, consensus building approach, but is not suitable for all topics (e.g. sensitive topics that generate polarised views) and can lack rigour and objectivity without skilled facilitation.
5. *Literature review.* This method is usually used as part of a mixed method study to scope a topic and place the impact evaluation in its wider context.

There is some overlap between the methods in these categories and the evaluation tools as the boundary between data collection methods and analytical tools is blurred. In using the Guide and selecting methods the analytical uses of the tools and the data requirements to conduct them both need to be considered.

Different types of data can, and probably should, be used alongside each other in a single evaluation. Quantitative and qualitative approaches can usefully be integrated into one evaluation balancing the communicative power of numbers and descriptive power of words. A mixing of methods is generally desirable to achieve ‘triangulation’ or cross-checking of results from different methods to overcome the problem of subjectivity or variability of results from different methods which is commonly associated with impact evaluations. Many of the sources used for research impact evaluation rely on the memory and perceptions of those involved in *conducting* and/or *using* the research.

Examples of adapted or hybrid frameworks

Some examples of how the frameworks can be developed or hybridised by combining elements from different frameworks, or by adding extra evaluation tools and data collection methods are given below. These examples draw on the case studies of research impact evaluation approaches conducted by this project. Further details of the case studies referred to are given in the Guidelines and Case Studies report.

Varying the impacts of interest

- The research impacts of interest included in the frameworks could be transferred from one framework to another, e.g. by altering the HERG’s payback categories using RIF’s impact themes/sub-themes or vice versa.

Increasing evaluation independence

- The approach of the Irish EPA could be developed by using a method similar to the double-scoring of the Finnish balanced scorecard approach, in which both the researchers and an external research user rate the impact and quality separately. This would bring in a greater element of independence to the evaluation.

Building consensus

- The Environment Agency (England and Wales) post-project appraisal approach is similar to the RIF approach, in that it is only the researchers that consider the impacts of their research, but it is conducted in a workshop. This format allows input and cross-fertilisation of ideas about impact from multiple researchers working on a project/programme. This could be used as a way of developing the RIF approach to achieve greater consensus on project/programme impacts.

Involving research users in evaluation

- The Finnish balanced scorecard approach could be likened to the RIF approach but both the researcher and the key (commissioning) user score the impact of the research increasing the confidence in its results. This double scoring approach could represent a mechanism for developing the RIF method to allow greater input from the primary research users into the evaluation process.

Triangulation of results

- The New Zealand (Foundation for Research, Science and Technology) approach could be interpreted as combining elements of all of the frameworks.
- Case studies of impact are undertaken by the researchers themselves, which is similar to the RIF approach, but a greater degree of user verification is sought.
- Interviews are conducted with key users, in which respondents are asked to both describe and rate the positive outcomes and impacts resulting from the research. The ratings could then be used to gain a numerical score of impact as in the Irish EPA approach.
- The types of impacts considered in the web-based user questionnaires and the key informant interviews touch on various areas of ‘payback’ and ‘outcomes’ explored in the HERG and RAPID models, but in a less structured way.
- By combining a small number of in-depth interviews conducted with key end-users of the research (as identified by independent consultants) with the use of a short web-based questionnaire sent to a large number and diversity of potential users, this method provides the triangulation and independence that RIF is lacking, but is considerably less resource-intensive than either the HERG or RAPID approaches.

Activities and Outputs from Step 4

Any weaknesses identified in Step 3 should be considered.

Is the framework chosen weak in any of the generic or specific steps of evaluation indicated in Figures 2 and 3 above? Can these be addressed:

1. Within the framework by emphasising/downplaying particular aspects of the approach? For example, by increasing or decreasing the amount or type of data collected in a framework.
2. By incorporating additional evaluation tools/metrics?
3. By incorporating additional or alternative data collection methods?

The data collection implications of the developed framework should be considered. What is the likely availability and cost of obtaining data from different sources? Are any particular sources of data needed to explore key objectives of the evaluation?

