

# Current and emerging approaches to impact assessment

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26 May 2022  
AESIS Training Workshop | Online



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# David Budtz Pedersen

## Professor of Science Communication

### Aalborg University

Head of Humanomics Research Centre

Science Policy Adviser, Danish Government  
Chair of EU COST Expert Group on Science Communication  
Knowledge Broker for Algorithms, Data and Democracy (2021-2030)



AALBORG UNIVERSITY

# Building an institutional culture for impact



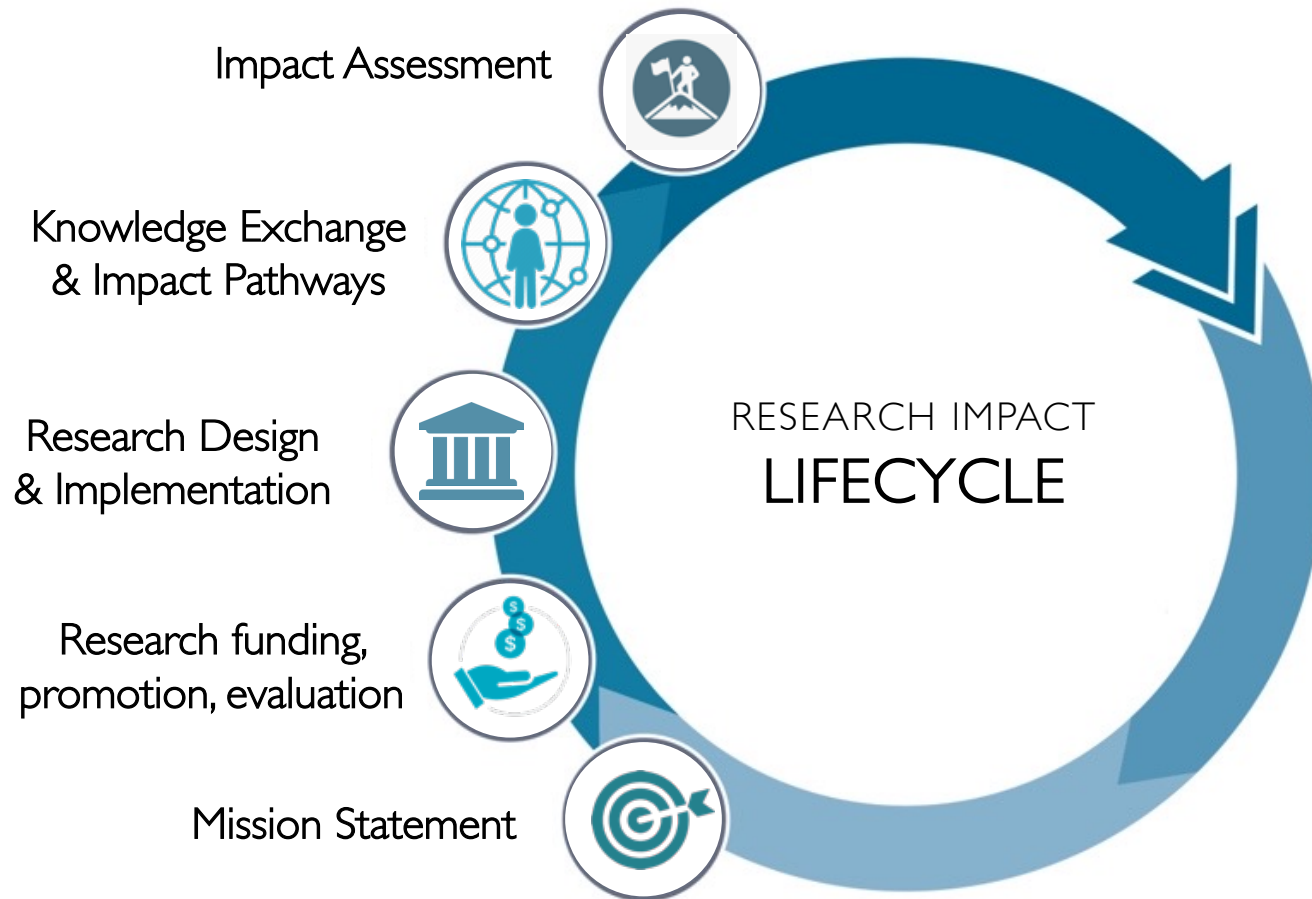
# An integrated approach to impact strategy and assessment



