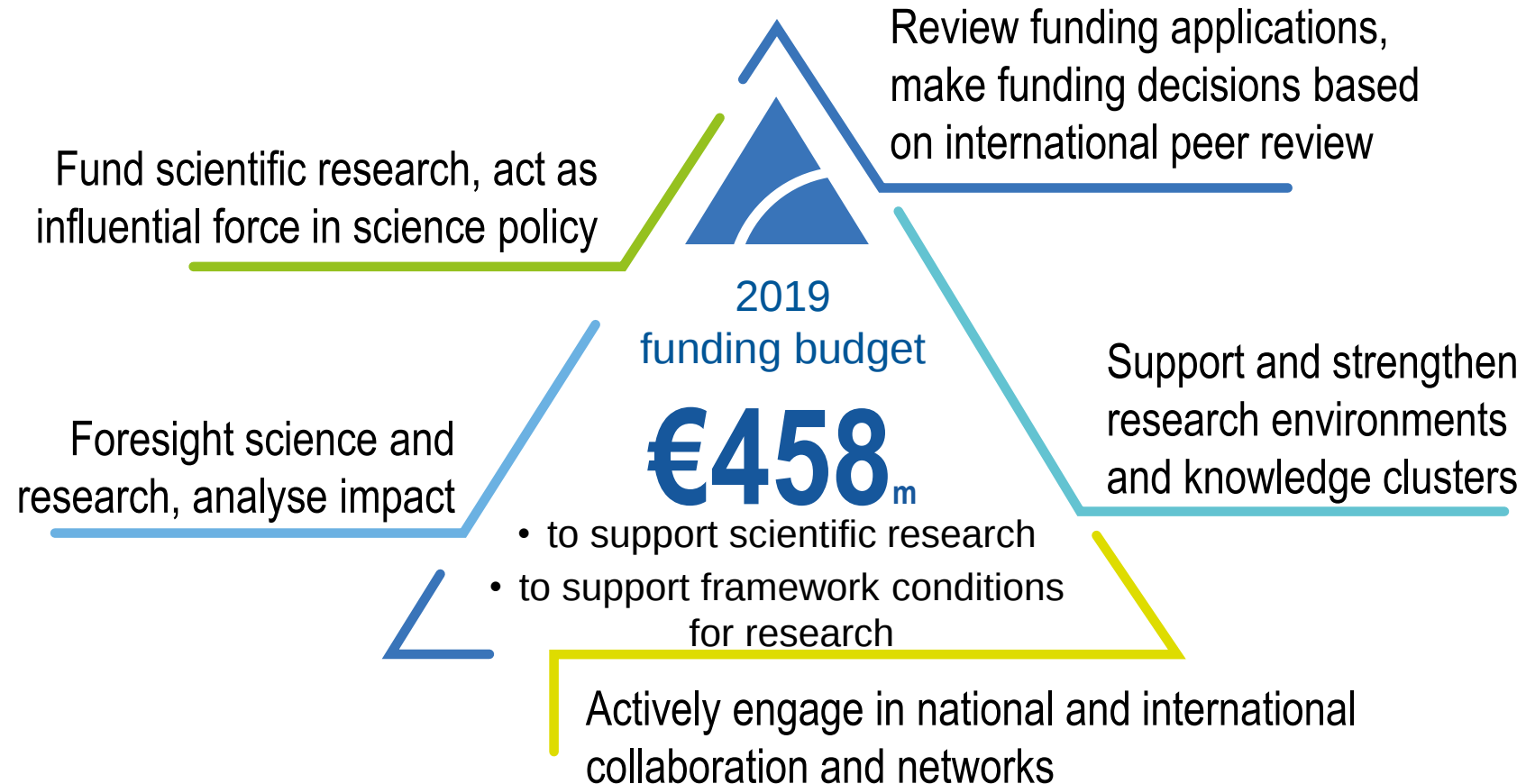




Project funding data of the Academy of Finland as an element of science policy knowledge base

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What we do



Knowledge production and analysis at the Academy of Finland (AKA)

- For whom
 - Policy-makers: support for science policy
 - Research organizations: support for developing research activity
 - AKA itself: development of funding instruments, evaluation practices etc.
 - Research community
- Typical topics of analysis
 - Resources and output of research on various levels of science system
 - Scientific and societal impact of research
 - Open science
 - Scientific collaboration between Finland and other countries
 - Influence of competitive research funding and funding policies, e.g by AKA

AKA's application and project report data

- Submitted applications
 - Applicant: e.g. name, gender, affiliation, nationality
 - Application: research plan, PI's cv and list of publications, funding applied for, grades received in review
- Granted applications
 - Same information as in regard to submitted applications + sums granted
- Project reports, data for example on
 - Personnel
 - Collaboration and mobility
 - Output: publications and other forms of output (incl. OA publishing)
 - Data management (open data)
 - Results: textual description
 - Societal impact: textual description
- Unique data on basic research in Finland

Current uses of AKA's application and project data for analysis

- Statistics on applications and funding decisions
- Open science monitoring
- Bibliometric indicator: scientific impact of publications funded by AKA
- Organizing review panels for applications: "Akalysis" tool
- Analyses of phenomenon-based research: move beyond disciplines
- Standard reporting on finished projects to decision-makers at AKA

