



Academy of Finland State of  
Scientific Research in Finland  
2016

***Special Theme:  
Broader impact***

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# Academy of Finland – Finnish Research council

## Mission

- fund high-quality scientific research,
- provide expertise in science and science policy, and
- strengthen the position of science and research.

## Research funding

- 437 million euros (507 MUSD) in 2017
- Each year, contributes to some
  - 2,700 researchers' work (FTEs) at universities and research institutes.
  - 20 % of research spendings at the universities



# Academy of Finland's reviews of state of scientific research in Finland

- Supports universities and research institutes in developing their activities
- The 2016 review analysed
  - research personnel and funding
  - publishing, scientific impact and co-publications
  - bibliometric analyses compare Finland to research-intensive countries worldwide
- **Special theme in 2016: The broader impact of research in society**
- The goal: to understand and make visible
  - different **types of contributions** of research to society
  - different **pathways** from research to impact
- Not a quantitative impact assessment



# Four different research fields: Complementary views of research and its impact



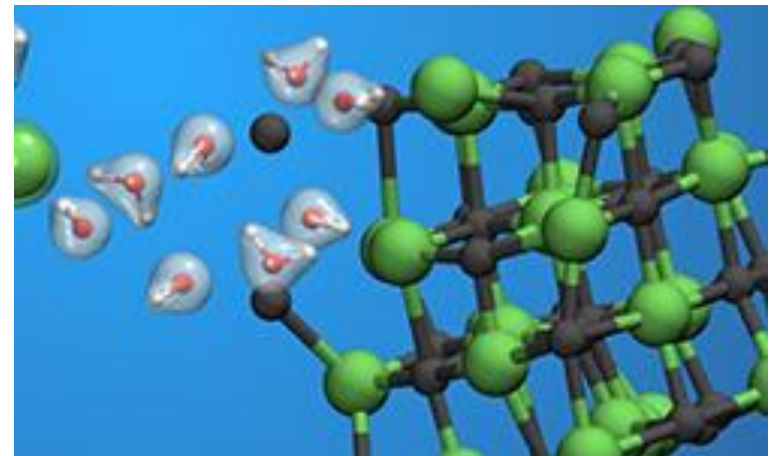
Ecology, evolutionary biology  
and ecophysiology