# Four “I”s of Research Impact

1. **INVESTING IN IMPACT.** Alignment of mission statement and impact strategy ('theory of change') at university & funding agency level.
2. **INCENTIVES.** Without emphasis on incentives, recognition and rewards, most societal impact activities will not occur.
3. **INTERMEDIARIES.** Professional support and specialist skill-sets, training and needs to be cultivated and provided by knowledge brokers.
4. **INFRASTRUCTURE.** Reliable and responsible impact assessment depends on data about impact to learn from best practices and shape new strategies





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The Apollo Program  
goal for the 1960s of  
"landing a man on the  
Moon and returning  
him safely to the Earth"  
within 10 years

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*Every street in Sweden will be  
healthy, sustainable and full of life.*



# User studies



ArkDes  
Thinkyou!



Design workshops  
System in the room

Health researcher, university

Micromobility startup

Interaction designer, tech corporation

Municipal traffic planner



# Impact forecasting and validation

## Impact tool

## Outcome

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### Impact Hypothesis

- Identify the desired outcome of your research
- Map which audience or pathway is most relevant for you
- State your impact assumptions (theory of change)

### Impact Forecasting

- Which conditions need to be in place to achieve impact?
- Understand implications of your research impact lifecycle
- Create a robust impact plan (narrative) and choose tools

### Impact Validation

- Which data and indicators are needed to assess impact
- Include stakeholders to validate and assess impact
- Does validation create new impact assumptions?



