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<p>Abstract</p> <p>The report presents a summary of the international evaluation of the Finnish Environment Institute SYKE and its results. The report was drawn up by the independent evaluation group appointed by the Ministry of the Environment in May 2020. Its task was to evaluate the relevance and quality of the activities of SYKE especially from the following perspectives: 1) quality and impact of the expert services, 2) societal impact and sustainability leadership, 3) cooperation and role in networks and 4) foresight and innovation.</p> <p>The findings and recommendations of the evaluation group are based on the quantitative and qualitative background materials provided to the group and interviews with leaders and key researchers of SYKE, representatives of the Ministry of the Environment selected by the Ministry, and stakeholder representatives.</p> <p>The evaluation group considers that SYKE is a progressive research institute that is widely appreciated in society. It produces research and expertise of a high standard and its societal impact is significant. The evaluators identified possibilities for development in making an impact in both national and international contexts, where SYKE could show even stronger societal leadership as a promoter of sustainable development. The group proposes numerous recommendations relating to this.</p> <p>The evaluation was conducted during June-September 2020.</p>			
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Tiivistelmä	<p>Raportti sisältää koosteen Suomen ympäristökeskuksen (SYKE) kansainvälisestä arvioinnista ja sen tuloksista. Raportin on laatinut ympäristöministeriön toukokuussa 2020 nimittämä itsenäinen arviointiryhmä. Sen tehtävänä oli arvioida SYKEN toiminnan tarkoituksenmukaisuutta ja laatua erityisesti seuraavista näkökulmista: 1) tutkimuksen ja asiantuntijapalveluiden laatu ja vaikuttavuus, 2) yhteiskunnallinen vaikuttavuus ja kestävyysjohtajuus, 3) yhteistyö ja rooli verkostoissa sekä 4) ennakoivuus ja innovatiivisuus.</p> <p>Arviointiryhmän havainnot ja suositukset perustuvat ryhmälle toimitettuihin määrällisiin ja laadullisiin taustaineistoihin sekä SYKEN johdon, avaintutkijoiden ja ympäristöministeriön valitsemien ministeriöiden edustajien ja sidosryhmien haastatteluihin.</p> <p>Arviointiryhmän mielestä SYKE on edistyksellinen ja laajasti yhteiskunnassa arvostettu tutkimuslaitos, joka tuottaa korkeatasoista tutkimusta ja asiantuntemusta ja jolla on merkittävää yhteiskunnallista vaikuttavuutta. Arvioitsijat tunnistivat kehittymismahdollisuuksia sekä kansallisessa että kansainvälisessä vaikuttamisessa, jossa SYKellä olisi edellytyksiä ottaa nykyistä vahvempaa yhteiskunnallista johtajuutta kestävänsä kehityksen edistäjänä. Tähän liittyen ryhmä esittää useita suosituksia.</p> <p>Arviointi tehtiin kesä-syyskuun 2020 aikana.</p>	
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Referat	<p>Rapporten innehåller en sammanfattning av den internationella utvärderingen av Finlands miljöcentral (SYKE) och utvärderingens resultat. Rapporten har utarbetats av en oberoende utvärderingsgrupp som miljöministeriet utsåg i maj 2020. Dess uppgift var att bedöma ändamålsenligheten och kvaliteten i Finlands miljöcentralens verksamhet särskilt ur följande synvinklar: 1) forskningens och experttjänsternas kvalitet och genomslagskraft, 2) samhälleliga verkningar och hållbarhetsledarskap, 3) samarbete och rollen i nätverk samt 4) framförhållning och innovativitet.</p> <p>Utvärderingsgruppens iakttagelser och rekommendationer baserar sig på kvantitativa och kvalitativa bakgrundsmaterial som lämnats till gruppen och på intervjuer med Finlands miljöcentralens ledning, med nyckelforskare och med de representanter för ministerier och de intressegrupper som miljöministeriet valt.</p> <p>Enligt utvärderingsgruppen är Finlands miljöcentral ett avancerat forskningsinstitut som är högt uppskattat i samhället, producerar högklassig forskning och expertis och som har betydande samhälleligt inflytande. Utvärderarna identifierade utvecklingsmöjligheter när det gäller såväl nationellt som internationellt inflytande, där Finlands miljöcentral skulle ha förutsättningar att ta ett starkare samhälleligt ledarskap som främjare av hållbar utveckling. I anslutning till detta lägger gruppen fram ett antal rekommendationer.</p> <p>Utvärderingen gjordes under juni–september 2020.</p>		
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Table of Content

Preface	8
Executive Summary	9
1 Introduction	11
The Scope of the Evaluation.....	12
Evaluation Methodology.....	13
2 The relevance and role of SYKE	14
3 Quality and impact of research and expert services	18
4 Societal impact and sustainability leadership	21
5 Collaboration and role in networks	23
6 Foresight and innovativeness	26

Appendices

Appendix 1. Terms of Reference.....	28
Appendix 2. List of the background material	35
Appendix 3. Template questions for interviews.....	37
Appendix 4. Combined list of interviewees and the received written answers	38
Appendix 5. Brief bios of the Evaluation Team	40

PREFACE

This report presents the results of an evaluation of the Finnish Environment Institute (SYKE). The report has been prepared by an international and independent Evaluation Team that was appointed by the Finnish Ministry of the Environment in May 2020. The members of the Evaluation Team, representing different types of organisations and disciplines considered relevant for an evaluation of SYKE's environmental research and expert services, were assigned to evaluate the relevance and quality of the activities at SYKE.

The findings presented in this report are based on the quantitative and qualitative background material collected for the use of the Evaluation Team as well as on the interviews of SYKE management, key research leaders, various ministries and stakeholder groups selected by the Ministry of the Environment. The evaluation was initiated in May and conducted in June–September 2020. The interviews were held as online meetings during one week in August 2020.

SYKE, which turns 25 this year, is a Finnish research and expert organisation that concentrates on supporting environmental policy implementation and sustainability in Finnish society. SYKE works under the Ministry of the Environment and, in relation to water resources management, under the Ministry of Agriculture and Forestry.

SYKE has been evaluated previously by external expert panels in 1998 and 2008.

The Evaluation Team would like to warmly thank the director general of SYKE, Professor Lea Kauppi, the research director of SYKE, Professor Eeva Primmer, and the director-general of the Department of Administration and International Affairs at the Ministry of the Environment, Ismo Tiainen, for their valuable and patient support throughout the evaluation process. The Team acknowledges that the unusual times caused by the Covid-19 pandemic throughout the world must have generated challenges for the organisation of this evaluation, requiring flexibility and courage from SYKE and the Ministry of the Environment. The Evaluation Team appreciated the assistance provided by Mrs Katri Mäkinen-Rostedt, whose support in organising and facilitating the interviews and in editing the final report was invaluable for the Team. Likewise, the Evaluation Team thanks Senior Specialist of the Ministry of the Environment Kirsi-Marja Lonkila and Executive Assistant of SYKE Niina Pykäläinen for organising the first schedule for the interviews. Lastly, we are most grateful to all the persons who gave their time and valuable input in the group interviews or in written responses. Without their guidance, this evaluation would not have been possible.

EXECUTIVE SUMMARY

Following the Terms of Reference (ToR, Appendix 1), the Evaluation Team appraised: 1) the quality and impact of SYKE's research and expert services, 2) the societal impact and sustainability leadership of SYKE, 3) SYKE's collaboration and role in networks, and 4) SYKE's foresight and innovativeness. The ToR specifically mentioned that the Evaluation Team should not concentrate on organisational matters in its evaluation work.

The Evaluation Team encountered a progressive and constructive research institute that, despite major changes in both the organisational and funding landscape in Finland and in the EU during the past ten years, has been able to deliver high-quality research findings and expert services to society. The key finding is that SYKE is well-respected as a research organisation throughout Finnish society, with a strong societal impact. In addition, the assessment found that SYKE staff considers the organisation very positively,¹ which likely contributes to the organisational success.

The ToR stipulated that the Evaluation Team identifies areas of improvement pinpointed throughout the report. As an example, SYKE can improve its national and international impact by setting its role as a visionary player towards a sustainable society in action more often. This calls for a common governance framework on behalf of the ministries in charge of SYKE as well as nurturing a culture of strategic steering, enhanced communication and innovations at the level of the institute to find new paths. These solutions could help SYKE in articulating more clearly what it might have to offer to its stakeholders in the research and expert services domains, and thereby clarify SYKE's role in society – potentially resulting in an even higher demand for its knowledge and services, and eventually, in increased levels of funding.