History



Medical engineering and  
health technologies

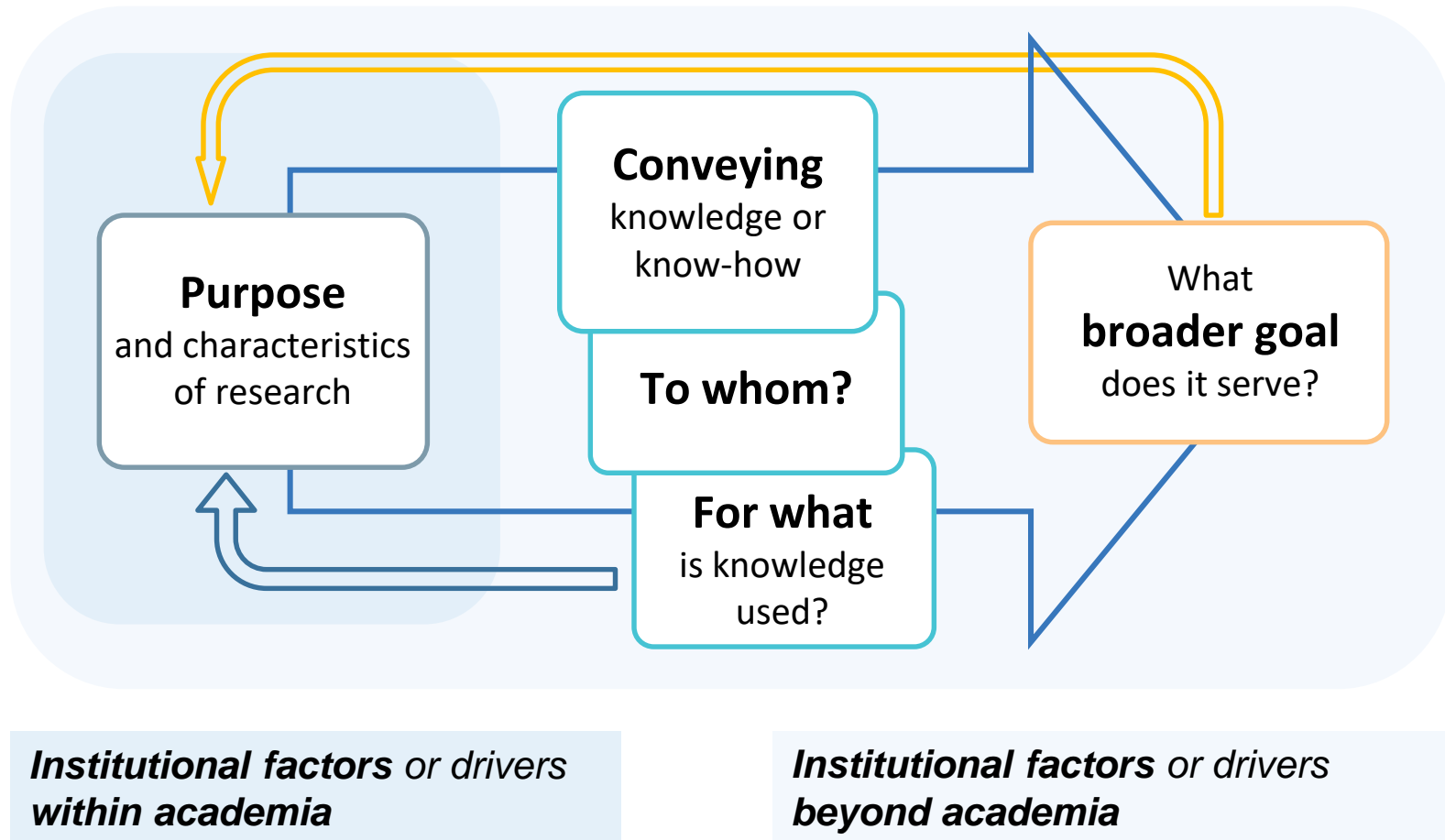