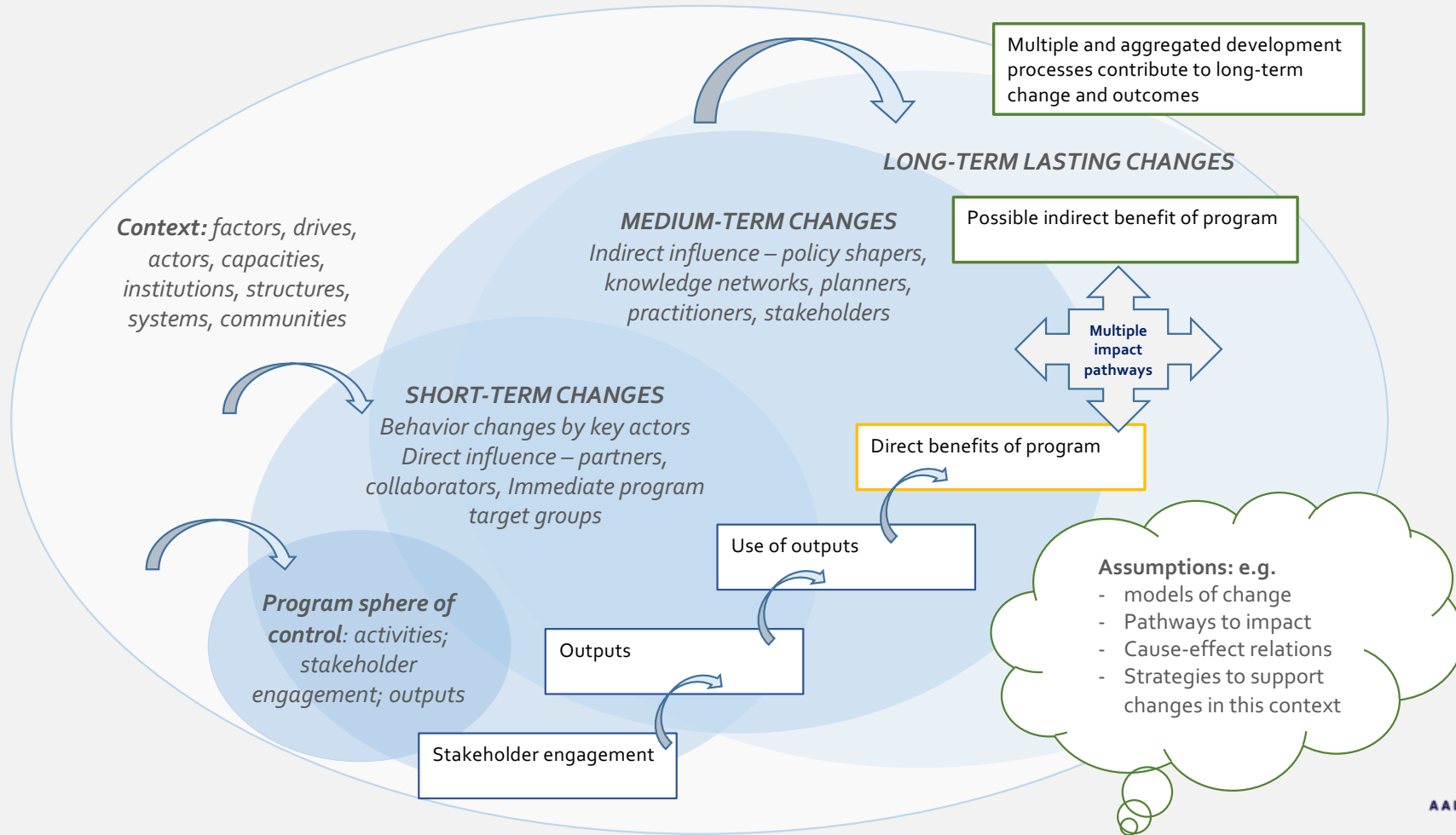


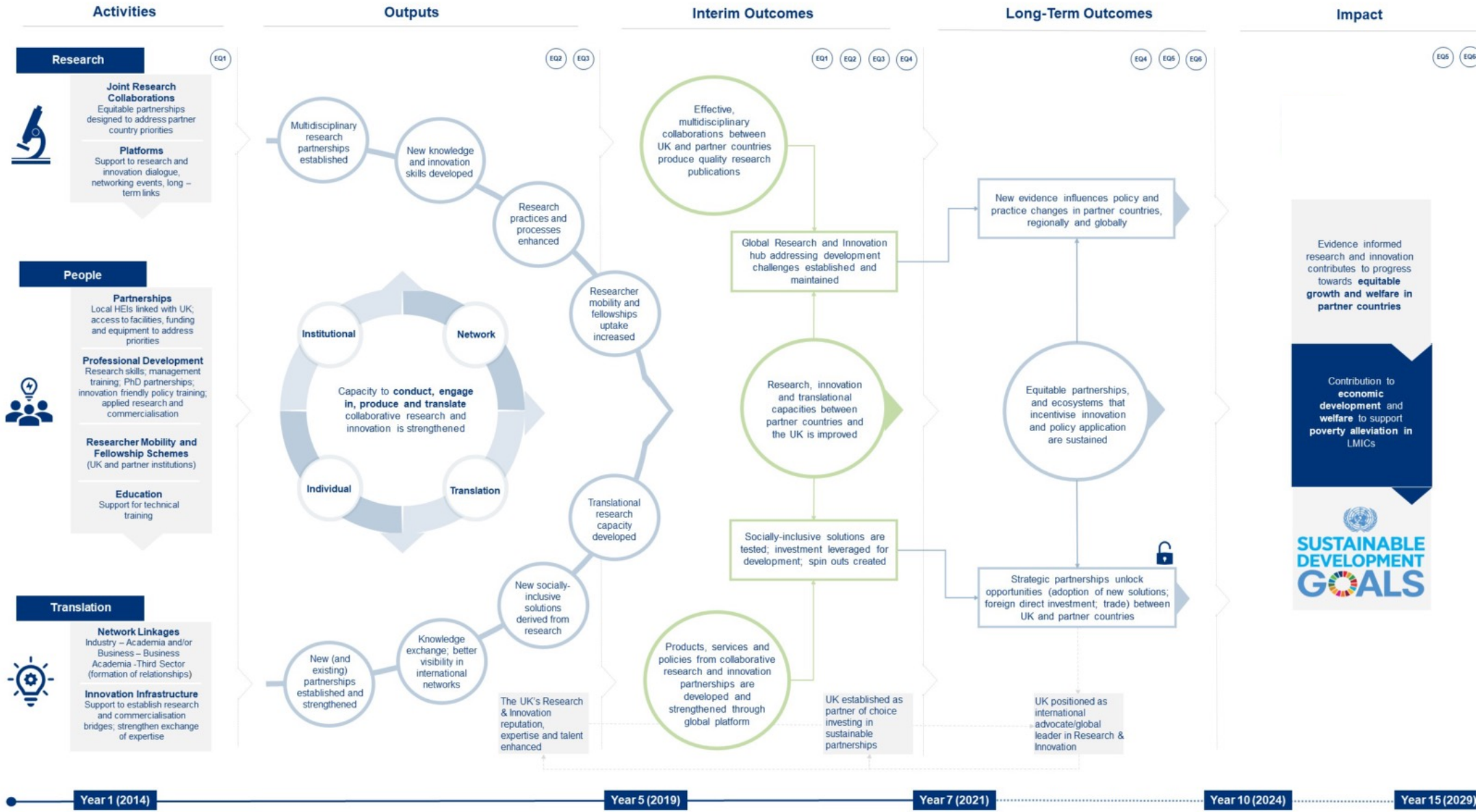
In this exercise, we are clarifying our priorities  
by defining our goals and the path to reach them