In the future, complex environmental and sustainability problems, like the loss of biodiversity and climate change, will continue to remain key challenges towards sustainable societies. SYKE has been able to raise both issues high on the Finnish Government's current agenda, but there is still a long way to go in terms of realising real change in society. The challenge of identifying concrete solutions to the various sustainability questions was highlighted by many stakeholders. In this setting, SYKE needs to further clarify its potential contributions to societal sustainability transition. In addition to the know-how stemming from the organisation itself, one way to respond to the growing complexity of problems is to expand and lead competent and lasting knowledge networks that enable effective co-learning and strategic pooling of resources.

¹ According to the personnel satisfaction surveys conducted in 2016 and 2018 (VMBaro), the personnel of the Finnish Environment Institute enjoy their work quite well, more than government workers on average.

The Evaluation Team suggests several recommendations on how to grow international knowledge networks and how to better engage with stakeholders, e.g. in the private sector, but also with international peers. Further, SYKE needs a more coherent, shared vision as well as more targeted communication of its possibilities as a sustainability intermediary in Finnish society in order to build more focused and impactful actions.

1 Introduction

The Finnish Environment Institute (SYKE) was established in 1995 to carry out environmental research and expert services as part of the Finnish research institution system attached to government ministries and, in the case of one research institute, to the Parliament. At the time of the evaluation, there were in total 12 publicly financed state research institutes in seven administrative sectors in Finland.² SYKE is part of the relatively new Finnish Research Institute Partnership Tulanet, which is a cooperation body comprising ten of the state research institutes established in 2017.

SYKE is steered by two ministries: the Ministry of the Environment (MoE) and the Ministry of Agriculture and Forestry (MoAF). In this arrangement, the MoAF supervises specifically the areas relating to water resources management.

SYKE has been subjected to previous evaluations in 1998³ and 2008.⁴ Both of the earlier evaluations ensued after relatively large contextual changes in the Finnish research institute landscape. In 1998, SYKE, established only three years earlier, was a new actor in the Finnish research institute system. In 2008, SYKE was in the middle of structural changes that led to some organisational re-modelling in the entire research institute system. The current evaluation takes place a few years after the most profound government-led reform of both the research institutes and the research funding system. The reform, implemented in the years 2014–2017,⁵ included both considerable structural changes (e.g. the number of research institutes was cut from 20 to 12) and a re-allocation of funding from research institutes' basic funding to two new competitive funding instruments, the government's joint analysis, assessment and research activities VN TEAS⁶ and Strategic Research Funding STN.⁷

2 Statistics Finland: Concepts: State research institute, 2020. https://www.stat.fi/meta/kas/valtutklait_en.html

3 Hepworth, R., L.-E. Liljelund, J. Theys, V. Wetzel and J. Hukkinen (1998): Futures for FEI. International Evaluation of the Finnish Environment Institute. The Finnish Environment Report 269, December 1998, Ministry of the Environment, Helsinki.

4 Leemans, R., L. Hordijk, M. Horvat, T.B. Johansson, P. Leroy and K. Peterson (2009): The 2008 Evaluation of SYKE, The Finnish Environment Institute. The Finnish Environment 4/2009, The Finnish Environment Institute, Helsinki.

5 Prime Minister's Office: Comprehensive Reform of State Research Institutes and Research Funding, 2020. <https://vnk.fi/en/comprehensive-reform-of-state-research-institutes-and-research-funding>

6 <https://tietokayttoon.fi/en/frontpage>

7 <https://www.aka.fi/en/strategic-research-funding/>

The Scope of the Evaluation

The MoE appointed an international Evaluation Team consisting of five members in May 2020 to carry out the third evaluation of SYKE. The team conducted the evaluation in May-September 2020, with the most intense working phase taking place in August-September 2020. Director **Hanne Bach** (DCE, Aarhus University) worked as the chair of the Evaluation Team, which included:

- **Jakob Granit**, Director General, Swedish Agency for Marine and Water Management
- **Maarten Hajer**, Professor, Utrecht University
- **Jonas Liimatta**, Director, Centre for Economic Development, Transport and the Environment of Northern Ostrobothnia
- **Raisa Mäkipää**, Research Professor, Natural Resources Institute Finland

Appendix 5 includes brief CVs of each member.

The international Evaluation Team represented different disciplines considered relevant for SYKE's environmental research, knowledge development and awareness raising services. Their evaluation task focused on the following areas:

1. Quality and impact of SYKE's research and expert services
2. Societal impact and sustainability leadership
3. Collaboration and role in networks
4. Foresight and innovativeness

In addition to these four areas, the Evaluation Team identified a number of cross-cutting issues related to the role and governance of SYKE and the relevance of its activities. Findings relating to the cross-cutting issues are discussed in chapter 2, while the other issues are discussed in chapters 3–6. Each chapter includes recommendations for further development of SYKE's future activities, as suggested by the Evaluation Team.

As stated in the ToR (Appendix 1), the focus of the evaluation was on specific and broader views regarding research, development and innovation (RDI). The Evaluation Team was asked to compare SYKE's activities and impact with its strategy and with similar institutes in Finland and abroad. The Evaluation Team did not consider organisational matters in accordance with the ToR.

Evaluation Methodology

SYKE and the MoE compiled guiding questions, background material and indicators on each of the four areas to be evaluated. The Evaluation Team received the material for review in June 2020. The material was complemented with information provided as a response to additional requests made by the Evaluation Team in July-August 2020. The background material included general information on SYKE as an operational and research organisation along with several indicators relating to publications, funding and societal impact. Appendix 2 includes a list of the background material provided to the Evaluation Team in electronic form. The Evaluation Team additionally had access to a common online platform for the writing task and for internal information exchange.

In addition to the information acquired through the written background material, the Evaluation Team was able to interview 59 individuals in total. The interviews were conducted in groups of 4–10 people. All interviews were done offsite as virtual meetings due to the Covid-19 pandemic and the resulting travel and meeting restrictions. The fact that the interviews had to be facilitated from a distance created multiple challenges for the Evaluation Team. Despite missing the face-to-face experience of meetings, the discussions with the groups were fruitful and useful.

The interviewees included, for example, SYKE management and the directors of its centres and programmes. No other SYKE staff were interviewed due to time constraints and the offsite interview format. Further interviews covered the main ministries, Prime Minister's Office, collaborating institutes and universities as well other relevant stakeholder organisations, such as Sitra, selected municipalities and several private foundations. The interviews also included a few members of SYKE's Advisory Board, in their capacity as representing one of the stakeholders. The interviews did not include international peers or collaborators of SYKE. The numerous interviews with various stakeholders provided a rich data source especially for evaluating SYKE's societal impact and sustainability leadership as well as the quality of its expert services and collaboration activities. Appendix 4 includes a comprehensive list of the interviewees. The interviewees received a list of questions (see Appendix 3) one week before their interview. Due to the tight schedule and limited time reserved for the discussions, each interviewee also had a chance to send her/his responses to the questions via email. In addition to the individuals interviewed during the group interviews, the Evaluation Team received six written answers from persons invited but unable to attend the group interviews.

The team presented the initial evaluation results to SYKE management and the MoE on Friday, 28 August, after which the team finalized the report. SYKE and the MoE received the draft report on Wednesday, 23 September for a checking of the facts. The final report was presented in early October 2020 to SYKE's director general, Professor Lea Kauppi, and her staff.

2 The relevance and role of SYKE

It is evident from the evaluation material that SYKE is well-respected throughout Finnish society as a research and expert services organisation and seen as very relevant for societal development focusing on sustainability. For example, SYKE has enjoyed a success rate of close to 20% when applying for research funding from the Academy of Finland. In 2019, SYKE was the most successful organisation in the Academy of Finland calls, even when compared with the Finnish universities.⁸ SYKE has similarly responded well to the Finnish Government Programme⁹ and its goals for an ecologically sustainable Finland. The focus on societal relevance has made SYKE a very attractive partner for Finnish universities when applying for research funding. SYKE is also a valuable partner for international research consortia.

When compared with other similar European institutions, the Evaluation Team considered SYKE's strategy,¹⁰ which was one of the main guiding documents of the evaluation task, as being rather brief. The strategy is, however, regarded very positively by SYKE staff and by SYKE's stakeholders, too. The interviewees reported that the strategy represents SYKE's values and that it is clear and sufficiently detailed to provide enough guidance for SYKE's operations. The strategy was created in parallel with the previous Finnish Government Programme. SYKE has also contributed to the formulation of the current Government Programme. The strategy of SYKE therefore aligns with the strategies of the MoE and the MoAF. The participatory approach used to create the current strategy engaged not just the government and its ministries, but also SYKE staff and stakeholders, which may explain the expressed sense of ownership.