The availability of skills or expertise that particular data collection methods may require will need to be considered and this may affect costs significantly.

Reliability of sources and how they will be cross-checked or triangulated between methods should also be considered.

The Guidelines provide background information that can be used to assist this discussion.

At the end of this step an evaluation framework should have been chosen and adapted as required using additional evaluation tools and data collection methods suited to the proposed use.

Step 5: Check the developed evaluation framework meets your needs

Once the framework and associated data collection methods have been developed, the resulting approach should be checked to ensure that, firstly, it meets the needs and is consistent with the constraints identified in Step 1 of the process and, secondly, it deals with the generic challenges of conducting a research impact evaluation.

If the approach appears to address these questions satisfactorily it is possible to proceed to more detailed planning for data collection, analysis and reporting – the implementation of the evaluation. If not, there will be a need to revisit the earlier steps to modify the approach further.

Activities and Outputs from Step 5

Two main questions need to be addressed:

1. **Does the research impact evaluation framework developed meet the requirements identified in Step 1? Is it clear:**

   - Why you are evaluating the impact of research on policy?
   - What will be evaluated?
   - When the evaluation will be undertaken?
   - Who will be involved in the evaluation?
   - Who will be using the evaluation outputs?
   - That the approach can be completed with the resources available?

2. **Does the framework developed deal with the main generic challenges associated with research impact evaluation? Have you considered:**

   - The relationship between research and policy and the likely pathways and mechanisms by which impact might occur? Is this reflected in the design of your evaluation framework?
   - How to deal with the issue of attribution? I.e. the causal linking of impacts to research, as opposed to other influences.
   - How to address data reliability? For example, are mixed methods used to cross-check and triangulate results?
   - What is the best time to conduct the evaluation? Has sufficient time passed for likely impacts and/or impacts of interest to have occurred and be captured?

Further details of the issues around evaluation are given in the Guidelines document.

Step 6. Implementation: detailed planning, data collection and analysis

Successful completion of Steps 1 to 5 should result in an evaluation framework which is at least sufficiently developed to seek broader organisational approval to proceed. More detailed planning is likely to be required to actually implement the framework, including collecting and analysing the required data using the chosen evaluation tools.

Evaluation project management
Depending on the scale of the evaluation developed it may be best to plan the evaluation using standard project planning techniques, including the appointment of a project manager for the evaluation and outlining tasks that need to be completed.

This could cover, for example, the appropriate sequence of tasks (including consideration of any dependencies between tasks); the schedule and deadlines for tasks to be completed; people who need to be involved in them; responsibilities for task completion; and allocation of budgets. Documenting all these aspects in a written evaluation plan may be excessive for lighter touch frameworks, but will be important for larger scale evaluation exercises that collect data from multiple sources using multiple evaluators, particularly when this is conducted over an extended period of time by multiple evaluators.

Building organisational buy in
Where the focus of evaluation is internal learning and consensus building the planning stage is an important opportunity to start engaging with people across the organisation and, if necessary, reflecting any concerns that may be raised in the evaluation design. Similarly, consideration needs to be given to how best to engage external users if this is the target of the evaluation.

Data quality
Good quality data is essential for a high quality evaluation. Consideration will need to be given to how appropriate quality data is collected and the possible limitations of different data sources. The data collection methods should have been chosen in previous steps but implementing them requires consideration of a number of issues in order to ensure collection of high quality data. This guide cannot go into specific issues associated with data collection for all the methods indicated but some general principles of data collection will need to be addressed during the planning stage. This will involve issues associated with the design of the method used, for example, the choice and framing of survey or interview questions; ensuring appropriate samples (including size of sample and overcoming any biases likely to be present); quality control issues, especially consistency of data collection procedures if multiple evaluators are involved at different times; and systems for capturing, processing, and storing data.

