

# SCAR

Standing Committee  
on Agricultural Research



## PROGRAMMING RESEARCH AND INNOVATION (R&I) FOR IMPROVED IMPACT



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**SCAR Strategic Working Groups:  
ARCH, AKIS & FOOD SYSTEMS**

**Disclaimer:**

*This Policy Brief was written by the members of the SCAR Strategic Working Groups ARCH, AKIS, and Food Systems (SWG) and solely represents their views. The views expressed do not represent an official position by SCAR or any EU Member States, Candidate or Associated countries.*

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## **Programming Research and Innovation (R&I) for Improved Impact**

This Policy Brief is based on inputs from experts of the SCAR Strategic Working Groups ARCH, AKIS and Food Systems and the discussions and conclusions from a joint workshop in Rome on 6<sup>th</sup> April 2018. The brief primarily targets R&I policy-makers and funders in the European Commission and in national ministries. However, it is also intended to provide value to researchers and their institutions.

### **Introduction**

Agricultural R&I systems are increasingly open, complex and changing rapidly. In recent years, the R&I community has been asked to focus on, measure, document and demonstrate ex post impacts of their activities be they economic, societal or environmental in addition to traditional scientific impact. Although there are funding programmes that list the impacts required up-front, it is necessary to do more to increase the general focus on impact during proposal development and in the planning and early stages of R&I activities. There is a clear rationale for this, but relatively little attention has been paid to the likely effects of initiatives *before* activities actually start - how to foster impact, and to the generation within the R&I community of a culture of impact<sup>1</sup>. Similarly, there is little understanding of how policy can support ex ante approaches.

Therefore, research and Innovation needs to be developed with impact in mind and a greater focus should be given to impact during proposal development, planning and the early stages of research. There is a need to promote and support a culture at policy, institution and individual researcher level that enables and encourages greater attention to understanding, planning and assessing impact ex ante, in addition to the usual ex post assessment. Key to addressing this challenge is improving understanding of the pathways to impact, including the feedback loops between pathways that can generate both intended and unintended positive and negative impacts, often in complex non-linear systems. This means a co-designed approach to research programmes, projects and the identification of impact pathways is necessary, although the approach will likely differ depending on whether the research is basic or more applied. In terms of innovation, the need to support the type of interactive processes that underpin innovation means that a co-designed, multi-actor approach<sup>2</sup> is also required<sup>3</sup>.

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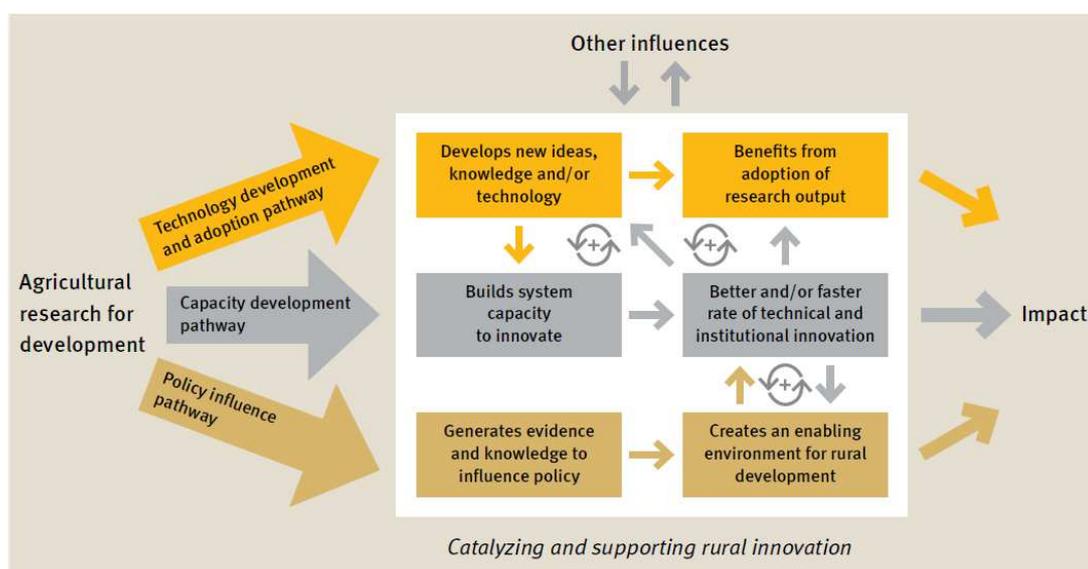
<sup>1</sup> Hainzelin E., Barret D., Faure G., Dabat M-H., Triomphe B. (2017). Agricultural research in the Global South: steering research beyond impact promises. CIRAD, Montpellier, Perspective 42. <https://doi.org/10.19182/agritrop/00009>