The Evaluation Team found that in many strategic areas, SYKE's research, expert services and other activities matched up quite well with their strategy. SYKE is, for example, showing great vision and leadership in its activities relating to water management and building innovative Finnish networks. There were, however, certain specific areas where

8 Academy of Finland: Applications, funded projects and success rate by organisation in 2018–2020, 2020. https://www.aka.fi/globalassets/1-tutkimusrahoitus/2-arviointi-ja-paatoksenteko/5-rahoituspaatokset/table_2_funding_statistics_by_organisation.pdf

9 Prime Minister's Office: Programme of Prime Minister Marin's Government 2019. <https://valtioneuvosto.fi/en/marin/government-programme>

10 Finnish Environment Institute: Strategy, 2020. https://www.syke.fi/en-US/SYKE_Info/Strategy

SYKE's full potential and leadership were not evident to the Evaluation Team. SYKE has, for instance, been relatively active with open data issues in Finland, but it could still take a stronger role in coordinating the transition process for access to open data and drive a national digitalisation agenda in the environmental domain.

The Evaluation Team found that some of the main challenges and areas of improvement that SYKE faces arise from its multiple roles, which can make long-term prioritising and balancing between resources inside SYKE difficult at times. The SYKE Act¹¹ outlines and determines these multiple roles. Many of the interviewees had difficulties in explaining the many roles that SYKE has in society. The many responsibilities and activities raise high, and sometimes conflicting, expectations among SYKE's many stakeholders regarding the services that SYKE should provide. It can appear as if SYKE is being pulled in different directions. For example, the ministries responsible for the steering of SYKE have high expectations for SYKE's level of effort at engaging with the private sector, other non-governmental organisations and local authorities for paid or pro-bono services. How this should be handled and integrated within a given, limited resource and funding framework is not clarified. At the same time, the MoE makes requests for urgent expert services, at times communicated through informal channels. This all adds to the complexity and is inefficient in terms of resource use. SYKE works as a permitting authority in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and in international waste transfer issues. Most of SYKE's earlier permitting authority responsibilities have been transferred to regional or equivalent authorities. Still, the role of SYKE as a permitting authority, even in limited areas, creates unnecessary confusion among its stakeholders. The landscape of multiple stakeholders and, at times, conflicting expectations simultaneously demonstrate SYKE's societal relevance and highlight the challenges of managing expectations while maintaining a focus on high quality.

Balancing the different roles is a challenge for SYKE. The requests for policy advice seem to be growing. The Evaluation Team found it difficult to assess how much of SYKE's resources are devoted to the different work areas and how well this matches SYKE's own strategy and the performance targets set for SYKE by its two governing ministries. The perspectives of the two governing ministries are somewhat different in their approach, which is demonstrated by, e.g. how the setting of targeted objectives, including performance review, differs between the ministries.

SYKE's flexibility to respond to the needs of society is partly tied to the way it is funded. As a result of the research institute and funding instrument reform of 2013, SYKE's

11 Act on the Finnish Environment Institute (1069/2009) defines four key areas of work: 1) research and methodology development, 2) monitoring and evaluation of the environment, 3) expert services and 4) awareness of the environment.

budget is almost a third smaller than ten years ago.¹² At the same time, SYKE has been quite successful in applying for EU funding and funding from the government's analysis, assessment and research activities instrument (VN TEAS) and from the Strategic Research Council. Its level of external funding has grown from 38% to 64% in the years 2009–2019. The aforementioned instruments are, however, all short-term, project-based funding instruments that require a great deal of project management and might have an effect on the balancing of SYKE's resources and the services it can provide.¹³ Hence, concurrent with and in addition to more strategic steering and clearer instructions on their expectations regarding SYKE, the ministries should ensure SYKE's freedom to carry out research on all aspects within its broad strategy. More academic freedom and sufficient, long-term research funding would also make room for innovations.

The Evaluation Team found it unclear as to the extent to which SYKE's Advisory Board is supporting SYKE in its strategic considerations and crucial discussions about future directions. Based on the interviews, it was not evident that the interactions with the Advisory Board play an important role. Examples and inspiration for a more effective use exist in similar organisations in Finland and in other countries.

SYKE staff considers the organisation positively.¹⁴ The interviews with SYKE programme and centre leaders also reflected this point.

Recommendations:

1. In order to have an even greater impact on Finnish society at large and to become a stronger international player, SYKE's governing ministries could focus on streamlining their expectations regarding SYKE and concentrate more on developing the communication and steering mechanisms, like performance targets, between SYKE and themselves. Also, for SYKE itself it would be important to be able to communicate its many roles to its different stakeholders and to its own staff more clearly.
2. A possibility to establish an inter-ministerial steering committee chaired by the MoE for all SYKE governance issues to clarify and streamline steering should be considered. This clarification could entail clearly laying out the expectations and targets of SYKE to provide services to the private sector, to other non-governmental organisations and to local authorities.
3. The role of SYKE as a permitting authority should be re-considered.

12 Finnish Environment Institute: Funding, 2020. https://www.syke.fi/en-US/SYKE_evaluation/Introduction_and_general_information/Funding

13 See p. 23 in Haila, K., Aarrevaara, T., Hjelt, M., Paavola, H., Palomäki, S., Pulkkinen, K., Raivio, T., Rannikko, H., Sepponen, S., and M. Valtakari (2018): Assessment of research institutes and funding reform. Publications of the Government's analysis, assessment and research activities 74/2018. Prime Minister's Office. <http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/161250/74-2018-TULA-arviointi.pdf>

14 According to the personnel satisfaction surveys conducted in 2016 and 2018 (VMBaro), the personnel of the Finnish Environment Institute enjoy their work quite well, more than government workers on average.

4. All requests from ministry level channels for SYKE services should be coordinated through one focal point at the ministries and one entry point at SYKE to ensure proper management of staff and quality of deliverables.
5. SYKE management should clarify and describe better its services under the different work areas mentioned in the SYKE Act to be able to balance resources and enhance the interactions with private-sector and non-government organisations.
6. The SYKE Advisory Board could be drawn upon more effectively. In light of the ambitions to develop the international profile of SYKE, the Evaluation Team recommends including international membership to the Advisory Board and suggests a particular role for the Advisory Board that especially focuses on foresight and institutional models as practised elsewhere.

3 Quality and impact of research and expert services

The scientific output of SYKE, as measured through the number of publications, has remained at a stable level over the past 7–8 years.¹⁵ SYKE fulfils the basic expectations of a knowledge-based research organisation by publishing approximately one article per full-time researcher annually in international peer-reviewed journals. This is better than or at the same level as similar institutions in a Finnish context and comparable with European organisations within the same field.¹⁶ Considering the quality and impact of the publications, several European organisations within the same field as SYKE are nonetheless clearly more influential in terms of number of citations and publication share in, e.g. Top10 journals.¹⁷

The 20 most highly cited papers with SYKE authors over the past five years are in line with SYKE's strategy in terms of their thematic focus, demonstrating the organisation's ability to strategically steer research in the planned direction. These recent publications also demonstrate SYKE's widespread connections with partners, as the majority of the papers were written in collaboration with several Finnish and international organisations. Among the papers cited most often, lead authorship by SYKE researchers is limited, which is remarkable considering how well-known SYKE is in the Finnish as well as in the European context. Along the same lines, it is noted that SYKE does not currently coordinate any EU Horizon 2020 projects under the societal challenge instruments, which can make it difficult to drive the quality forward and better match the European and international level regarding scientific impact.

¹⁵ Finnish Environment Institute: Publications, 2020. https://www.syke.fi/en-US/SYKE_evaluation/Quality_and_impact_of_SYKEs_research_and_expert_services/Publications

¹⁶ Based on the (not public) figures presented during the Wageningen Environmental Research (2019): Assessment report Wageningen Environmental Research (WENR). Environmental Sciences Group. Wageningen University & Research. https://www.wur.nl/upload_mm/c/9/1/9d4a906a-57f7-41b0-9a2d-03daeabfff74_WENR%20assessment%20report%20and%20response.pdf

¹⁷ Based on the (not public) figures presented during the Wageningen Environmental Research (2019): Assessment report Wageningen Environmental Research (WENR). Environmental Sciences Group. Wageningen University & Research. https://www.wur.nl/upload_mm/c/9/1/9d4a906a-57f7-41b0-9a2d-03daeabfff74_WENR%20assessment%20report%20and%20response.pdf

Academic leadership and an individual's role as a project leader when, e.g. coordinating European research projects, need more support from the organisation together with incentives for the researchers to take up these demanding tasks.

