

RESEARCH INFRASTRUCTURE IMPACT ASSESSMENT PATHWAYS

Fraunhofer ISI and EFIS
CERN, Geneva
13 November 2018



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731049

CURRENT STATUS

- Lack of clearly defined impact assessment guidelines from policy makers/funding agencies
- Stakeholders have different understanding in the way they define and describe impacts
- Different methodologies and approaches are used to scope and measure impacts

No agreed uniform framework on how to approach this increasingly important topic



THE POLITICAL CONTEXT OF RIS

- RIs as a relatively new object of research and innovation policy
- RI definitions are broad/inclusive rather than restrictive
- RI as a dynamic concept that is being negotiated and expanded
- Impact assessment approach focused on enabling RIs to jointly discuss and proactively govern impact



H2020 funded project that aims to **develop tools** for RI managers, policy makers and funders to assess RI impact on the economy and contribution to society. The goal is to improve understanding of long-term **impact pathways**.



RI-PATHS PROJECT

- Implementation period: January 2018 - June 2020 (30 months)
- 8 project partners, including 4 research infrastructures who will co-design and pilot the impact assessment framework
- Effort: 122.5 person months
- Budget: € 1.49m



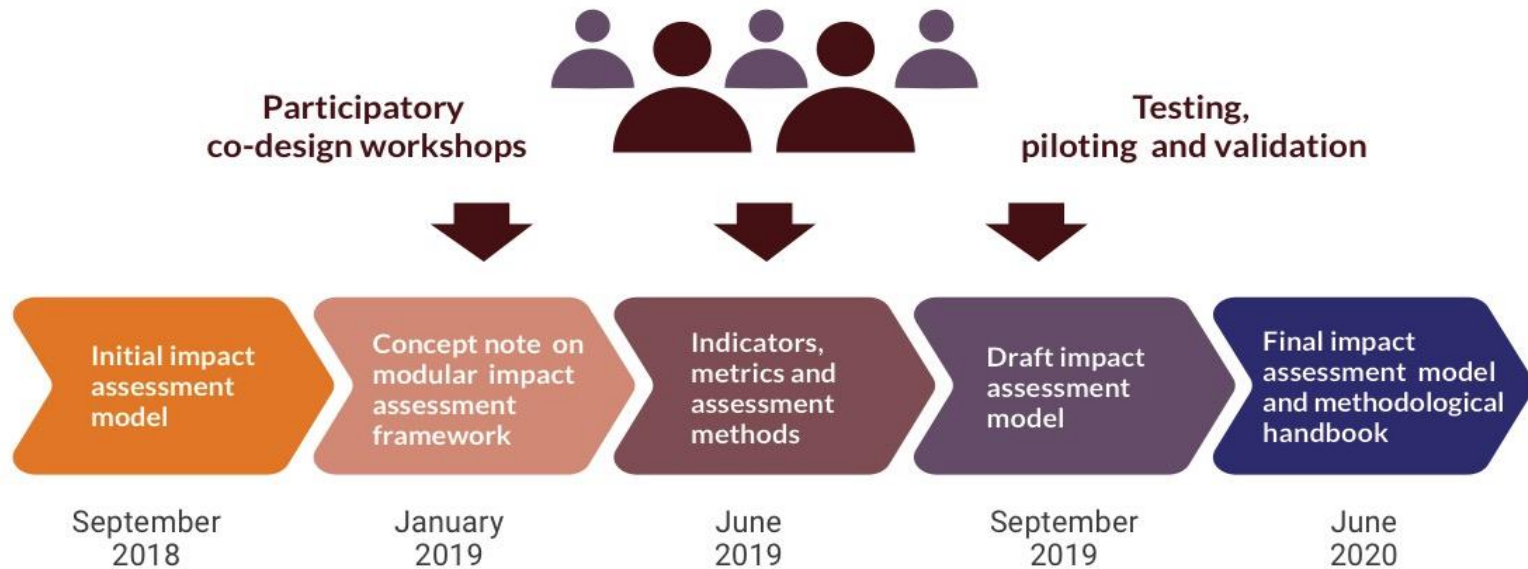
PROJECT HIGHLIGHTS

- IA framework design **reflects the specificities of RIs** taking into account their mission, type and phase of development
- Work is carried out in a participatory manner engaging RI stakeholders in a **co-design of the IA framework**
- Project outcomes provide a **practical IA tool-box** for policy makers and RI managers
- Effort contributes towards a more **common approach at international level**