<sup>2</sup> See the requirements for "Multi-Actor Approach" in H2020 Work Programme 2018 page 8-9: [http://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-food\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-food_en.pdf)

<sup>3</sup> EU SCAR (2012), Agricultural knowledge and innovation systems in transition – a reflection paper, Brussels Available at <https://scar-europe.org/index.php/akis-documents>

## Research and Innovation pathways

According to Douthwaite et al (2017) impact pathways can be subdivided into three categories: technology development and adoption pathways; capacity development pathways and policy influence pathways (see Figure 1). It is crucial for all stakeholders to have these interactions in mind when starting an ex ante impact assessment of research activities.



**Figure 1: Research and Innovation pathways**

Source: Douthwaite, B., Mur, R., Audouin, S., Wopereis, M., Hellin, J., Moussa, A., Karbo, N., Kasten, W., and Bouyer, J. (2017). *Agricultural Research for Development to Intervene Effectively in Complex Systems and the Implications for Research Organizations*. KIT Working Paper 2017:12.

R&I policy makers and funders have considerable influence in shaping the enabling environment for research and innovation. Policy makers provide the direction for research issues through various R&I policies and funders provide a framework for working through different R&I funding modalities. Researchers are often involved in setting research agendas, but in order for them to secure funding, it is increasingly necessary to measure, document and demonstrate impact prior to implementing research activities, towards the end and after activities have been completed.

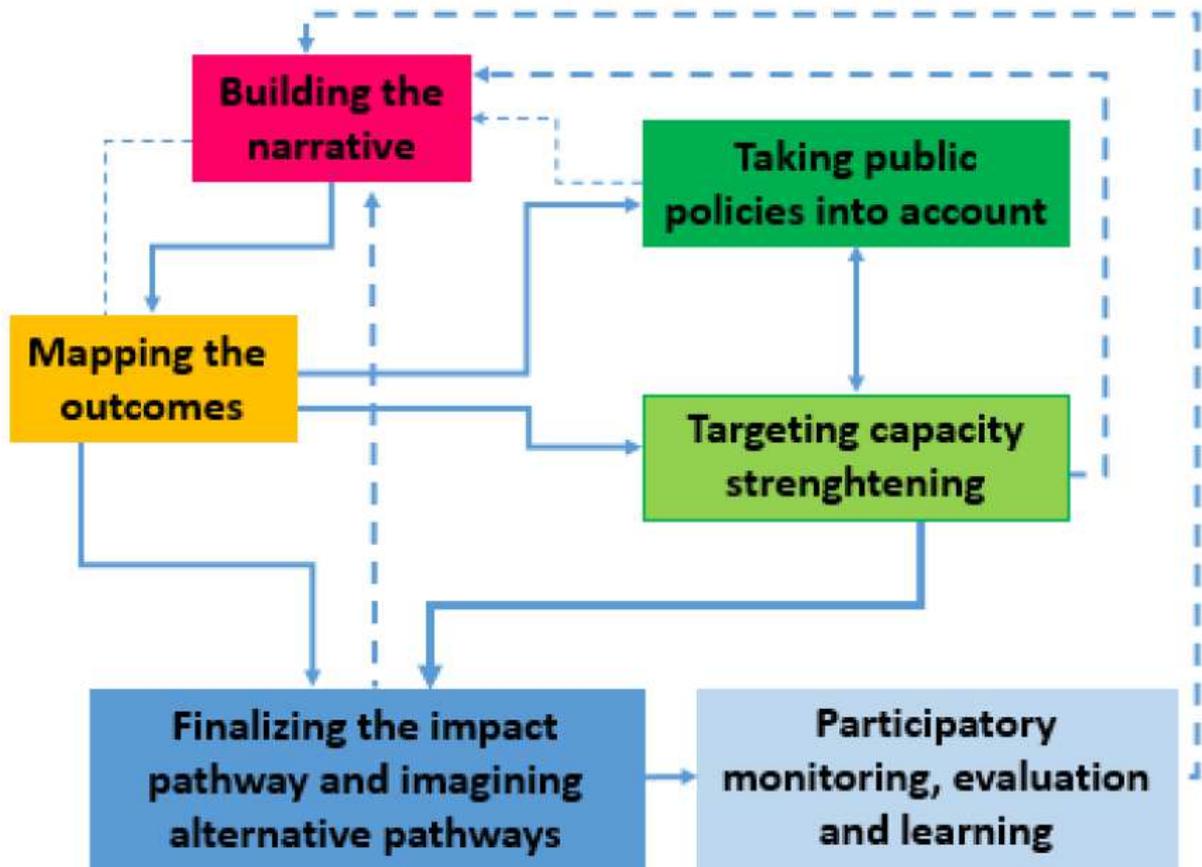
However, impact in complex agricultural or food systems is often hindered by market and policy distortions, barriers to the diffusion of new technology and by the difficulties for researchers to clearly define the end-users of their research and the kind of impact they, therefore, have to achieve. In many cases this requires a multi-actor and interdisciplinary approach where research is embedded within a broader context of economic, political, social and cultural aspects. A clear understanding of the impact pathways is, therefore, key for programming research and innovation for impact.

