Forskningsrådet

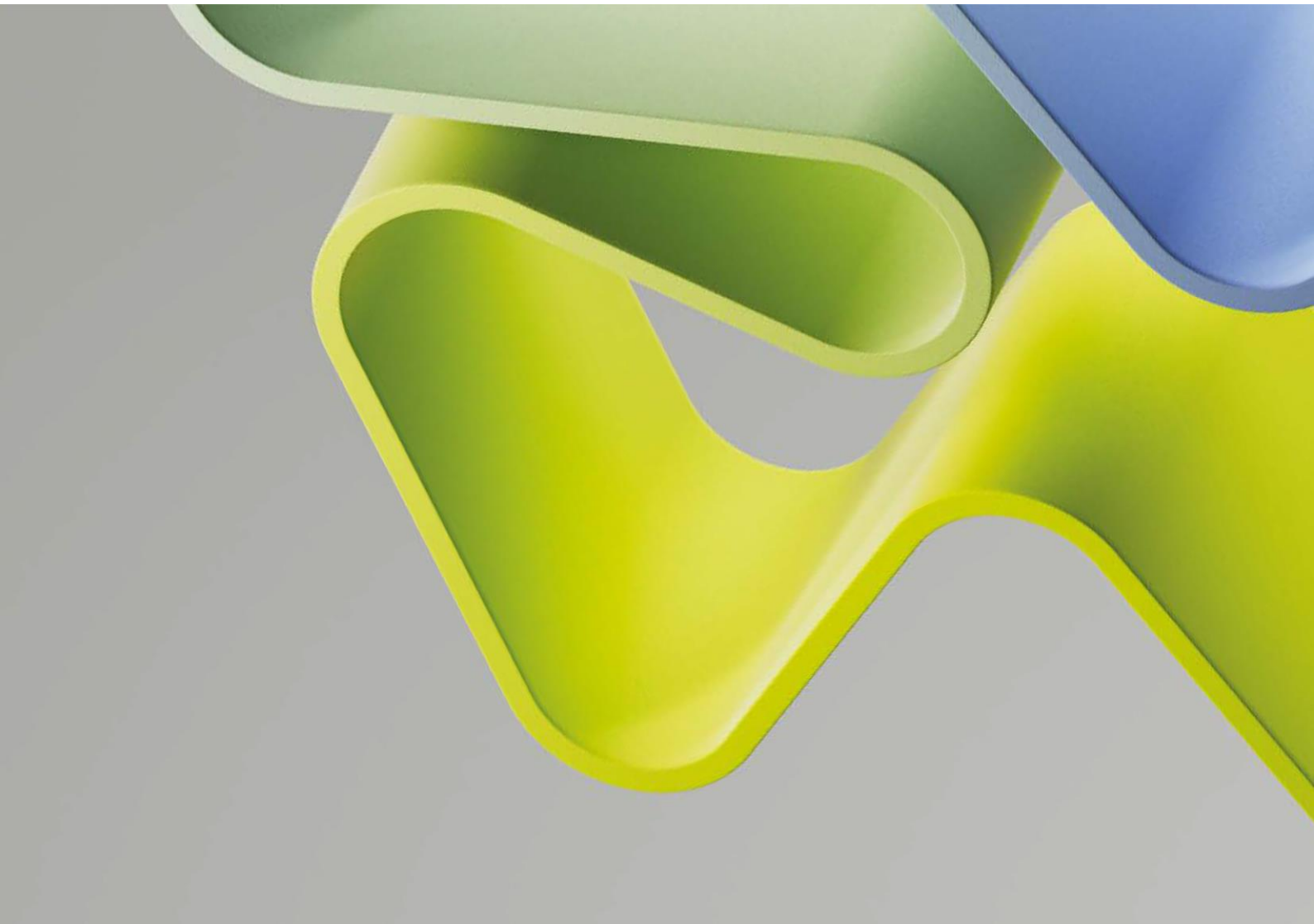
Evaluation of Life Sciences 2022-2024

Evaluation of medicine and health 2023-2024

Evaluation report

ADMIN UNIT: Division of Climate and Environmental Health
INSTITUTION: Norwegian Institute of Public Health

December 2024



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Statement from the Evaluation Committee for the Institute Sector