PARTICIPATORY PROCESS

Research infrastructure stakeholder community



IMPACT PATHWAYS AND LOGICAL MODELS - PARTICIPATORY WORKSHOP 1ST ROUND

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YOUR EXPECTATIONS FROM THE WORKSHOP

- Learn about best practices how other RIs plan, formulate, assess, and measure socio-economic impacts
- Discuss a holistic assessment methodology that covers different stages of RI lifecycle and different aspects of assessment
- Work towards a common ground for the quantification of socio-economic impacts
- Strengthen the network of experts working in this field to align key approaches and methods
- Understand better RI-PATHS approach and how the project is linked to other activities in this field (H2020, OECD SEIRI group, etc.)



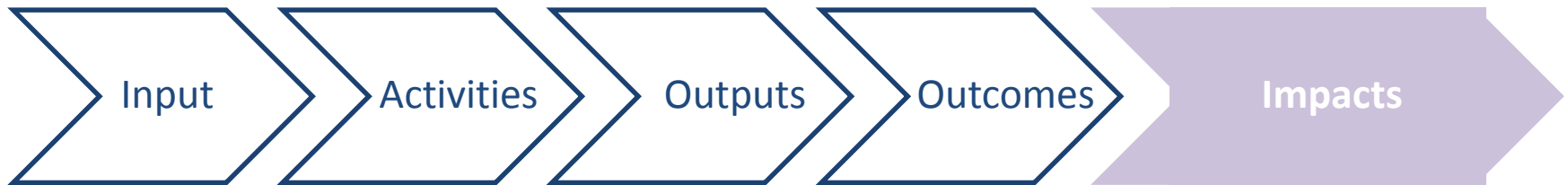
PURPOSE OF THE WORKSHOP

- To prioritise the most relevant impact areas to be included in the IA framework
- To make explicit assumptions and practical experiences on how RIs prompt different socio-economic impacts
- To contribute to the design of the most relevant impact pathways

Not for today: analysis on specific methodologies, indicators and other technicalities



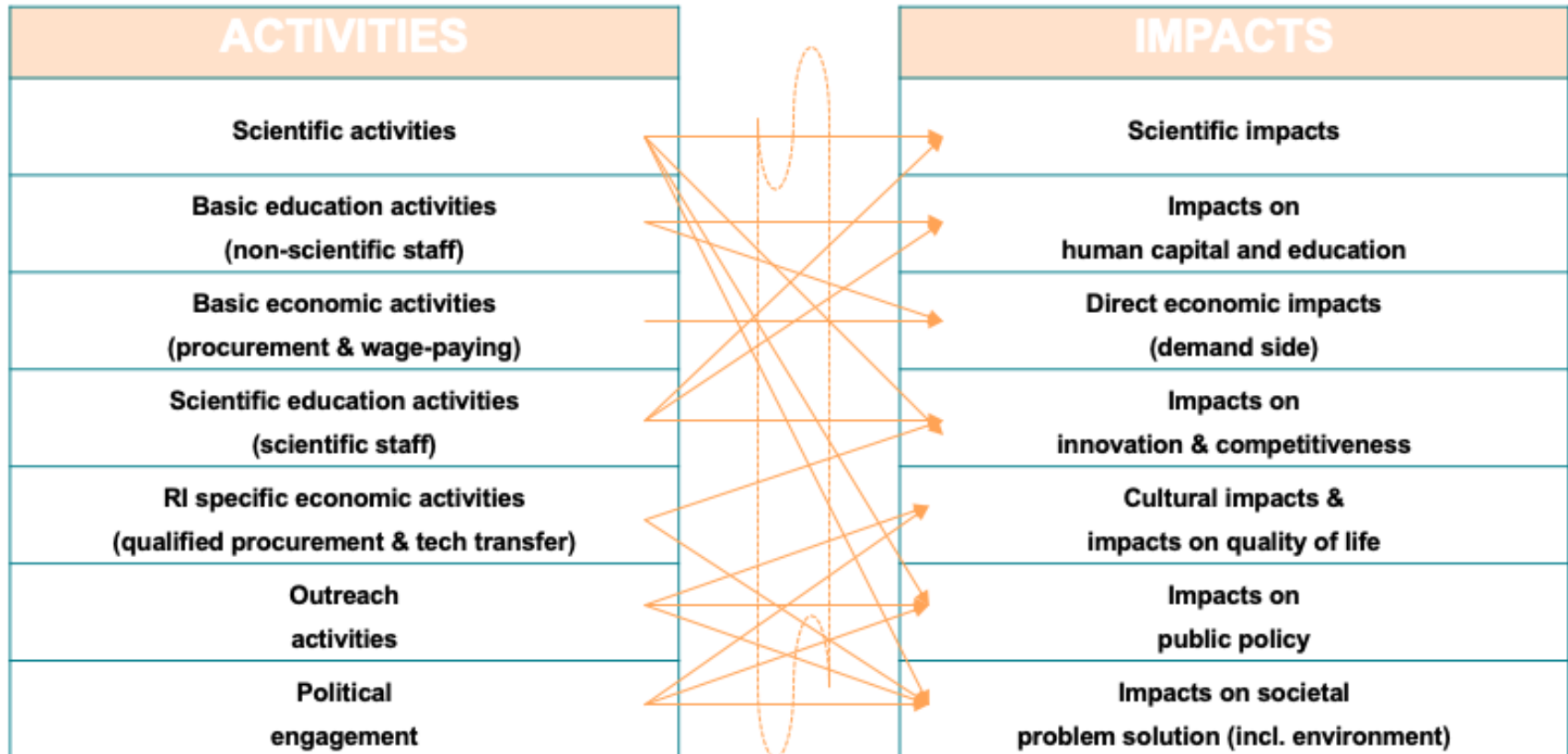
WHAT IS IMPACT?