### Why ex ante evaluation?

By definition, ex ante evaluation, which focuses on how R&I programmes might generate impact, is conducted before implementation, whereas ex post evaluation, which analyses the actual impact of a programme, is carried out after implementation. Increasing the focus on ex ante evaluation will require a cultural shift, as it demands moving the framework from a purely linear approach to a multidimensional model of the R&I pathways. A better understanding of the interactions between the various elements and actors and how this can be used to generate changes in practices and behaviour will be key to programming research that will ultimately lead to better impact. Such an

approach to ex ante programming, where researchers and other actors through a six stage process, construct in a participatory and strategic manner, a shared vision and identify plausible impact pathways through which research teams and their partners expect to contribute to impacts is outlined by Blundo Canto et al (2018) as shown in Figure 2.

Fostering and documenting impact both in the short and the long term will increase impact to R&I programmes and, in addition, provide useful insights for R&I policy makers, helping them to better shape future R&I policies. Furthermore, there is an increasing demand from public and private funders, as well as from society, to measure, document and demonstrate the impact of research, requiring research institutions to improve the uptake of research outputs and the transfer of knowledge, as well as fostering innovation. From both a research and an innovation perspective, a co-designed and co-delivered multi-actor approach is most likely to deliver on these demands. An interdisciplinary approach will help underpin this through, for example, the role of social scientists in facilitating the integration of research and innovation outcomes in society and the evaluation of cultural impact.



**Figure 2: CIRAD flowchart for ex ante programming**  
 Source: Blundo Canto G., Barret D., Faure G., Hainzelin E., Monier C., Triomphe B., Vall E. (illus.), 2018. *ImpresS ex ante*. An approach for building ex ante impact pathways. Montpellier, France, CIRAD, 64 p. ISBN: 978-2-87614-738-6. <https://doi.org/10.19182/agritrop/00013>