## THEORY OF CHANGE



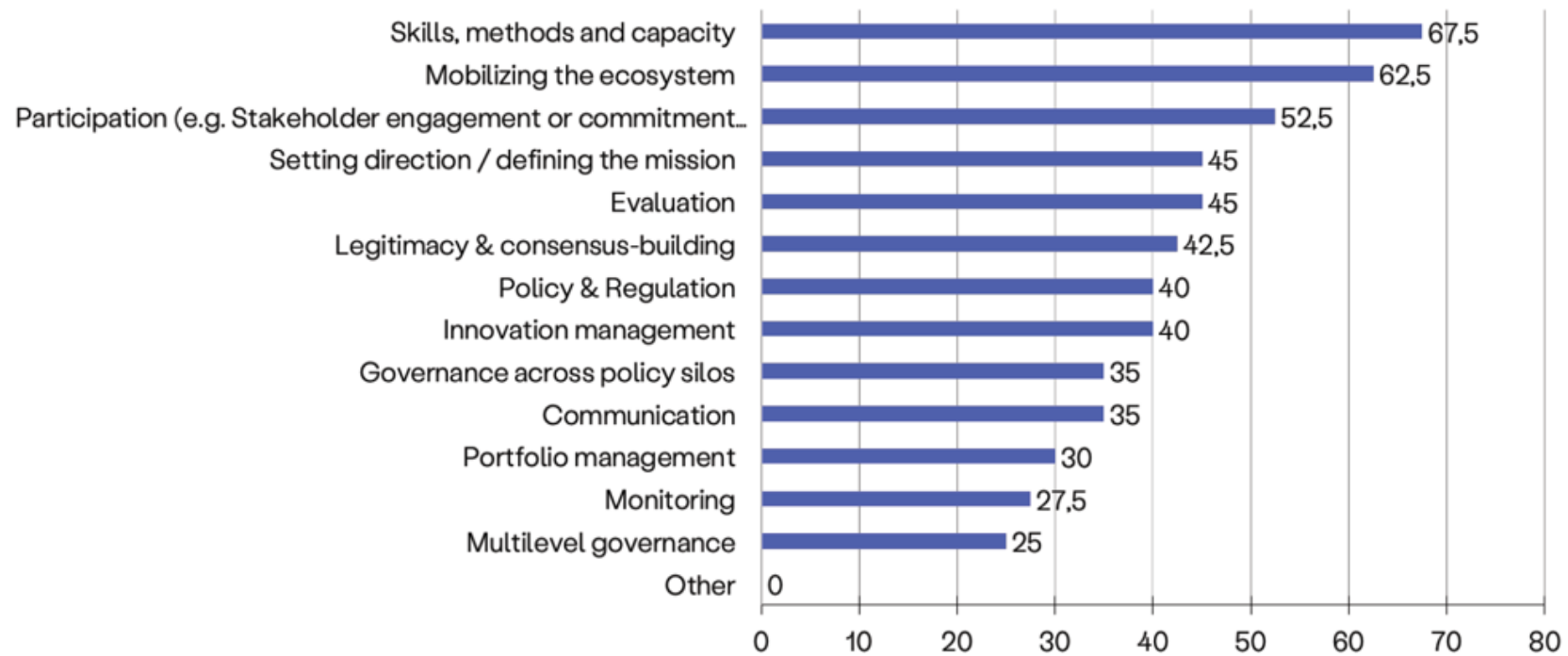
## THEORY OF CHANGE







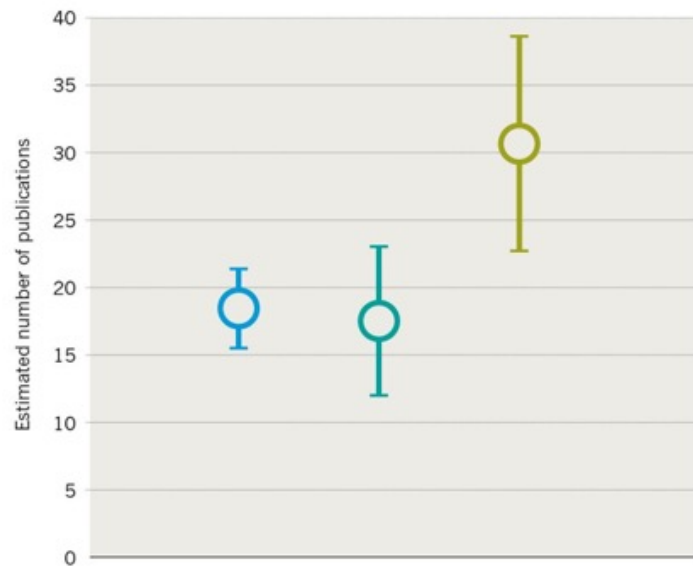
# Capability-approach to research impact



## PUBLICATION BOOST

Academic scientists who collaborate with large established firms publish more papers.

- No industry collaboration
- Collaboration with a startup
- Collaboration with an established company

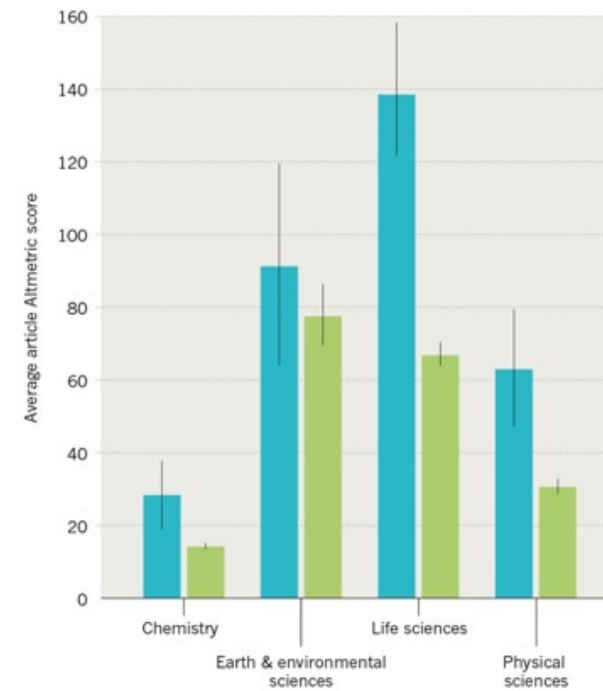


©nature

## INCREASED CHATTER

Papers authored by academic researchers in 2016 were more widely publicised when they had a corporate co-author, as measured by their Altmetric Attention Score. The Altmetric score tracks the discussion around a published paper, from news articles to blog posts and tweets.

- With a corporate co-author
- Without a corporate co-author



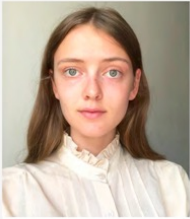
Error bars show the 95% confidence interval around each estimated point



THIRDROOM

Research and Innovation Impact Platform

Live Projects Portfolios Library Challenges



**Clara McNair**  
Student

Hi! I am Clara and I study Computer Science and Performance Design at the Department of People and Technology (HumTek) at RUC.

[Message Me](#)

Education  
Computer Science and Design, Bachelor RUC

I am open for

Challenge Internship Job

Skills & Competences

#Art #Installation Design #DataLogi #PerformanceDesign

90% English 75% Spanish 40% French

Tools

PSJs Processing Arduino InDesign Excel Figma

Interests

#Art #Marathon #Sustainability

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EXPERIENCE LIVE [Author](#) [Mentor](#)

Projects Cases SDG Challenges Courses Jobs/Internship

02.06.2021

**4Life Solutions: Fieldwork in Africa**

„Clara has a great sense of teamwork and collaboration and has been helping to facilitate and bridgebuild between us and the partners. We can very much recommend her.“

Alexander Lecke, 4Life Solutions

[See more](#)

15.01.2021

**Myco-Protein Innovation Call**

Thesis / SDG Challenge

To feed the growing population within planetary boundaries we need to rethink how protein is made and sourced. We are inviting start-ups, research centers, academics, corporations ...