- Positive and negative, primary and secondary **long term effects** produced by an [intervention], directly or indirectly, intended or unintended (OECD)
 - not immediately attributable to actions
 - materialise in various, in part seemingly distant domains
 - ‘stretched out’ chains of causality
 - various pathways of causation and accomplishment
- Various activities cause various impacts
- To convey a meaningful message, focus is required – **purpose of workshop**
- FOCUS HAS TO BE A DECISION, it does not simply ‘follow from the facts’



WHAT IS IMPACT?



IMPACTS ARISING FROM THE CORE MISSION VS. THOSE ARISING FROM RI AS A SOCIO-ECONOMIC ACTOR

- Impacts caused by a Research Infrastructure pursuing its core mission **IN SCIENCE**
 - Contribution to long-term (or also short-term!) problem solution
 - Qualification of scientists
 - Impacts on innovation and productivity in the economy
 - Opening up of new perspectives in the policy discourse
 - Outreach and popularisation of knowledge in society,...
- Impacts caused by a Research Infrastructure as a **SOCIO-ECONOMIC ACTOR**
 - Employment effects
 - Wages paid and multipliers
 - Qualified procurement effects with impact on innovation
 - Procurement of standardised, off-the-shelf goods
 - Qualification effects for technical staff,...



FRAMEWORK STRUCTURING IMPACTS



Economic Impacts:

Employment,
Wages,
Productivity,
Innovation,
Image factor,...



Human Capital Impacts:

Academic
qualification,
Networking effects,
General training,...



Societal Impacts:

Contribution to
problem solution,
Contribution to
discourse,
Popularisation of
knowledge, ...



