



Biodiversity and ecosystem services: knowledge gaps and need for research and cooperation

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- A few words about Formas
- The investigation about research needs on ecosystem services and biodiversity
- What happens now - from a funding perspective





The research council Formas

- Basic research
- Applied research
- Innovation

- Highest scientific quality
- Relevance for society

<http://www.formas.se/en/>





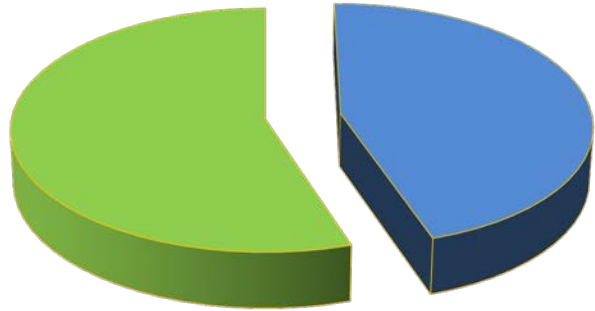
Environment



Agricultural sciences



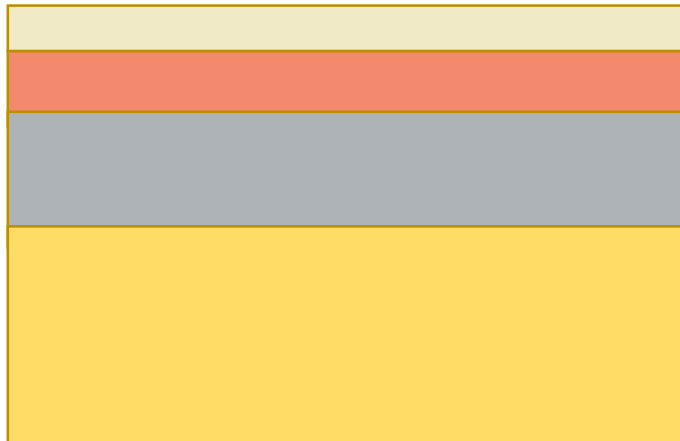
Spatial planning and building



~ 1.3 billion SEK

Ministry of the Environment and Energy ~ 58%

Ministry of Enterprise and Innovation ~ 42%



Communication projects, urgent grants ~10%

International calls ~15%

Targeted calls ~ 25%

Annual open call ~ 50%



Regeringsuppdrag M2015/772/Nm

Uppdrag att göra en analys av forskning om biologisk mångfald och ekosystemtjänster.

- Focus mainly on ecosystem services
 - Need for more research
 - Suggest how existing knowledge can be better implemented and collaboration (academia – society) can be improved
- In collaboration with Environmental Protection Agency



(1) Analyse the need for more research investments within:

- **Functional relationships** between ecosystem services
- **Valuation** of non-priced ecosystem services
- Socio-economic effectiveness of different **policy instruments**
- **Learning and implementation** of relevant knowledge



(2) Suggest actions to improve the interaction between academia – society:

- **Participation of researchers** in planning and evaluation of management
- **Participation of stakeholders** in the formulation of research questions, interpretation of results and decisions on new funding initiatives
- How **knowledge** about biodiversity and ecosystem services by different stakeholders/the public can be taken into account in management and research



Bibliometric study

- Disciplines / topics
- Changes over time
- Strong/weak areas
- Collaboration

International expert panel

- Knowledge gaps
- Funding instruments / other actions

Stakeholder workshop

- Involvement of stakeholders in research and management
- Researchers' role in management and planning

Discussion with the other research councils and funding agencies



Conclusions (The research field)

- Steadily growing field (x 2 publications 2010 → 2013)
- Highly cited (70% more than global average)
- Strong areas: Measurement, classification, agricultural ecosystem services, policy and economic modelling, biodiversity and ecosystem functioning
- High activity also in resilience and landscape ecology
- Weaker areas: Decision support, tools, indicators, economic valuation
- Collaboration increases (number of authors, international collaboration)



Conclusions (Knowledge gaps)

I. Functional relationships and measurement

- Species → Biodiversity → Functioning & Services → Benefits
- Multi-funcionality, synergies and trade-offs
- Geographical scale of data collection / management / decisions