Materials science and technology

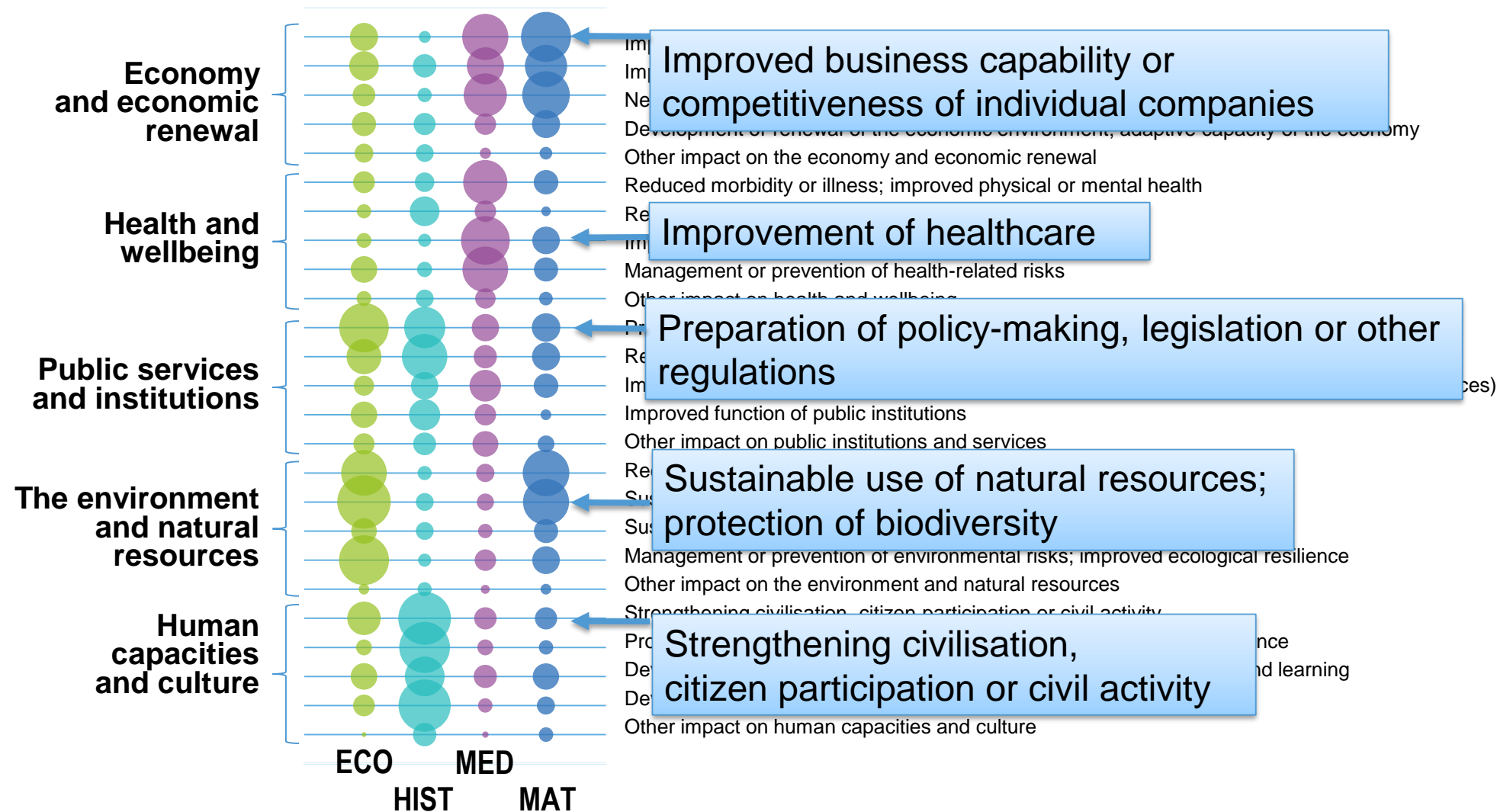
# Multifaceted dataset: surveys, interviews, statistics