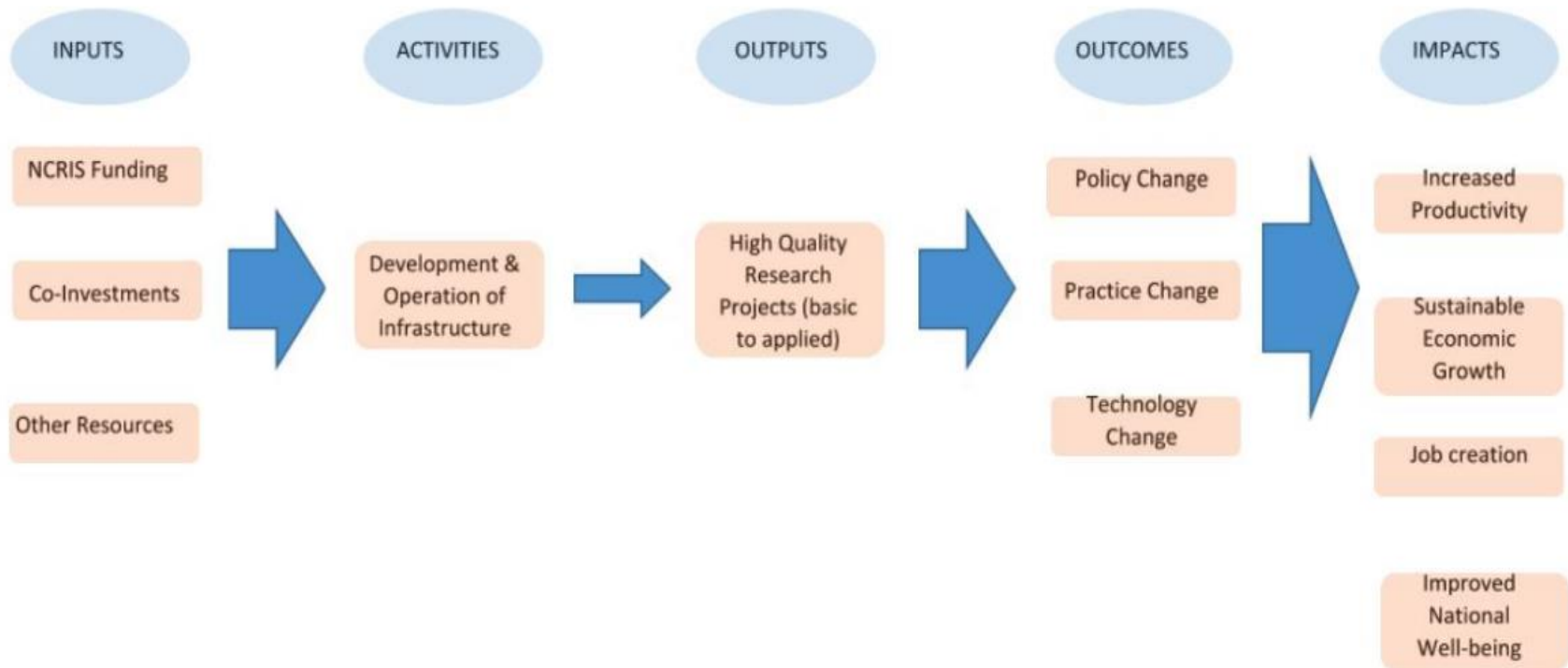
Policy Impacts:

Structure
debate,
Open
perspectives,
Enable
solutions, ...