Statistics on applications and funding decisions

- Number of applications and success rates per
 - Call
 - Funding instrument
 - Organization
 - Research field
 - Gender
 - Career stage
- Development in time
- Previously prepared by different units of AKA, in the future more responsibility to an internal working group
- Purposes
 - Development of reviewing
 - Informing the decision makers at AKA, e.g. research councils
 - Informing the research organizations and scientific community

Open science monitoring

- Promoting open science is a science policy priority for AKA
 - OA publishing when possible in AKA-funded projects (particularly journal publishing)
 - Open your data when possible (data management plans in applications)
- > Demand for data to assess the progress of open science
- > Indicators (also in AKA-MinEdu performance agreement): data based on project reports
- Status of open access publishing
 - Share OA publications in peer-reviewed journal articles produced by AKA-funded projects
 - Open data in AKA-funded projects
 - Share of projects which have opened or plan to open their data
 - What does "open data" mean for research community?

Bibliometric indicator: scientific impact of publications funded by AKA

- Background: MinEdu-AKA performance agreement
 - Provides information on the usefulness of competitive research funding
 - Informs AKA itself on possible need to develop or even discontinue certain funding instruments
- Top10 citation index of AKA-funded researchers' publications compared to Top10 index of publications by Finnish research community on average
- Indicator computed in 2016, 2017 and 2018
- Publication data: peer-reviewed articles in journals and conference proceedings published by researchers in Academy Projects (+ Academy Research Fellows since 2018)
- Publication data from AKA project reports -> matching to Web of Science data
- AKA provides the dataset -> CSC conducts matching and bibliometric computing

Bibliometric indicator: challenges and future

- Main difficulty in 2016 and 2017: quality of publication data on AKA's reports -> a lot of manual work before data is ready for CSC
- New AKA reporting form and its link to VIRTAs service -> publication data comes mostly from VIRTAs and is of higher quality than before
- Future goals
 - Include more funding instruments?
 - Conduct field-specific analysis?
 - Or: compute the entire indicator differently?
- Similar analyses conducted for different purposes, e.g. for international evaluation of AKA

Organizing review panels to evaluate funding applications

- "Akalysis" tool to help allocate applications to review panels -> now incorporated to AKA's application and review system
- Tool developed in AKA (not a commercial product)
- Akalysis finds potential panels for each funding application based on previous year's division of panels and content of application (closeness and frequencies of words)
- Science advisers at AKA still make decisions about panel division and allocation of applications to panels

Analyses of phenomenon-based research

- Knowledge base for agreement process between higher education institutions and MinEdu, and for strategies of HEIs
- HEIs name their strategic choices -> word searches in funding applications (keywords and abstract) -> how are organizations positioned in regard to topics in question?
- Similar exercise with government research institutes: ongoing pilot study with three institutes
- Also useful for AKA itself
 - For example: How much do we fund research on climate change, arctic regions etc.?

Conceptual example: research on climate change in granted applications

Share of granted funding by organization and research field in 2015-2018 (%)											
	HY	UEF	IL	LUKE	OY	SYKE	AALTO	TY	JY	...	In total
Environmental research	6,1	1,1	5,2	3,5		3,7					20,6
Meteorology and atmospheric sciences, climate	8,5	0,7	5,1	0,6		0,2					15,2
Ecology, evolutionary biology and ecophysiology	2,6	0,8	0,4	0,7	1,6	0,8		1,7	1,8		11,2
Forest sciences	1,3	6,8		1,5	0,3	0,2					10,1
Environmental science	2,7	2,4			0,2	0,7			0,4		6,7
Geosciences	1,6	0,3	0,5	0,5							4,3
Economics	0,4		0,4	0,5	2,9						4,2
Applied mathematics	1,2	0,6	0,2		0,2		0,7		0,2		3,9
Environmental engineering	0,3	0,4				0,4	1,0	0,5			3,5
Development research	1,1	0,6					0,6				2,3
Physics					1,2						1,2
Environmental social science research	0,5					0,3					1,2
Energy engineering					0,6		0,2				1,1
Media and communication research	0,5						0,3				1,1
Social sciences	0,2							0,7			1,1
...											
All research fields	31,0	15,1	12,4	8,7	7,4	6,3	4,0	3,8	2,4		100,0

Search terms used: *climate change, global warming, climatic warming, climate model, greenhouse gas, climate policy*.
Searched in keywords and abstracts of applications.

Future efforts

- Data curation, better instructions for AKA's data sources and tools – permanent working group to be established for this
- Development of text mining and related tools
- Possible collaboration with Business Finland: BF has a large data on innovation funding
- Possible/in the future, based on text mining
 - Finding and analyzing emerging research areas
 - Organizing review panels for applications: more emphasis on topics instead of disciplines, move away from previous year's panel division

A man in a blue shirt is leaning forward, looking at a laptop screen. In the background, three other people are seated at a table, looking towards the camera. The scene is set in a modern office or meeting room with large windows. A green and blue geometric overlay is present on the left side of the image.

Thank you!