Given the wealth of data collected on new methods, insights and ways of working, the publication level (one publication per researcher per year) appears to be lower than it could be and is holding back the international influence of SYKE. The Evaluation Team appreciates, though, that publishing in high-ranking academic journals can be difficult to combine with the requirements of 'regulatory science'¹⁸ that SYKE is crucially involved in. Balancing these equally important aspects, requiring as they do different competences, is crucial, and maintaining excellence in both aspects is not always realistic.

The Evaluation Team did not find specific information on the number of researchers holding a PhD working at SYKE. It is important for SYKE to record the development of these figures and to ensure a high academic level. SYKE has joint professorships and close cooperation with several universities (namely the University of Helsinki, University of Oulu, Jyväskylä University and the University of Eastern Finland) and it hosts PhD students. These scientific priorities may all strengthen the ability to increase its scientific impact.

The quality of SYKE's work, including its expert services, is much appreciated and considered high among the stakeholders and collaborators. Authorities at all levels, from the Prime Minister's Office to local authorities, point out the importance of the research and particularly the expert services provided by SYKE. For them, SYKE plays a very important role not only as a provider of valuable information and practical tools for environmental management, but also because of its guidance for a sustainable development path for Finnish society.

Some stakeholders call for a more balanced view on sustainable development, claiming that SYKE's advice has a tendency to promote the environmental dimension rather than considering all three dimensions of sustainability, namely social, economic and environmental, with equal weight.

Local authorities praise the practical tools and models for, e.g. flood forecasting, but also other types of data and guidance provided for their use, such as the groundwater database. Some methods and tools (such as modelling tools or databases on geographic information system (GIS) in biodiversity monitoring) developed in collaboration with local authorities and communities have not, however, been designed with sufficient attention to practical use, which has resulted in local frustration and disappointment.

18 See S. Jasanoff (1990): *The Fifth Branch: Science Advisers as Policymakers*. Harvard University Press.

The impact of SYKE's activities is high, particularly in the government and public administration at national, regional and local levels, whereas the private sector and industry see opportunities that are not being exploited.

Recommendations:

7. SYKE's status as a knowledge-based research organisation requires that scientific publishing in international peer-reviewed journals be at least maintained at the current level. Scientific impact could be improved with an enhanced focus on publishing the wealth of research material it currently possesses and by encouraging researchers to take a more prominent role as lead authors. Besides investing more strongly in academic leadership, SYKE should also support individuals in developing their project-management skills.
8. SYKE should make sure to combine competences on both publishing in high-ranking journals and developing policy relevant 'regulatory science' at a team level, i.e. at the level of research groups. This avoids the problem of requiring individuals to be excellent in both aspects, which is often not realistic.
9. SYKE should strive to take a coordinating role in more European projects, potentially also leading to a more prominent role in research publications and research networks.
10. To ensure that SYKE maintains a balanced academic profile, the positioning of the different research groups in the broader academic institutional network should be carefully monitored and readjusted, e.g. in terms of joint professorships, research training, academic exchange and traineeships.
11. The design of tools could be improved in some areas, thus ensuring more efficient use of resources, widespread application and uptake in practice with, e.g. regional and local authorities.

4 Societal impact and sustainability leadership

SYKE is clearly a trusted organisation and well-grounded in its key areas of work. It has without a doubt had an impact on sustainability issues in Finland. Government and local authorities see SYKE as a key player in supporting society on its way to a more sustainable path. Some interviewees, while recognising SYKE's societal impact and contributions on guidance for sustainability, still questioned whether this could be expressed as sustainability leadership, as mentioned in SYKE's strategy.

The private-sector and non-governmental organisations already working with SYKE praised its activities such as its networks on carbon neutrality (HINKU) and circular economy (CIRCWASTE), collaboration on best available technique (BAT) documents and the activities and capacity of SYKE with respect to the Baltic Sea region. At a more general level, however, representatives of the private sector expressed a demand for services, but also had difficulties pinpointing the concrete potential for collaboration. They also asked for more transparent and successful transition stories that could demonstrate the path from knowledge to action, either at the policy level or regarding the general well-being of the environment and society. Investing in communication was suggested as the key tool for overcoming these barriers.

That said, SYKE's policy briefs were mentioned by many as being very valuable and useful, enhancing the impact of research. Some of the knowledge end-users suggested that the impact of policy briefs could be increased by extending their scope to encompass broader questions while being at the same time targeted to end-user's specific needs. Similarly, SYKE's expert services would potentially benefit from combining a broader spectrum of projects and activities in the policy briefs so that the usefulness and impact of the results would be increased.

One of the great benefits of SYKE's activities, recognised by several stakeholders, are the monitoring services and data access provided by SYKE. Regional and local authorities asked for more integration of local data into the national databases with the purpose of, on the one hand, assisting their own work, and on the other of ensuring access and better use of local resources for all, including other regions. Some interviewees, particularly

academic partners, expressed a concern that the technologies and thinking behind some of the information systems were lacking behind the state-of-the-art.

In some areas, SYKE is recognised as a forerunner in open data – e.g. SYKE received a Finnish open science award in 2019 – and in collaborative work and engaging with and promoting novel monitoring techniques. Often, the examples mentioned by stakeholders in this context were its marine monitoring techniques and the Finmari research infrastructure. The potential for SYKE to have a prominent role in digitalisation and open data concerning environmental information was expressed by many stakeholders as an obvious, but still underdeveloped, opportunity.

While SYKE has a clear societal impact in the Finnish context, some stakeholders with strong international ties expressed regret that some of the valuable tools and methodologies developed were only available in Finnish. They recognised that these tools were targeted to the Finnish audience, but that the methodologies and novel approaches being applied would be of importance also for a wider audience. Hence, SYKE could invest more in communicating in English as a way to reach out with its wealth of data, research and expertise. SYKE's innovative tools, such as the Baltic Sea calculator,¹⁹ would most likely interest also the international audience. The lack of using English as the key language to communicate its results is a missed opportunity to have a societal impact on a broader international scale. This also applies to the policy briefs, of which only a limited number are promoted in the English version of SYKE's website, even though they have been translated, some even into Russian. As SYKE's policy briefs received many positive comments from the interviewees, they could be displayed more prominently to the non-Finnish speaking audience.

Recommendations:

12. SYKE should improve its capacity to tell impactful stories describing how it supports and influences the sustainability transition to inspire new collaboration partners, e.g. in the private sector.
13. SYKE should in its policy briefs and other advisory services be clearer and more specific in its recommendations targeted at specific end users.
14. SYKE should take a stronger role in coordinating and providing a forum as a broader basis for disseminating data and managing the transition process for access to open data in Finland, while driving a digitalisation agenda in the environmental domain.
15. SYKE management should ensure that all its key documents, including its annual reports, technical reports and tools, are available in English. When English is not being used as a key language for documentation, SYKE misses out on many opportunities to convey its message throughout the Baltic Sea region, the EU and globally. This translates into missed influence at the international level.

¹⁹ <https://www.syke.fi/itamerilaskuri>

5 Collaboration and role in networks

The Evaluation Team found that SYKE plays a very active role especially in multiple national networks (e.g. the Towards Carbon Neutral Municipalities (HINKU) network, CIRCWASTE²⁰ and the Finnish Sustainable Communities (FISU) network) as well as in international networks (e.g. Partnership for European Environmental Research (PEER) along with several European Environment Agency and Baltic Sea-centred BONUS projects). Its stakeholders are also diverse, including decisionmakers, research institutes, universities, local authorities, companies, non-governmental organisations (NGOs) and citizens. As stated before, many of the interviewees mentioned the HINKU network of municipalities as a success story of SYKE. All interviewees underlined that SYKE is easy to collaborate with, provides competence and relevant expertise, and is open minded. SYKE was often described as irreplaceable for many national actors: SYKE collects, monitors and provides valuable and unique data and knowledge for Finnish authorities. SYKE's role as a national educator is highly valued among citizen NGOs. SYKE appears also as a desired international partner; the MoE receives nomination requests specifically directed to SYKE personnel from international institutions. Lastly, the National Expert Panel on Sustainable Development is hosted by SYKE, LUKE and the University of Helsinki (HELSUS), and the chair of the panel is currently from SYKE. Especially ministry representatives emphasised SYKE's role in sustainability leadership and the importance of this expert forum. This all matches well with some of the aims promoted by SYKE in its strategy: SYKE works within its strongest areas proactively with a diverse partner and stakeholder network.