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A CASE IN POINT (I): NATIONAL RESEARCH INFRASTRUCTURE FOR AUSTRALIA

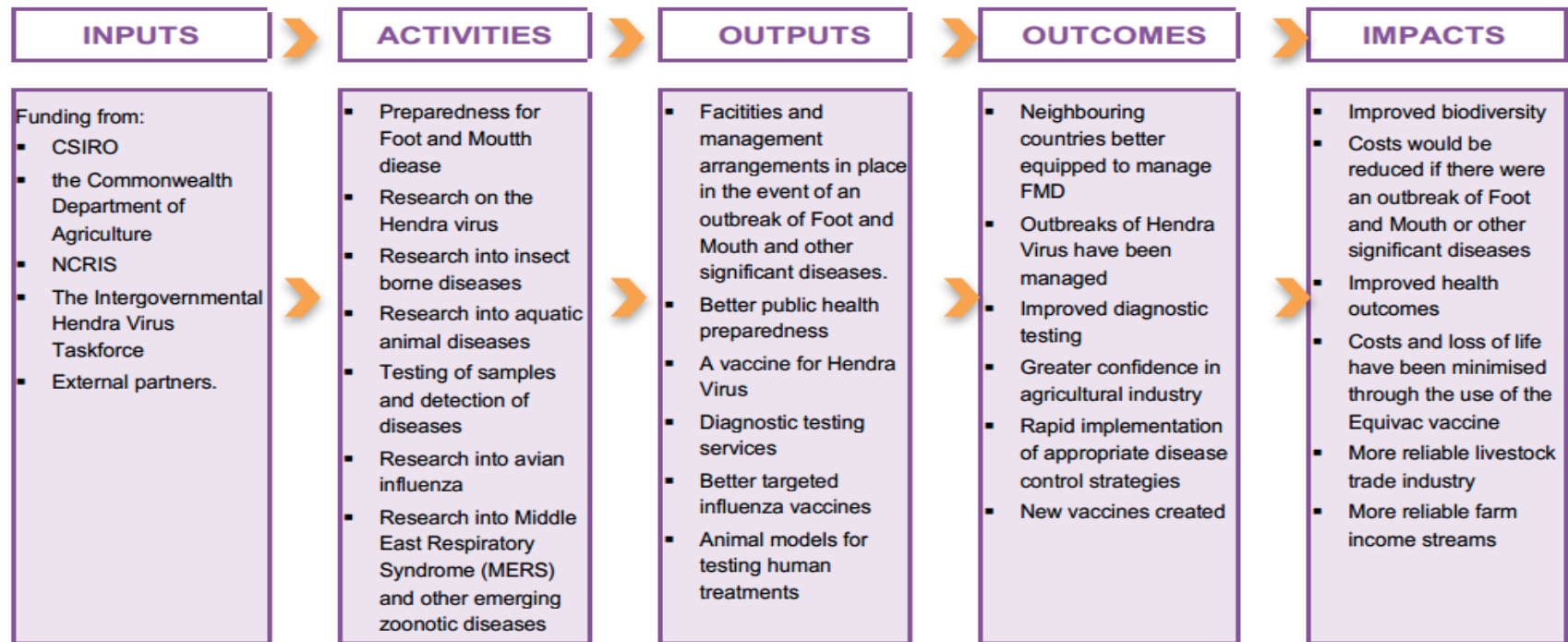


Source: Barker (2018)



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A CASE IN POINT (II): CSIRO/AUSTRALIAN ANIMAL HEALTH LABORATORY (ON ANIMAL HEALTH)



Source: Acil Allen Consulting (2014), CSIRO's impact and value: An independent evaluation. Brisbane: Acil Allen Consulting PTY LTD, p. 18.



A CASE IN POINT (III): UK SCIENCE AND TECHNOLOGY FACILITIES COUNCIL'S IMPACT FRAMEWORK

Research impacts
<p>Direct: Improved knowledge and improved technologies</p> <p>Indirect: Applied technology/techniques</p> <p>Global: Ground breaking discovery</p>
Innovation impacts
<p>Direct: Procurement activities, license or commercial revenue</p> <p>Indirect: Techniques/technology applied to industrial or other problems</p> <p>Global: Research/technology applied to a big problem</p>
Skills impacts
<p>Direct: Contribution of students, uplift in salaries & taxation</p> <p>Indirect: Industry and societal leaders</p> <p>Global: Nobel prize winner, someone who transforms society</p>



TYPES OF IMPACTS VS. QUALITY OF IMPACTS

- Opportunity cost logic and a counterfactual - limiting societal costs because of the RI's impact
- Should we grade impacts' intensity based on the influence a RI has on them? E.g. Lateral Economics (2016) grades impact on an ordinal scale of medium to major