- Impact explored from the direction of research activities
- The analysis combined qualitative and quantitative methods
- Surveys
  - the **broader impact of research** on society
  - the **role of doctoral degree holders** in society
  - approx 35 % response rate for both surveys
- Group interviews: researchers and research users
  - 10 groups, 70 participants
- Statistics: the placement of doctoral degree holders in working life

# Impact dynamics – a simplified illustration and survey logic



# Contributions of research to society in four research fields



Source: Academy of Finland's survey on the broader impacts of research on society, 2016.



# Science and humanities contribute to society in many different roles

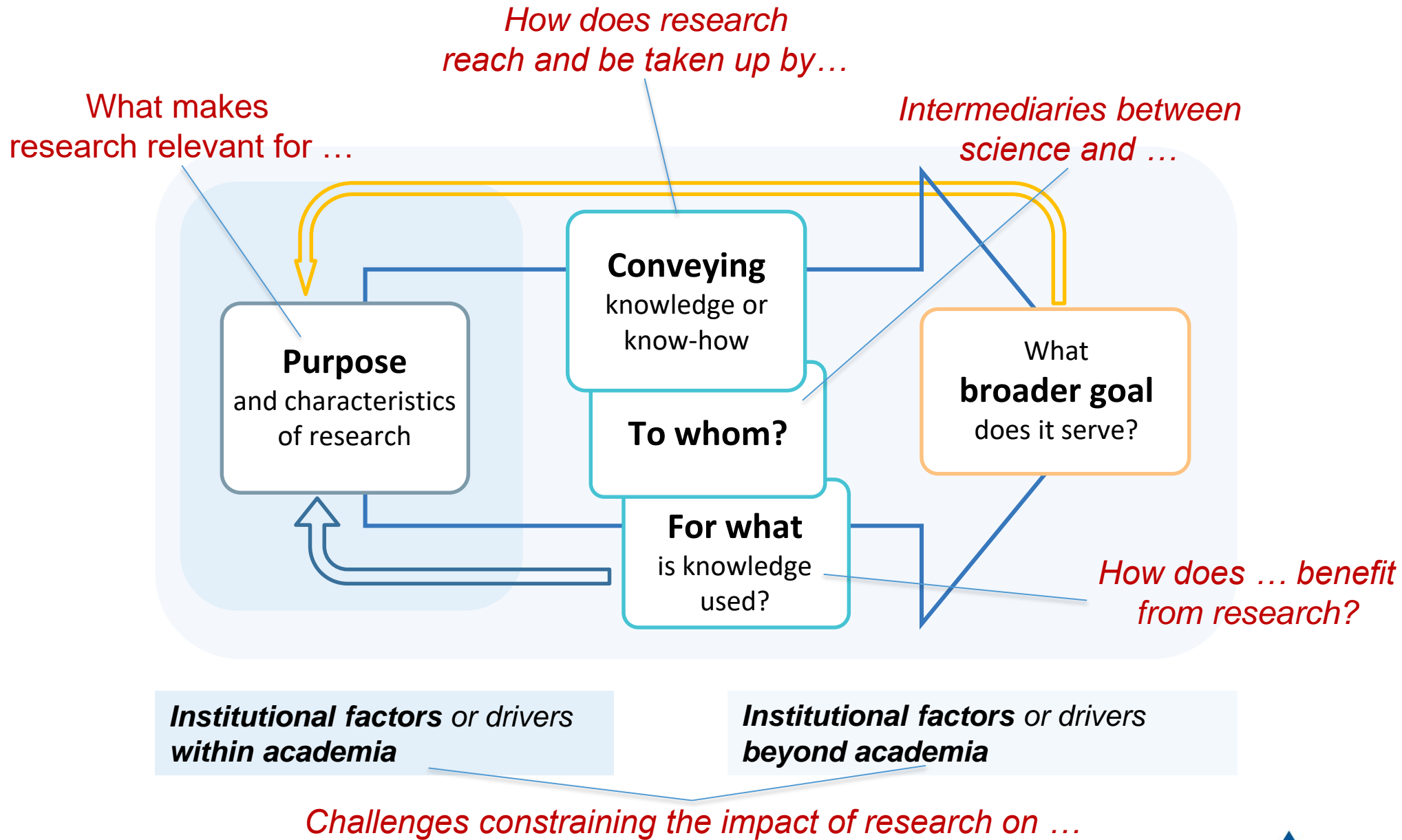
## Examples from Finland

- **Human understanding and world view**
  - Popular professors Kari Enqvist (cosmology) and Esko Valtaoja (astronomy) put things in perspective
- **Wealth and prosperity**
  - Nokia would have never become so successful without decades of investment in telecommunications research
- **Basis for decision-making**
  - Helsinki Graduate School of Economics recently established, following an initiative from prime minister Juha Sipilä
- **Practice development**
  - Important PISA success factor: Teachers with University Master's degree





## **Further question relating: Role-specific pathways to impact?**



	Human understanding and world view	Policy and decision-making	Professional practice	Wealth and prosperity
How does ... <u>benefit</u> from research?	<ul style="list-style-type: none"> <li>• “Enlightenment”</li> <li>• World views</li> <li>• Democratic development</li> <li>• Collective identities</li> </ul>	<ul style="list-style-type: none"> <li>• Information of issues under policy consideration</li> <li>• Recognition of new problems faced by society</li> <li>• Legitimation and accountability of policies</li> <li>• Information of policy context</li> <li>• Information of policy alternatives</li> </ul>	<ul style="list-style-type: none"> <li>• Tools for conducting the work</li> <li>• Renewal of practices</li> <li>• Revealing the broader consequences of practices</li> <li>• Evaluation of practices</li> </ul>	<ul style="list-style-type: none"> <li>• Inventions</li> <li>• Intellectual property</li> <li>• Skilled workforce</li> <li>• Absorptive capacity</li> <li>• Knowledge as a public good</li> </ul>
What makes research <u>relevant</u> for ...?	<ul style="list-style-type: none"> <li>• Conceptualization of societally important phenomena</li> <li>• Tools for individual and collective sense-making</li> <li>• Situating knowledge in a meaningful context</li> <li>• Relevance may rise and fall along with public interest</li> </ul>	<ul style="list-style-type: none"> <li>• Focusing on policy-relevant topics</li> <li>• Framing and scaling research according to policy concerns</li> <li>• Reconciling information between different perspectives and disciplines</li> <li>• Independence from particular interests</li> </ul>	<ul style="list-style-type: none"> <li>• Built-in relevance of applied research fields</li> <li>• Familiarity with the problem context</li> <li>• Field experiments</li> <li>• Dynamic relationship between pure and applied research</li> </ul>	<ul style="list-style-type: none"> <li>• Complementary competences</li> <li>• Focusing on nationally important fields</li> <li>• Sensitivity to international contexts</li> <li>• Responding to market needs</li> <li>• Willingness of risk-taking</li> <li>• “Pasteur’s quadrant”</li> <li>• Relevance of basic research</li> </ul>

# Impact Assessment at Academy of Finland: Strengthening the position of science and research

## Our results

- **make** the broader **impact of research visible** for policy makers and citizens
- help **create common understanding** of what constitutes the broader impact
- help scientists to **position their work in the broader context** of society, by
- providing concrete **examples** of the benefits of scientific knowledge **in different contexts**

We think our work may also support

- developing context-dependent indicators and incentives for the future



- More information
- [State of scientific research - Academy of Finland](#)
- <http://www.aka.fi/en/research-and-science-policy/state-of-scientific-research/broader-impact-of-research-in-society/>
- [http://www.aka.fi/globalassets/30tiedepoliittinen-toiminta/tieteentila/aka\\_tieteen\\_tila\\_2016\\_eng\\_150317.pdf](http://www.aka.fi/globalassets/30tiedepoliittinen-toiminta/tieteentila/aka_tieteen_tila_2016_eng_150317.pdf)