Hence, it is surprising that SYKE neither has more leading roles in international networks nor that its potential to work as a leading partner has been realised in highly cited publications. Further, even if the level of EU funding in SYKE is high (15% in 2019), SYKE is not among one of the most successful organisations when compared with other Finnish organisations participating in Horizon2020.²¹ According to some of the interviewees, SYKE might thus have under-used its potential in those consortium projects that tackle environmental challenges and are funded by, e.g. Pillar 3 of the current H2020 programme. With the success of Finmari, and stemming from its strategic aim of being an

20 CIRCWASTE is a seven-year LIFE IP project that promotes the efficient use of material flows, waste prevention and new waste and resource management concepts.

21 European Commission: H2020 Country Profile, 2020. <https://webgate.ec.europa.eu/dashboard/sense/app/a976d168-2023-41d8-acec-e77640154726/sheet/0c8af38b-b73c-4da2-ba41-73ea34ab7ac4/state/0>

open data forerunner, SYKE could also build strategic collaboration in other environmental fields around national- or even European-level research infrastructures.

Large integrated projects on carbon neutrality and circular economy (such as the above-mentioned HINKU, which strives for carbon neutrality, and CIRCWASTE, which aims for a circular economy) being led by SYKE have demonstrated innovations in creating a societal impact. These projects transfer knowledge to end-users, but target groups seem to mainly be in the public sector and much less often involve private companies, which also could boost innovative approaches.

One of the aims behind the significant government-led research institute and research funding reform was to increase the collaboration between universities and research organisations. The reform also re-focused funding for phenomenon-centred and more societally impactful research that would help ministries in their decision making through the government's analysis, assessment and research activities instrument (VN TEAS) and through Strategic Research Council-funded research. SYKE has been successful with both of these new instruments. For example, of the 17 Strategic Research projects underway in 2019, three were also coordinated by SYKE.²² This is a strong indicator of SYKE's impactful research and expertise.

SYKE's membership in the new Tulanet partnership and its several collaborations with Finnish universities are in concert with the government-led reform's aims of engaging in stronger collaboration, sharing best practices and pooling research infrastructures. However, the Evaluation Team, in line with the KOTUMO findings,²³ encourages SYKE to also take a more strategic view on these collaboration opportunities in order to build more agreement-based and stronger partnerships not just with universities but also with private companies to find common, national-level spearheads in RDI. At the same time, it should be noted that these often project-based activities should not endanger SYKE's long-term cooperation and platforms, which are considered equally important for bringing knowledge into action and having a societal impact.

Interviewees mentioned that SYKE's collaboration is in some cases dependent on personal relations rather than being organisationally anchored. The Evaluation Team finds that one part of streamlining SYKE's activities could be stronger institutional support for creating collaboration and partnerships. In this way, collaboration activities would not

22 Finnish Environment Institute: Funding, 2020. https://www.syke.fi/en-US/SYKE_evaluation/Introduction_and_general_information/Funding

23 Korkeakoulujen ja tutkimuslaitosten yhteistyön syventämisen tiekartta (2017): Arvio toimenpiteiden toteuttamisesta. Opetus- ja kulttuuriministeriön julkaisu 14/2017. Opetus- ja kulttuuriministeriö, Helsinki. <http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/79580/KOTUMO%20arviointin%20loppuraportti.pdf>

only be based on personal connections and skilled individuals, but would also be part of institution-led, broader-based strategic activities.

Recommendations:

16. SYKE should take a leading role especially in international networks more frequently to have wider impact in the EU and globally.
17. SYKE could promote a Finnish RDI strategy in relevant areas (spearheads, strong fields) together with its partners to increase Finnish impact in EU research and innovation. Finding strong focus areas would help both streamlining resources and building sustainability leadership.
18. A more active and strategic collaboration of SYKE with the private sector will enhance innovations and the transfer of knowledge, supporting sustainable development in Finland and globally.
19. Strategic collaboration with stakeholders should be embedded more strongly as part of SYKE's organisational practices to avoid reliance solely on individual persons and their personal relationships.

6 Foresight and innovativeness

As noted, SYKE is greatly respected as a reliable collaboration partner among all its diverse stakeholder groups. This fits quite well with the 2017 OECD report on Finnish innovation policy,²⁴ which stated that the strengths of the whole Finnish innovation system are represented by a strong culture of collaboration and know-how. These advantages – being a strong hub and a builder of collaboration and expertise on sustainability in Finland – are also definitely the strengths of SYKE and expressed clearly as part of SYKE’s strategy.

SYKE could, however, take even more strategic advantage of its role as a visionary and innovative interface in Finnish society. Many of the stakeholders of SYKE noted that the organisation is at its best when shaping new methodologies for sustainability in longer term research projects, but they also noted that there is still room for improvement in how SYKE presents the results of its shorter projects to a larger audience. New communication tools, such as ultra-short Twitter videos and other social media communication instruments, could be investigated in order to reach new audiences. The stakeholders interviewed also voiced feelings that SYKE fails to collect all of its valuable information into more systemic and holistic representations of knowledge or concrete deliverables. The Evaluation Team, too, found that SYKE’s project-based foresight work is visible, but this work is not regularly packaged as foresight action or services, such as comprehensive scenarios based on strategic policy activities. For example, SYKE’s policy briefs are of high quality and widely known, which is why they could be better utilised as a means to demonstrate the organisation’s capacity to read the future, serving both the needs of the government and other stakeholders with respect to sustainability. Alternatively, a regular foresight publication²⁵ could also be an option.

The innovative attitudes and approaches of individual researchers at SYKE were much appreciated in the interviews held by the Evaluation Team. The culture and shared values of SYKE were also seen as promoting an innovative organisational culture. SYKE was also awarded in 2019 for its integrated and engaging evaluation approach as well as open data. SYKE has also developed novel monitoring techniques. New interesting SYKE

24 OECD (2017): OECD Reviews on Innovation Policy: Finland 2017. OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264276369-en>

25 See as example the RAND Corporation for more inspiration: <https://www.rand.org/randeurope/methods/futures-and-foresight-studies.html>

projects that have just received funding include, e.g. e-DNA species identification, from the Academy of Finland. Nonetheless, the interviewees did not see the organisation as a whole (meaning all of its policies, processes, systems and its infrastructure) as innovative. This was partly explained as being the result of a lack of holistic coordination (in terms of innovation practices) and of carefully targeted, synthesised communication. Especially the stakeholders representing industry expressed a desire for more intensive work towards concrete solutions to sustainability problems. It was also suggested that an innovative attitude could be embedded more deeply in the organisation's everyday processes.

Some of the specific areas that stakeholders and the Evaluation Team saw potential for SYKE to take more of a lead in creating concrete innovation solutions were remote sensing and the possibilities of artificial intelligence (AI), for instance in monitoring the environment (e.g. SYKE's Intelligent Water project) and in the service design of databases (e.g. SYKE's Monitor2020 project). There is also a great potential for SYKE to still develop its role as an expert in different collaborative and engaging approaches. These approaches, such as co-design and co-creation, could be applied not just in projects where SYKE works together with companies to deliver concrete sustainability solutions, but also as a method for delivering scientific advice to decision makers. One area that the interviewed stakeholders repeatedly expressed a desire for SYKE to expand its knowledge further was in the socio-economic domain. In particular, economical expertise was seen as important for strong foresight work and also for, e.g. the economic aspects of impact assessments. SYKE could potentially receive fresh insight for its future directions if the Advisory Board is drawn upon more effectively and international representation added to it (see recommendation number 6.).

The freedom to research all aspects of its broad strategy will make room for innovation at SYKE and can be considered one of its strong advantages. This freedom should be valued and safeguarded, even if more focus is directed in the future to concrete solutions and innovations.

Recommendations:

20. SYKE should embed foresight and innovation work more distinctively as a separate question in its strategy implementation, annual planning and performance management. SYKE should also communicate its foresight results and, e.g. publish a foresight/outlook message at regular intervals or include foresight messages in its policy briefs.
21. SYKE should continue building collaboration with the private sector to boost innovations and concrete solutions for sustainability in Finland.
22. SYKE should invest more in communication methods regarding its innovation approaches to reach a larger audience.