II. Valuation

- Relation value – benefits – meaning – wellbeing
- Combining values expressed in different units
- Dependence on context and robustness over time

III. Policy instruments

- Needs for institutional change (ownership, laws, norms and attitudes)
- Scenarios and predictive modelling of new policy measures

IV. Learning and implementation

- Conditions for learning in different types of organisations
- Lifestyles, consumption and awareness
- Integration into risk / environmental impact assessments

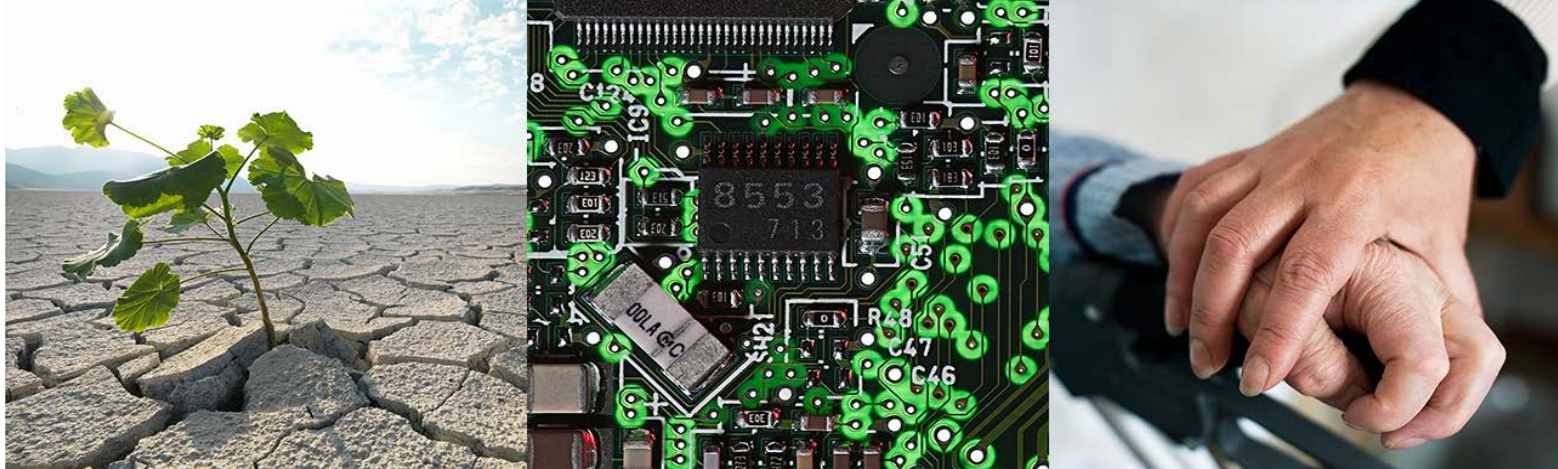


Conclusions (Collaboration)

- Strengthen the **receiver capacity** at government agencies, county administrative boards and municipalities
- Establish one or a few **collaboration platform(s)** to exchange knowledge, ideas and best-practice
- Make collaboration with actors outside of academia **more meriting**, e.g. when applying for grants
- Stimulate **increased mobility**, e.g. by devoting funding for sabbatical leave
- **Facilitate the inclusion** of e.g. small companies or the civil society in research projects
- More communication with **children and young people**



”Collaborating for knowledge – for society’s challenges and strengthened competitiveness”



Research and Innovation Bill 2016



Initiatives by the government

- National research programme - Climate
- National research programme - Food
- National forest programme



10-year national research programmes

- **Strategic coordination** of research funding among funders
- Include yearly **targeted calls**
- National research **agenda**
- Effective use of **infrastructure**
- Activities for **communication** and use of research results

	2017	2018	2019	2020
National research programme - Climate	25	75	130	130
National research programme - Food	5	10	35	?



National forest programme

- Quantify the value of ecosystem services, investigate trade-offs
- Develop business models and compensation
- Strengthened support to research
- A knowledge centre supporting dialogue platforms and synthesizing research

	2017	2018	2019	2020
National forest programme	0	?	?	?



Thank you!

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