[read more](#)

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Interests

#Art #Marathon #Sustainability

Collaborators

Network Graph

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02.06.2021

**4Life Solutions: Fieldwork in Africa**

#Sustainable #CleanWater #Health #SDG6

Internship

4Life Solutions helps low-income communities on their path to safer, healthier, and happier homes. Their mission is to ensure affordable and sustainable access to safe drinking water for the ...

[read more](#)

15.01.2021

**Myco-Protein Innovation Call**

#AlternativeProtein #Innovation #Mycellium

Thesis / SDG Challenge

To feed the growing population within planetary boundaries we need to rethink how protein is made and sourced. We are inviting start-ups, research centers, academics, corporations ...

[read more](#)

27.09.2020

**SKOSH: Testing Probiotics**

#MicroOrganisms #FutureOfClean #Cleaning

Job / Startup Case

SKOSH develops and produces sustainable household cleaning solutions in the form of tablets and recycled plastic bottles. It is our highest goal to make use of the nature's own cleaning ...

[read more](#)

13.02.2020

**Recognizing Emotion in Dance**

#MicroOrganisms #FutureOfClean #Cleaning

Student Project

This project aims to examine how a program can detect emotions in a user's dance movements, and how this can be utilized in an interactive scenography. The project utilizes machine-learning ...

[read more](#)

Live Projects Portfolios Library Challenges

Mapping Bangalore Challenge

## Standard challenge page

**Abstract**  
Mapping and Connecting Bangalore: Can we summarise in one screen all the research and development of a megacity like Bangalore (8.5+ million people)? If we could, what would it look like, and what could we do with it? These are some of the questions that a team composed by HelloScience, the HHL Foundation and Dataverz sought to answer during our ... see more

**Tags**  
#datamapping #india #connectingdata #bangalore #datavisualisation #education

**Contact**  
Pedro Parraguez

**SDGs**  
15, 11

**Sign Up** (21 days left)

**Author**  
+ [Profile]

**Mentors**  
+ [Profiles]

### Timeline

- 19.09.2021 - 17.10.2021 Open Challenge
- 18.10.2021 - 25.10.2021 Review
- 27.10.2021 - 29.10.2021 LiveLab
- TIMEFRAME Incubation

**Offering**

- Joint Venture
- Research Collaboration
- Microgrant
- Mentorship
- Incubation
- Legal Support
- LabSpace

**Applied for Challenge**

[Profile] I want to take part in this challenge because Facepelt. ilibus cus incid et aborem hiliese senes sum faciliis illestore exeris albusame dit ad. ... see more

[Profile] I want to take part in this challenge because Ovid qui utam nost audit re ommolup tatempo risquodit excepe nobistium volorepellit harcium ius ... see more

[Profile] We want to take part in this challenge because Bor re nonecab oribusam, tem eveliquam fuga. Itaest, nos dolupta num quidenis ea vit dolore eru. ... see more

[Profile] I want to take part in this challenge because Sun-tius eos es magnis sinci dolum nobis dolesciur. ... see more

Applied for Challenge

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[Profile] I want to take part in this challenge because Sun-tius eos es magnis sinci dolum nobis dolesciur. ... see more

Already signed up for Challenge

Josephine Teiby

Crop Trust

Albert Nyeland

Ulrikke Gravesen

Carry

Troels Mønsted

Sina Fehaye

Biome Makers

Partners

novozymes

Nilfisk

DANSK ERHVERV

GLADSAXE

KROMANN REUMERT

### Suggestions

Related Complementary

**Research**

Sustainable soil measurement - Farmers' experiences on subsoil compaction and the consequences and factors for interpretation  
Thompe, Martin; Hvarregard, Nils; Egen; Bjørnskov, Lennart; Mathias; [et al.] 2019, Land Use Policy, Article