Appendix 1. Terms of Reference



Ympäristöministeriö
Miljöministeriet
Ministry of the Environment

International evaluation of the Finnish Environment Institute (SYKE)

TERMS OF REFERENCE

Introduction to SYKE and to the evaluation

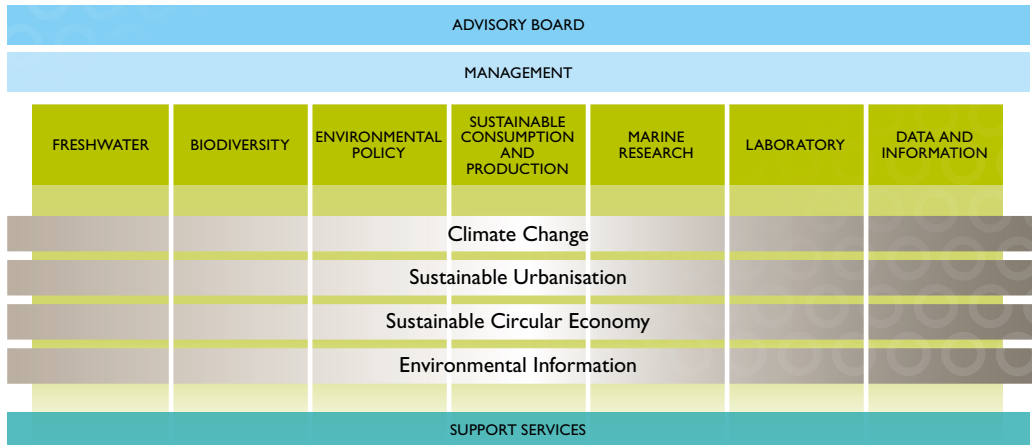
The Finnish Environment Institute, SYKE, was established in 1995, when a major decentralization of state administration was implemented. The administrative tasks of the former National Board of Waters and the Environment were transferred to the newly established regional environmental centres, while research and development activities were assigned to SYKE. In 2009 parts of the Finnish Marine Research Centre were merged to SYKE. Today, SYKE is a multidisciplinary research and expert institute, whose tasks centre around building a sustainable society and supporting environmental policy implementation. The information, knowledge, expertise and services of SYKE support public and private decision-making, in a trans-disciplinary fashion.

SYKE works under the [Ministry of the Environment](#) and regarding water resources management under the [Ministry of Agriculture and Forestry](#). With Government budget accounting for approximately 40 percent of SYKE's funding, SYKE is a competitive research and expert organisation, serving acute and long-term knowledge needs in the society.

SYKE's staff of 580 includes researchers, experts and support professionals, who are based in Helsinki, Oulu, Jyväskylä and Joensuu. All SYKE's [offices](#) are located on university campuses. SYKE's activities are organised into seven centres and four strategic programmes, as well as the international affairs unit, administrative services and communications unit. SYKE has an [Advisory Board](#).



Finnish Environment Institute SYKE | Organisation



SYKE collaborates with a broad range of actors in Finland, in the EU and internationally. In formal **networks** and through project collaboration, SYKE's partners include research institutes and universities, administration of various sectors, cities and municipalities, industry, companies and think-tanks as well as non-governmental organisations and citizens. SYKE experts participate in governmental and intergovernmental processes, feeding the findings from environmental research on a broad spectrum.

SYKE has been evaluated twice in the past, in 1998 and 2008. The first evaluation in 1998 concluded with operational recommendations to improve SYKE's international and national outreach. The evaluation in 1998 concluded with a number of operational recommendations to improve SYKE's international and national outreach. The latter evaluation in 2008 addressed environmental and sustainable development challenges, as well as methodological, organisational and strategic challenges. It recommended taking a more active role in assessing and evaluating environmental policy, and doing this in a way that integrates different disciplines and methods, making use of SYKE's own data and participatory approaches.

Since the previous evaluation of SYKE Finland's research organisation and funding landscape have changed significantly. Seeking to increase the efficiency, dynamism and societal relevance of research, the Finnish Government started a reform of the research institutes and their funding structure in 2013. The reform resulted in budget cuts and mergers of research institutes as well as the establishment of new funding instruments. SYKE experienced the cuts as well, and the austerity orientation of the following governments was reflected in SYKE's budget allocations. SYKE's annual budget funding is now almost a third smaller than ten years ago. At the same time, SYKE has been successful

in accessing external funding from the new Finnish funding instruments, as well as from the European Union instruments.

SYKE's **strategy** is to go beyond conducting research and producing knowledge, to support decision-making with a sound knowledge base and through collaboration. SYKE's mission is to produce relevant information, novel understanding and innovative solutions for achieving sustainable development, and its vision for 2030 outlines: "together with our partners and stakeholders we have succeeded in guiding society's development onto a sustainable path. As its knowledge backbone, SYKE hosts long time-series of environmental monitoring data, based on which it develops models, planning tools and calculators. Many of SYKE's researchers co-supervise PhD and Master's students or teach at universities in their specific areas – but they do not give entire courses. Many of SYKE's researchers co-supervise PhD and Master's students or teach at universities in their specific areas. It should be mentioned that only universities and universities of applied sciences have formal teaching duties and can grant degrees. As the collaborative approach, along with a focus on generating impact, has been at the centre of Finnish and European funding instruments and RDI policies, SYKE has been in a position to turn these principles into practice.

SYKE's knowledge is in high demand. The latest environmental assessments, including the European environment – state and outlook 2020 (SOER 2020, 2019), the Global Sustainable Development Report 2019 (GSDR, 2019), the Global Assessment Report on Biodiversity and Ecosystem Services (IPBES, 2019) and the Global Warming of 1.5 °C (IPCC, 2018), have all emphasised a need for transformative system level change. The European Green Deal further emphasises the need for just transition to no net emissions of greenhouse gases by 2050, economic growth is decoupled from resource use and no person or place left behind. **Finland's current Government Programme** aims for a socially, economically and ecologically sustainable society, and sets an ambitious target for Finland to become carbon neutral by 2035. SYKE seeks to continue being a forerunner in operationalising sustainability transition in a trans-disciplinary fashion.

Scope of the evaluation

The evaluation should focus on the relevance of SYKE's activities, reflecting on the dynamic and engaging approach that SYKE seeks to follow. To support this broad focus, the evaluation is organised into four areas, starting from specific, and proceeding to broader views on research, development and innovation (RDI):

1. Quality and impact of SYKE's research and expert services
2. Societal impact and sustainability leadership
3. Collaboration and role in networks
4. Foresight and innovativeness

The focus of the evaluation is not on organisational matters.

The evaluation will be organised with the following guiding questions, for which background material and indicators will be provided. The below web-links provide an overview on SYKE's activities.

Background information	
Strategy	Website
Organisation chart	Website
Experts	Website
Staff	Staff: person years and gender-division Staff in organisational units (person years) Age structure Proportion of professional and support staff and gender-division Number of trained researchers with PhDs
Financing	Website Budget, Eur External funding and sources, Eur
Area	Guiding questions, material and indicators (current or since 2016)
1. Quality and impact of SYKE's research and expert services	<p>Questions for evaluators</p> <p>Q: How do SYKE's research and expert project portfolio, activities and output quality match SYKE's strategy?</p> <p>Q: How do they compare with similar institutes?</p> <p>Q: How could the quality and impact of SYKE 's research and expert services be improved?</p> <p>Material:</p> <p>Examples of research and expert service activities feeding inputs to decision-making</p> <p>Examples of high-impact publications</p>
Publications	<p>Website</p> <p>Number of publications</p> <p>Number of publications per organisational unit</p> <p>Number of papers in Q1 journals</p> <p>Top-10 index (also from LUKE and THL and from some European insitutes, like CEH and UFZ))</p> <p>Number of papers published open access</p> <p>Number of papers with Finnish and international co-authors</p> <p>Number of 1st author papers</p>
Services	Website
Research and development projects	<p>Website</p> <p>Research infrastructures</p> <p>Number of research projects funded by the Academy of Finland</p> <p>Success rate in the Academy of Finland / average success rate</p> <p>Number of research projects funded by H2020</p> <p>Success rate in H2020 / average success rate</p>