Ethical and legal aspects of data collection
Good practice in terms of the ethical and legal aspects of data collection, processing and publishing should be considered. Participants should be engaged on the basis of 'informed consent' which makes clear to participants what data are to be collected and how they will be used, for example, specifying the level of attribution, and how data confidentiality and participant anonymity will be maintained. Legal aspects of data protection must also be complied with and the possible sensitivities around collection of information from policy-makers considered.

Activities and Outputs from Step 6
If the developed framework is to be implemented, detailed planning needs to be undertaken to produce a final evaluation plan. This will need to:

- Develop an approach to ensure good project management of the evaluation,
- Begin the process of developing organisational and stakeholder buy-in to the process,
- Develop a data collection protocol to ensure good quality and consistent data collection and management processes,
- Address ethical and legal aspects of research evaluation.

At the end of this step: The steps of the proposed evaluation process will be clear and the inputs required at each stage in terms of people's time, or data collection and analysis etc should have been identified.

Step 7: Evaluation reporting, dissemination, and follow-up

Reporting, dissemination and follow-up constitute the final stage of the evaluation process. While these activities tend to come at the end of the process they should be considered from an early stage if the evaluation is to successfully meet its objectives. For example, the intended audience will be an important factor shaping the nature of the outputs of the evaluation and this is reflected in the questions included in Step 1.

Reporting and dissemination
Consideration will need to be given to how the results of the evaluation are reported and disseminated. This will need to cover the format of outputs, for example, briefings and/or longer reports. These are likely to be required in varying levels of detail for different audiences. A format based on key messages in one page, an executive summary in three or four pages and a full report in around 30 pages will generally suit the vast majority of readers' needs. Supplementary material on the evaluation background and methodology can be included in technical annexes.

Engagement with intended users at an early stage of the evaluation is likely to facilitate the identification of the most suitable format for outputs and will also engage these users more effectively than by just sending them a report at the end of the project. The findings from the SKEP Call 2 - Science to Policy Process: Lot 2 project *'An assessment of lessons learned in the communication and dissemination of emerging scientific issues to environmental policymakers'* contains further valuable lessons on communicating results.

The type of reporting can vary depending on the needs and methods of the evaluation. For example, a text-based narrative describing and explaining the research impacts observed will be valuable to research managers and those working in knowledge transfer; an indicator-based approach which gives scores reflecting impact in different areas may be of use to those dealing with large numbers of projects such as funders or research management boards; or graphic depictions of research impacts and the methods by which they have occurred may be useful for non-expert audiences.

Written reports, whether long or short, shouldn't be seen as the only dissemination route. Findings can be presented to and discussed directly with those interested and also disseminated via relevant networks.

Consideration should also be given to the confidence and reliability of the evaluation findings and the impacts that may have been missed or not yet have occurred.

Evaluation follow-ups
Two broad types of evaluation follow-up activity can take place. The first is to ensure the findings from the evaluation are communicated both in reports but also directly, for

example, in briefing meetings, to those who might act on them to improve the impact of an organisation’s research. This may be in terms of how to specify research and manage it; how to develop the institutional relationships and channels of communication that exist between research bodies and users of research; and/or guidance to researchers on conducting research to deliver impact. Alternatively, the evaluation should be used to make the case in terms of public value to the ultimate funder of the research programme in brief but easy to understand terms.

The second follow-up activity is to consider the evaluation framework used and capture lessons on how it might be improved to deliver better evaluation processes and outputs in the future. How a particular framework contributes to an organisation’s overall approach to evaluation may also be usefully considered. For example, should frequent light-touch evaluations of projects be complemented by less frequent but more comprehensive programme evaluations and how are these approaches integrated into management systems?

Activities and Outputs from Step 7

As noted above the evaluation reporting, dissemination and follow-up should be considered from an early stage of developing and planning the evaluation to enhance its likely success. However, plans should be flexible and reviewed periodically to respond to both the findings emerging from the evaluation and any change in the external context.

The output from Step 7 should be a completed evaluation, which is documented and communicated in an appropriate format to interested parties including those who may act on the findings of the evaluation.