Walla-Sea Horizontal Transmission Events in Arctic, What Do We Know and What Can We Learn?  
Tobias; Sarah; I. A.; Anonaci, Peter, Sapientini, Paragiotis 2019, Frontiers in Microbiology, Article

**People**

Josephine Teiby

Mikkel Kolkær

Jasmina Pless

**Related Projects**

Environmental Studies

Sustainable Energy

Save the Sea

**SDG Challenges**

Arctic Opportunity

Cleaning Challenge

Mapping Bangalore

# Conclusions

- We need healthy, connected institutions
- Theories of Change are creating formative assessment (not summative) and learning.
- Co-design of assessment frameworks with faculty and stakeholders leads to trust and legitimacy.
- Rewards, incentives, and skills are important part of the impact journey



## Discussion questions

- Discuss pros & cons: Should institutions aim for indicators that are comparable to other institutions (rankings) or create mission-driven indicators locally?
- Who are the key stakeholders you would include when establishing a Theory of Change for your unit or institutions?

# Thank you for the attention

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Twitter: @HumanomicsMap

Website: <http://mapping-humanities.dk>

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Research Evaluation, 29(1), 2020, 4-21  
doi: 10.1080/17500001.2020.1761033  
Special section

OXFORD

## Methods for mapping the impact of social sciences and humanities—A literature review

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\*Corresponding author. Email: davidp@hum.aau.dk

**Abstract**  
This article explores the current literature on 'research impact' in the social sciences and humanities (SSH). By providing a comprehensive review of available literature, drawing on national and international experiences, we take a systematic look at the impact agenda within SSH. The primary objective of this article is to examine key methodological components used to assess research impact comparing the advantages and disadvantages of each method. The study finds that research impact is a highly complex and contested concept in the SSH literature. Drawing on the strong methodological pluralism emerging in the literature, we conclude that there is considerable room for researchers, universities, and funding agencies to establish impact assessment tools directed towards specific missions while avoiding catch-all indicators and universal metrics.

**Keywords:** research evaluation; impact assessment; social sciences and humanities; literature review.

**Introduction**  
Across the international research and innovation community there is a growing interest in how to assess and communicate the diverse impacts of scholarly work. Being able to demonstrate the societal uptake and value of social sciences and humanities (SSH) research is increasingly seen as a crucial component in ensuring accountability and transparency (Hofeldt et al. 2014; Morton 2015; Greenhalgh et al. 2016; Ravesscroft et al. 2017). In recent years, the notion of 'research impact' has gained significant traction within the science system, and has been embedded in research policies, funding instruments, and evaluation regimes (e.g. Rip 2000; Holbrook and Freeman 2013; Bornmann 2013; Buchanan 2013; Langford and Scordano 2015; Derick and Samuel 2017; Holbrook 2017; Reale et al. 2017). In this article, we provide an overview of the existing methods for broader impact assessments across SSH.

A key finding of the literature review is that different funding agencies, policy-makers, and research organizations operate with different models and methods for impact assessment. Impact simply does not mean the same thing across institutions, geographies, and research cultures. This conceptual diversity is reflected in the number of methods and frameworks which are used to track, demonstrate, assess, and incentivize the impact of research across the European SSH community and beyond. The diversity of the impact agenda in SSH reflects a broader trend within impact studies. The evolution of impact studies has shown that public research organizations do not just release their benefits to society following a linear model of growth and application. Instead, real-world effects of research occur at different stages in the research process, extending from knowledge dissemination and knowledge mobilization to long-term applications and dynamic effects.

Much progress has been made in measuring both the outcomes of research and the processes and activities through which these are achieved (Greenhalgh et al. 2016). However, as we demonstrate in this article, there exists a multitude of approaches to impact assessment reflecting the complex and multi-dimensional ways in which research is taken up by society. As Rafols (2017) noted at the Science, Technology, and Innovation Indicators Conference in 2017: 'The contributions of science to society are so varied, and mediated by so many different actors, that indicators used in impact assessment cannot be universal. Instead, they need to be developed for given contexts and used alongside qualitative assessment'. Assessing the impact of social science and humanities is indeed challenging. The ways in which research is taken up, used, and reused in real-world settings means that linking research processes or outputs to wider changes is difficult, and timescales are hard to predict (Morton 2015). However, rather than being paralyzed by the lack

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