<p>2. Societal impact and sustainability leadership</p>	<p>Guiding questions</p> <p>Q: How do SYKE's societally relevant project portfolio, outreach and societal impact match SYKE's strategy?</p> <p>Q: How does SYKE portray leadership in sustainability transition?</p> <p>Q: How does SYKE's societal impact and sustainability leadership compare with similar institutes?</p> <p>Q: How could SYKE's outreach, societal impact and sustainability leadership be improved?</p> <p>Examples of societal impact</p> <p>Examples of commissioned projects from various funding sources</p> <p>Material:</p> <p>Number of reports directed at decision-makers</p> <p>Number of blogs</p> <p>Number of Policy Briefs</p> <p>All English language blogs</p> <p>All English language policy briefs</p> <p>Social media indicators</p> <p>Number of parliament hearings</p> <p>Number of website visits</p> <p>Number of users of open data</p> <p>Media barometer 2019</p> <p>Citizen barometer 2019</p> <p>Prizes (examples)</p> <p>Calculators and other interfaces (examples)</p> <p>Number of projects funded by Prime Minister's Office (PMO)</p> <p>Proportion of sole / leader role in ongoing PMO projects</p> <p>Number of projects funded by the ministries</p> <p>Number of EU Interreg and Life projects</p> <p>Proportion of projects with sole or leader role</p>
<p>3. Collaboration and role in networks</p>	<p>Guiding questions</p> <p>Q: How does SYKE's collaboration and role in networks match SYKE's strategy?</p> <p>Q: How does SYKE's collaboration compare with similar institutes?</p> <p>Q: How could SYKE's role in networks and collaboration be improved?</p> <p>Material</p> <p>Examples of hosted meetings and sessions</p> <p>Examples of long-term collaboration with research institutes</p> <p>Examples of collaboration with cities, business, education and NGOs</p> <p>Number and proportion of ongoing collaborative projects</p> <p>Leadership in ongoing collaborative projects</p> <p>Number of memberships in national governmental committees, working groups & examples of SYKE's role</p> <p>Number of members in scientific panels & examples of SYKE's role</p> <p>Number of members in international committees, networks and assessments & examples of SYKE's role</p>
<p>4. Foresight and innovativeness</p>	<p>Guiding questions</p> <p>Q: How does SYKE's foresight and innovativeness match SYKE's strategy?</p> <p>Q: How does SYKE's foresight and innovativeness go beyond SYKE's strategy?</p> <p>Q: How could SYKE's foresight and innovativeness be improved?</p> <p>Material</p> <p>Examples of innovation and foresight</p>

The organisation of the evaluation

The evaluation is assigned by the Ministry of the Environment, represented by **Ismo Tiainen**, Director General of the Department of Administration and International Affairs at Ministry of the Environment.

The evaluation will be conducted by a team of esteemed experts representing various disciplines relevant for environmental research and with background in comparable research institutes in Europe and in Finland, as well as experts representing SYKE's knowledge users from Finland and Europe.

The evaluation team members are:

- **Hanne Bach** (Chair of the evaluation team), Director, DCE - Danish Centre for Environment and Energy, Aarhus University, with ample international experience, including Chief Technical Advisor of Environment Programme at the Mekong River Commission
- **Maarten Hajer**, Professor of Urban Futures at Utrecht University, former Director of the Netherlands Environmental Assessment Agency (PBL), ample international experience, including member of the UN International Resource Panel
- **Jakob Granit**, Director General of Swedish Agency for Marine and Water Management, formerly Director at the Stockholm Environment Institute (SEI), broad international experience, e.g., as the International Waters Panel Member of the UN Global Environment Facility Scientific and Technical Advisory Panel (GEF STAP)
- **Jonas Liimatta**, Director at the Centre for Economic Development, Transport and the Environment of Northern Ostrobothnia (Pohjois-Pohjanmaa)
- **Raisa Mäkipää**, Research Professor, Research manager of Sustainability science and indicators, Bioeconomy and environment, at the Natural Resources Institute Finland

The evaluation will be facilitated by **Kirsi-Marja Lonkila** (kirsi.marja.lonkila@ym.fi), the Ministry of the Environment.

The team will receive access to an electronic background material package, and access to an electronic platform in which the evaluation will be conducted. The evaluation report drafts will be viewable only by the facilitator and the evaluation team, and the final draft will be shared with SYKE's management team for correcting potential misunderstandings. The final evaluation report will be public.

The evaluation will be conducted off-site, and through facilitated tele-meetings as well as on-site (or off-site in case travel limitations continue), with interviews of stakeholders.

The stakeholders of SYKE whom the evaluation team will meet include at least: Ministry of the Environment, Ministry of Agriculture and Forestry, Academy of Finland, Prime Minister's Office, SYKE's Advisory Board.

Timeline of the evaluation

The evaluation will be conducted in July-September. The material will be provided to the evaluation team by 22nd of June. The evaluation team can provide additional questions and request clarifications through an on-line interface by mid-august. The first tele-meeting with the evaluation team, the Ministry (Ismo Tiainen) and SYKE (Lea Kauppi and Eeva Primmer) will be held on 29 June-1 July. The evaluation team can request to hold a tele-meeting in July. The on-site visit (or series of tele-meetings) will be on 24-27 August. The evaluation team will present its findings at the end of the visit and have a first draft ready. If needed, the evaluation team can have internal tele-meetings in September. The final draft of the evaluation report is due on 23 September and the final report at the end of September. The evaluation team can, if they wish, hold a feed-back session with SYKE directors during the 1st week of October.

Activity	May	June	July	August	Sept	Oct
Terms of Reference by MoE	0					
Material for evaluation by SYKE		0				
Start-off meeting with evaluation team and SYKE		0				
Optional meetings among the evaluation team			0	0		
Optional requests for clarification and additional questions by evaluation team				0		
Meeting with SYKE and stakeholders on site or tele				0		
First draft report and feedback from SYKE Directors				0		
Optional meetings with by the evaluation team					0	0
Final draft of the report					0	
Comments from SYKE directors					0	
Final report						0
Optional feedback session						0

Appendix 2. List of the background material

The primary material for the review was compiled by the Ministry of the Environment and SYKE. It is available on the evaluation website https://www.syke.fi/en-US/SYKE_evaluation/Introduction_and_general_information

Additional brochures and slides

Academy of Finland (2019): State of Scientific Research in Finland 2018. Slides. https://www.aka.fi/globalassets/2-suomen-akatemia-toiminta/2-tietoaaineistot/state_of_scientific_research_2018_slides.pdf

SYKE (2020): Exemplary, highly cited articles that relate to SYKE's strategy. SYKE (2020): Publications 2016–2019, publication types A1 (original peer-reviewed scientific journal articles) and A2 (review articles in scientific journals).

SYKE (2020): A non-comprehensive list of SYKE's international researcher and expert visits.

SYKE (2020): SYKE's high-impact articles.

SYKE (2020): TOP20 SYKE's highly cited articles in field, years 2016–2019.

Tulanet (2020): Finnish State Research Institutes and their co-operation. Slides.

Publications and reports

Haila, K., Aarveaara, T., Hjelt, M., Paavola, H., Palomäki, S., Pulkkinen, K., Raivio, T., Rannikko, H., Sepponen, S., and M. Valtakari (2018): Assessment of research institutes and funding reform. Publications of the Government's analysis, assessment and research activities 74/2018. Prime Minister's Office. <http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/161250/74-2018-TULA-arviointi.pdf>

Hepworth, R., L.-E. Liljelund, J. Theys, V. Wetzel and J. Hukkinen (1998): Futures for FEI. International Evaluation of the Finnish Environment Institute. The Finnish Environment Report 269, December 1998, Ministry of the Environment, Helsinki.

Järvinen, E., Kauppi, L., Pietilä T., Oksanen N., Wainio-Biese T., Primmer E. ja H. Juvonen (2019): Suomen ympäristökeskuksen toimintakertomus ja tilinpäätöslaskelmat vuodelta 2019. Suomen ympäristökeskuksen raportteja 7/2020. Suomen ympäristökeskus, Helsinki. <https://helda.helsinki.fi/handle/10138/312658>

Korkeakoulujen ja tutkimuslaitosten yhteistyön syventämisen tiekartta (2017): Arvio toimenpiteiden toteuttamisesta. Opetus- ja kulttuuriministeriön julkaisu 14/2017. Opetus- ja kulttuuriministeriö, Helsinki. <http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/79580/KOTUMO%20arvioinnin%20loppuraportti.pdf>

Leemans, R., L. Hordijk, M. Horvat, T.B. Johansson, P. Leroy and K. Peterson (2009): The 2008 Evaluation of SYKE, The Finnish Environment Institute. The Finnish Environment 4/2009, The Finnish Environment Institute, Helsinki.

OECD (2017): OECD Reviews on Innovation Policy: Finland 2017. OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264276369-en>

Suomen ympäristökeskus (2019): Ympäristöministeriön ja Suomen ympäristökeskuksen välinen tulossopimus vuosille 2020-2023. <https://www.syke.fi/download/noname/%7B0D64FD60-9B08-42F8-9D0A-2DBF710BBFDF%7D/154009>

Suomen ympäristökeskus (2019): Maa- ja metsätalousministeriön ja Suomen ympäristökeskuksen välinen tulossopimus vuosille 2020-2024. <https://www.syke.fi/download/noname/%7BB5B4C5FD-98D1-4B8D-A52D-348B3646C389%7D/157815>

Appendix 3. Template questions for interviews

General

What is your and your organisation's connection to SYKE? Could you please provide a brief overview of your collaboration with SYKE in the past?