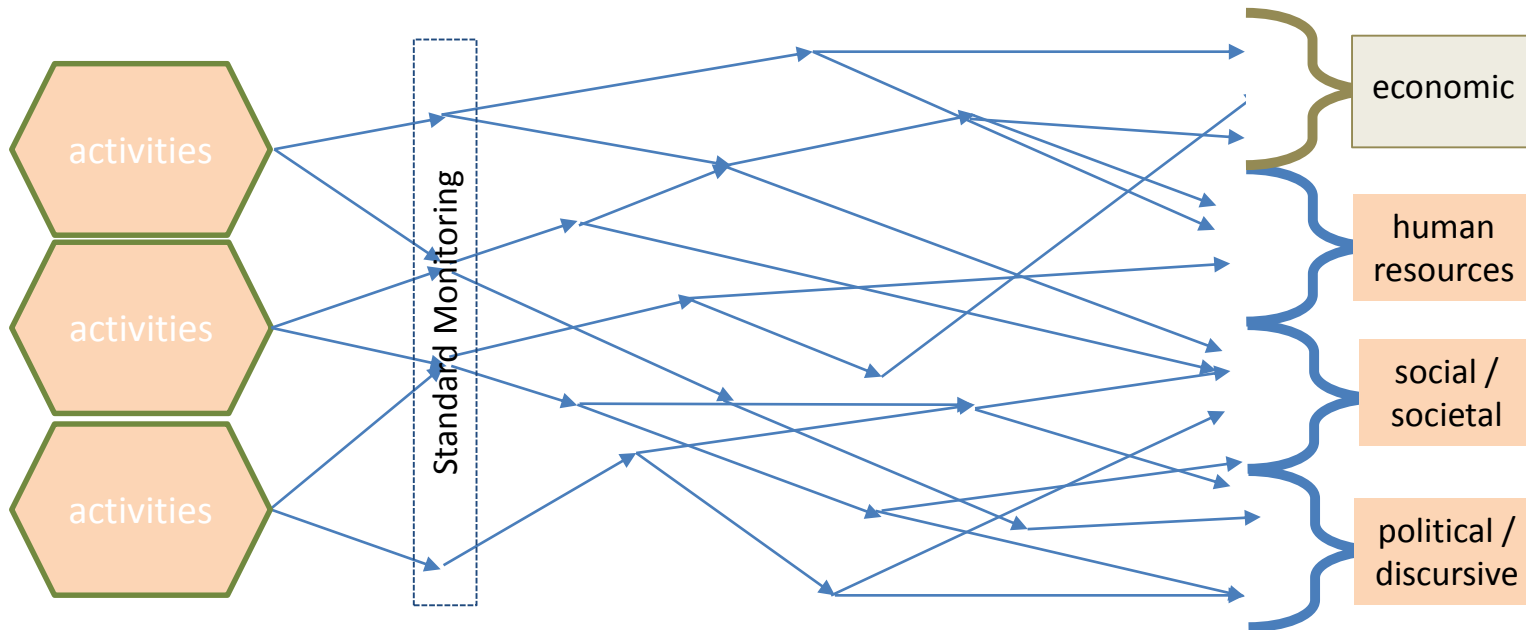
QUESTIONS TO GUIDE US THROUGH THE DAY

- Who is asking for impact assessment (regulators, funders, policy, ...)?
 - For what purpose?
 - What exactly are they asking for?
- Why is your research organisation motivated to pursue impact assessment?
 - With a view to satisfying external requirements?
 - With own motivations in mind – which are these?
- What experiences have been made so far?
 - With a view to the utility and usefulness of IA in specific areas?
 - With a view of specific pathways / logics of causation to look at?