## **Fostering impact**

Better understanding of the different impact pathways will enable research managers and funders to influence or even take advantage of the interactions and feedback loops between the different pathways. Furthermore, to foster impact, research and innovation, actors from both the public and private sectors need to be brought into a multi-actor dialogue following an approach such as that outlined in Figure 2. The multi-actor approach will vary depending on the type of research being undertaken i.e. from basic to applied, as it is clear that not all research needs to integrate stakeholders to the same extent. This will require a change in the culture of research organisations as researchers can no longer define their research goals in isolation, but have to interact with other stakeholders to define the real needs of end users of research results. Researchers must encompass “knowledge exchange activities” and consider potential applications for end-users of project results. An environment for supporting impact generation should be strengthened by including actors from knowledge transfer organisations as well as innovation support services and innovation brokering. Following recommendations from the SWG AKIS in its 2<sup>nd</sup> mandate, European Horizon 2020 work programmes started in 2014 to gradually introduce the multi-actor approach and since have improved the definition, and refined the requirements for, the multi-actor approach.

Impact must be taken into account by researchers when designing projects so that, while producing knowledge, they are able to work with others on co-designing and co-delivery of outputs and outcomes. To make all this happen, incentives to encourage researchers’ engagement in interactive research and innovation processes should be improved<sup>4</sup>. Success in using and achieving impact indicators by researchers should be used in a novel way to provide incentives. It is also necessary to build or strengthen relevant capacities at all stakeholder levels as new competencies are required. This could be supported by fostering closer collaboration with knowledge transfer organisations as well as innovation support services and innovation brokering to create an environment for supporting impact generation.

Policy makers and funders should ensure the application of research results by ensuring appropriate and timely participation of end-users as well as knowledge transfer organisations and innovation support services and innovation brokering.

Changes could be encouraged by providing more flexible funding regulations. Funding agencies could adapt project time frames in order to encompass a more complete process to also include impact assessment. They should also allow a broader involvement of stakeholders and beneficiaries from a very early stage, addressing their needs and taking into account the broader framework for research and innovation. The need for evaluation of impact should be emphasised and the attention given to defining impact in the overall proposal evaluation must be increased.

### **Recommendations:**

A number of recommendations are provided below for different target groups.

#### *Research institutions:*

- Develop a culture of impact at institutional level including the capacity to understand and work with impact pathways from project design to project completion in order to strengthen the impact of R&I policies and programmes.

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<sup>4</sup> See Chapter 5 in EU SCAR (2013), *Agricultural knowledge and innovation systems towards 2020 – an orientation paper on linking innovation and research*, Brussels.

- Widen collaboration and communication to include all relevant stakeholders in the research and innovation pathways including end-users of project results, knowledge transfer organisations and innovation support services and innovation brokering.
- Include use of and achievement of impact indicators as a parameter for assessing researchers

*Funding agencies:*

- Require a consideration of impact both ex ante and ex post and that projects and programmes are co-designed and co-delivered, where appropriate.
- Examples of, and learning from, existing good practices of ex ante evaluation planning and monitoring in, for example, EIP Operational Groups and H2020 multi-actor projects should be collated and analysed with a view to translation and implementation in other programmes.

*R&I Policy makers*

- Foster an enabling environment for impact and provide researchers with the support needed to develop the capacity for this.
- Ensure that funding regulations are flexible enough to support impact by, for instance, supporting the preparation of project proposals with a view to better planning of activities which help non-scientists and end-users of project results to effectively co-operate all along the research project (as is done for EIP Operational Groups).

*SCAR Working Groups:*

- Provide advice on ex ante evaluation planning and monitoring.

*All:*

- Ensure a co-design and co-delivery approach to research and innovation where appropriate. At a strategic level, enable regular exchanges between researchers, funding agencies, policy makers and end-users at the national and European level including through the better use of existing mechanisms such as SCAR and its working groups.
- Strengthen incentives and evaluation criteria for research organisations and individual researchers to encourage a focus on impact and a multi-actor approach in addition to purely scientific excellence, and also to encourage individual researchers to take part in multi-actor research and innovation processes.
- Strengthen the environment for supporting impact generation by including actors from knowledge transfer organisations as well as innovation support services and innovation brokering where appropriate.
- Train researchers in multi-actor and co-creative working methods.

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