Quality and impact of SYKE research and expert services

1. What are the main strengths/weaknesses of SYKE in contributing to high quality environmental research and methodology development?
2. In your opinion, what is the role of SYKE in the Finnish education landscape and how well has SYKE succeeded in that role?
3. What are the main strengths/weaknesses of SYKE in providing environmental services?
4. What are the main strengths/weaknesses of SYKE in monitoring and evaluating the state of Finnish environment both in regions and nation-wide?
5. Thinking about raising the awareness of the environment in general, what has been SYKE's role in the Finnish public?

Societal impact and sustainability leadership

6. In your opinion, has SYKE been prioritizing the right issues in its activities in providing impact and promoting sustainability?
7. Do you think that the balance between expert services and research activities is good in SYKE?
8. What do you consider as SYKE's main strengths and weaknesses in providing expertise for environmental policy making?

Collaboration and role in networks

9. Do you think that presently there is a good balance at SYKE between regional, national and international activities including network engagement?
10. How has SYKE's networking evolved and developed during the last five years?
11. In your opinion, how well does SYKE reach its clients and potential users of knowledge?
12. In your opinion, has SYKE's collaboration been focusing on right areas and partners?
13. What do you consider to be SYKE's main strengths and weaknesses in managing collaboration?

Foresight and innovativeness

14. Do you consider SYKE's strategic future oriented activities sufficient?
15. What do you consider to be SYKE's main strengths and weaknesses in relation to the institute's ability to innovate and renew itself?

Appendix 4. Combined list of interviewees and the received written answers

Members of SYKE Staff

Family Name	First Name	Position
Ahlroth	Petri	Director of the Biodiversity Centre
Eklin	Tero	Director of the Laboratory Centre
Furman	Eeva	Director of the Environmental Policy Centre
Heiskanen	Anna-Stiina	Director of the Freshwater Centre
Hildén	Mikael	Director of the Climate Change Strategic Programme
Jantunen	Jorma	Director, General Management
Juvonen	Harri	Director, Development
Kankaanpää	Paula	Director of the Marine Research Centre
Kauppi	Lea	Director General
Kautto	Petrus	Director of the Sustainable Circular Economy Strategic Programme
Meissner	Kristian	Director of the Programme for Environmental Information
Norros	Kirsi	Communications Director
Primmer	Eeva	Research Director
Santala	Jukka	Director of Information Management
Seppälä	Jyri	Director of the Sustainable Production and Consumption Centre
Tainio	Marko	Acting Director of the Sustainable Urbanisation Strategic Programme
Törnroos	Tea	Division Manager
Wainio-Biese	Terhi	Director of Administration

Non-SYKE Interviewees

Family Name	First Name	Ministry, Institute or Organisation
Asikainen	Antti	Natural Resources Institute Finland (Luke)
Bäck	Saara	Ministry of the Environment
Damski	Juhani	Ministry of the Environment
Granholm	Heikki	Ministry of Agriculture and Forestry
Haaranen	Tarja	Ministry of the Environment
Halonen	Jaana	Finnish Institute for Health and Welfare (THL)
Hanski	Minna	Ministry of Agriculture and Forestry
Holkeri	Heidi	Ministry of the Environment
Höjjer	Laura	Baltic Sea Action Group
Järvinen	Laura	The Finnish Innovation Fund Sitra
Kajan	Jukka	Verso Food (Member of SYKE Advisory Board)
Kunttu	Henrik	University of Jyväskylä
Kutinlahti	Pirjo	Ministry of Economic Affairs and Employment

Family Name	First Name	Ministry, Institute or Organisation
Laaksonen	Ari	Finnish Meteorological Institute
Lehtinen	Teppo	Ministry of the Environment
Lettojärvi	Heidi	Finnish Energy (ET)
Lindblom	Annika	Ministry of the Environment
Lundvall	Päivi	Finnish Association for Nature Conservation (FANC)
Madekivi	Olli	Centre for Economic Development, Transport and the Environment (Varsinais-Suomi)
Maijala	Riitta	Academy of Finland
Marttinen	Sanna	Tulanet
Muurman	Jarmo	Ministry of the Environment
Määttä	Tapio	University of Eastern Finland
Nakari-Setälä	Tiina	VTT (Member of SYKE Advisory Board)
Nikkola	Elina	Ministry of Agriculture and Forestry
Ojala	Elina	City of Lahti
Ollikainen	Markku	University of Helsinki (Chair of SYKE Advisory Board)
Pajukallio	Anna-Maija	Ministry of the Environment
Peltonen	Petri	Ministry of Economic Affairs and Employment
Pietola	Liisa	The Central Union of Agricultural Producers and Forest Owners (MTK)
Pihjalaniemi	Taina	University of Oulu (Member of SYKE Advisory Board)
Pirkkala	Sami	Prime Minister's Office
Porvari	Marjukka	John Nurminen Foundation
Rajala	Mari	Centre for Economic Development, Transport and the Environment (Pirkanmaa) (Member of SYKE Advisory Board)
Rautavaara	Antti	Ministry of Agriculture and Forestry
Riipinen	Miira	Association of Finnish Municipalities (Member of SYKE Advisory Board)
Savonen	Sofia	Youth Agenda 2030
Schulman	Leif	Finnish Museum of Natural History, University of Helsinki
Suni	Tanja	Ministry of the Environment
Särkijärvi	Johanna	Ministry of Transport and Communications (Member of SYKE Advisory Board)
Tanninen	Timo	Metsähallitus
Tiainen	Ismo	Ministry of the Environment
Toppinen	Anne	HELSUS, University of Helsinki
Vahala	Riku	Aalto University
Verta	Olli-Matti	Ministry of Agriculture and Forestry
Vuori	Saku	Geological Survey of Finland
Ylä-Mononen	Leena	Ministry of the Environment

Appendix 5. Brief bios of the Evaluation Team

Hanne Bach (*Chair of the Evaluation Team*), Director at DCE-Danish Center for Environment and Energy, Aarhus University, since 2012, board member of PEER: Partnership for European Environmental Research and member of the board for the Environmental Network at the Danish Association of Engineers. Bach is the Manager of a framework contract with the Ministry of Environment and Food, Denmark. Previously, she has been the Head of a research group focusing on the links between the environment and society, including assessment of societal impacts on the natural system.

Maarten Hajer, Professor of Urban Futures at Utrecht University. He holds MA degrees from the Universiteit van Amsterdam (UvA) and a D.Phil. from the University of Oxford. From 2008 to 2015, he was the Director-General of PBL — the Netherlands Environmental Assessment Agency. In 2015, he started the Urban Futures Studio (UFS) at Utrecht University to explore new ways of linking university knowledge to public problem solving. Hajer is a member of the UN's International Resource Panel (IRP, hosted by UNEP). He also holds an Extra Ordinary Professorship at the School for Public Leadership, University of Stellenbosch, South Africa. Hajer is the author of seventeen authored or edited books and many articles and contributions to books, many of which are frequently cited.

Jakob Granit, PhD, Director-General of Swedish Agency for Marine and Water Management. Granit has since 2016 been the head of the Swedish Agency for Marine and Water Management (SwAM). SwAM is a Swedish national government agency with the overall responsibility of implementing freshwater-, ocean- and fisheries management affairs from source to sea. He has global experience from the World Bank and Sida, including policy and applied research experience from the Scientific Technical and Advisory Panel at the Global Environment Facility, the Stockholm Environment Institute (SEI) and the Stockholm International Water Management Institute (SIWI).

Jonas Liimatta, Director-General at the Centre for Economic Development, Transport and the Environment of Northern Ostrobothnia (ELY-Centre of Pohjois-Pohjanmaa). Liimatta has 20 years' experience in Chemical and Energy Industry in different positions. He is also working as the Director of the Environment and Natural resources responsibility area. The Northern Ostrobothnia ELY Centre is a regional state administration Centre. ELY supervises implementation of the law and promotes regional development via different kinds of development tasks, such as funding.

Raisa Mäkipää, Research professor of sustainable use of natural resources at the Natural Resources Institute Finland (Luke). Mäkipää has broad expertise in ecosystem modelling, carbon and nutrient cycling, and biodiversity. She leads the consortium 'Novel soil management practices - key for sustainable bioeconomy and climate change mitigation -SOMPA', which is funded by the Strategic Research Council. She has highly recognised merits resulting from her international and national activities, e.g. she is Vice-President of the International Boreal Forest Research Association (IBFRA), she has contributed as lead author to the IPCC Report and as a nominated expert to the UNFCCC review of the GHG inventories, and she is a member of the national IPCC working group. She has received an award certificate for her contribution to the Nobel Peace Prize, which was bestowed on the IPCC in 2007.



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