GUIDING SLIDES FOR WORLD CAFÉ



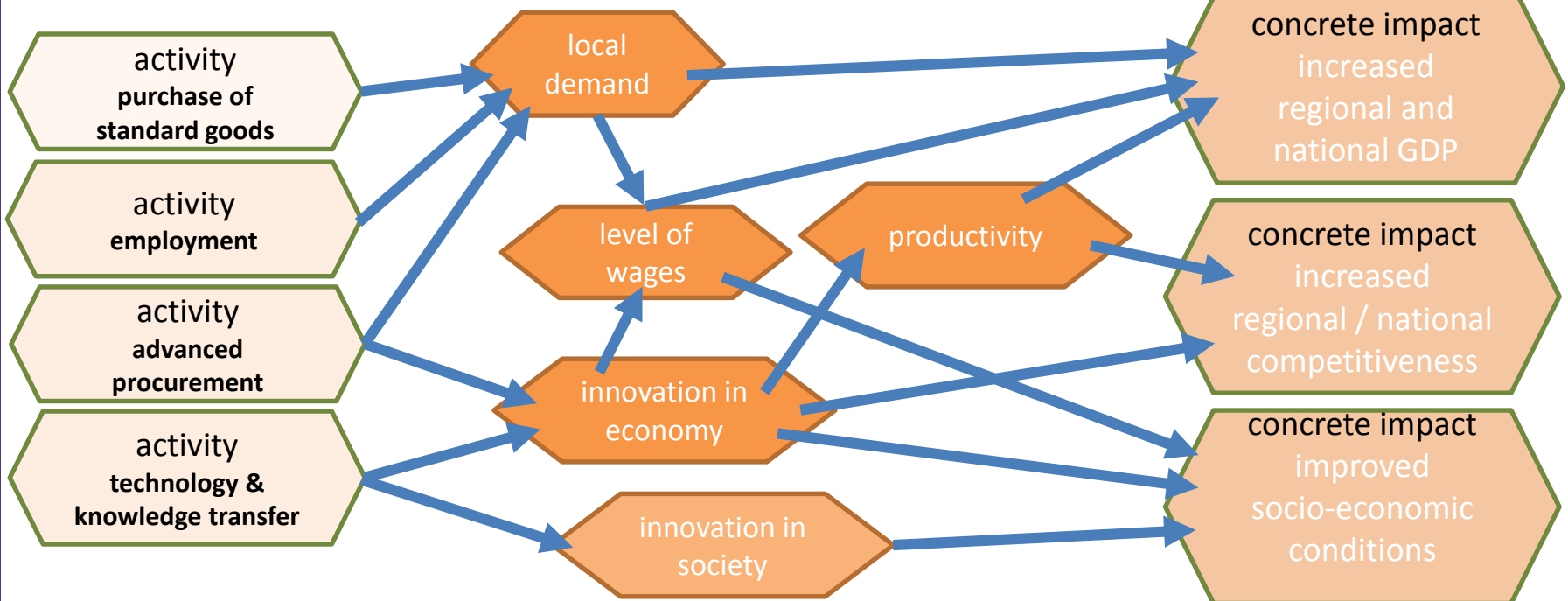


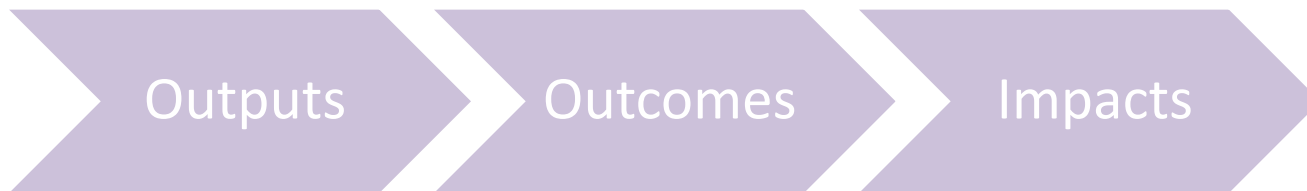
EXAMPLE FOR ECONOMIC IMPACTS



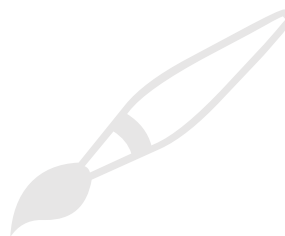
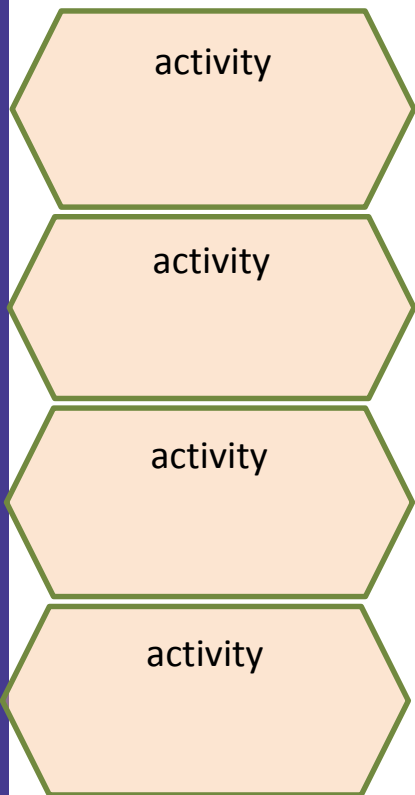
TOP 3 ACTIVITIES

TOP 3 IMPACTS

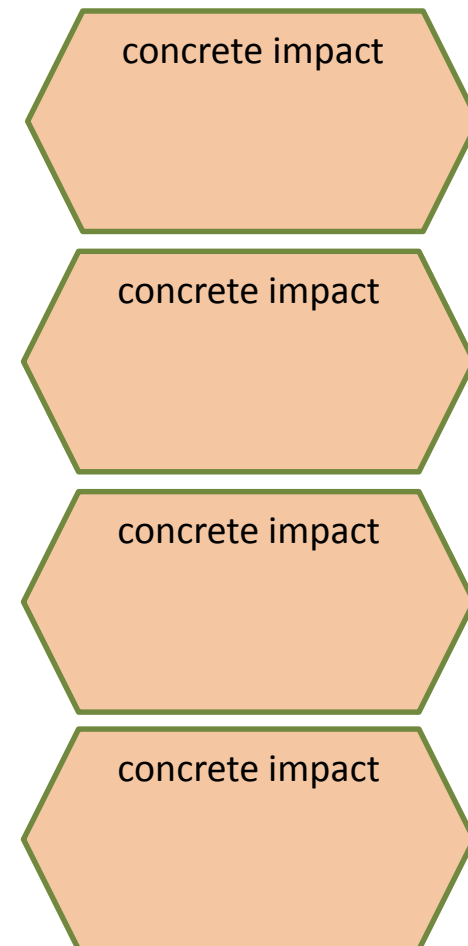




TOP .. ACTIVITIES



TOP .. IMPACTS



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