This report is from the Evaluation Committee for the Institute Sector which evaluated the following administrative units in the Evaluation of Medicine and Health 2023 - 2024:

- Centre for Fertility and Health, Norwegian Institute of Public Health
- Division of Climate and Environmental Health, Norwegian Institute of Public Health
- Division of Health Services, Norwegian Institute of Public Health
- Division of Infection Control, Norwegian Institute of Public Health
- Division of Mental and Physical Health, Norwegian institute of Public Health
- Health and Social Sciences Division, Norwegian Research Centre (NORCE)
- The National Institute of Occupational Health in Norway (STAMI)

The conclusions and recommendations in this report are based on information from the administrative units (self-assessment), digital meetings with representatives from the administrative units, bibliometric analysis and personnel statistics from the Nordic Institute for Studies of Innovation, Research, and Education (NIFU) and Statistics Norway (SSB), and selected data from Studiebarometeret (NOKUT). The digital interviews took place in Autumn 2024.

This report is the consensus view from the Evaluation Committee for the Institute Sector. All members of the committee have agreed with the assessments, conclusions and recommendations presented here.

The Evaluation Committee for the Institute Sector consisted of the following members:

Professor emerita Ingalill Rahm Hallberg (chair)
Lund University

Associate Professor Joachim Boldt
Albert Ludwig University of Freiburg

Professor Walter Bruchhausen
Bonn University

Professor Sarah Purdy
Bristol Medical School

Bregtje Kamphuis, Technopolis Group, was the committee secretary.

Oslo, December 2024

Profile of the administrative unit

At the Division of Climate and Environmental Health, research activities are largely based on a bottom-up process initiated by the individual researchers. However, top-down approaches are applied for larger and strategically important initiatives, coordinated by the Admin. unit's Management group through collaboration between the Division Director, Research Director, and Department Directors. The administrative unit's research groups have 77 staff members, 63% of whom are women. Researchers make up the largest category with 37 individuals, 54% being women, while 68% of the 19 laboratory engineers and 89% of the 9 PhDs/Postdocs are women. Although overall gender balance is considered healthy, women dominate the engineer and PhD/Postdoc roles, with one group consisting entirely of women.

The Division of Climate and Environmental Health is comprised of three research groups: Chemical Toxicology (KMKT), Department of Food Safety (KMMT) and Department of Air Quality and Noise (KMLS).

The administrative unit's strategy aligns with the Norwegian Institute of Public Health's goals, focusing on environmental health research to tackle public health challenges. Its work spans exposure science, toxicology, epidemiology, and risk assessment, focusing on air, water, food, and noise pollution. Renamed the Division for Climate and Environmental Health in 2021, the administrative unit now includes research on climate, sustainability, and health, with new initiatives like an environmental biobank and a Centre for Sustainable Diets. The administrative unit also explores the built environment, green spaces, and climate change impacts.

Among other things, the administrative unit contributes to its sector through its contribution towards the Norwegian long-term plan for research and higher education. This includes contributions to highly prioritised areas such as life sciences, interdisciplinary research from a one-health perspective, sustainable food systems, a green and just transition and international collaboration on global food safety. The long-term plan also highlights challenges in other areas, like vulnerable children and youth. The administrative unit is focusing on understanding their needs and supporting their upbringing and mental well-being, positioning itself as a vital knowledge producer for these ongoing efforts. Moreover, the administrative unit is involved in several international research and innovation projects, utilising knowledge and resources to tackle global health challenges. Due to reduced national funding from the Research Council of Norway, the unit has strategically focused on building strong research networks in the EU, improving its success in EU funding calls. Large research collaboration networks have been developed over time through physical visits, workshops, COST actions, Joint Actions, and ongoing project consortia.

Based on its self-assessment, in the future, the Division of Climate and Environmental Health might take advantage of the central Norwegian Institute of Public Health research support staff which provides administrative, economic, and legal support to larger research projects, as well as a library service with expertise in systematic literature search. However, a potential challenge is the decline in administrative support which has resulted in undermining their capacity to launch projects promptly and effectively, impeding progress in their research activities. Moreover, they also might take advantage of external opportunities, including the close proximity and collaboration with decisionmakers at Norwegian health and environmental authorities which provides a path for translation of science to policy and strengthen societal impacts and the high focus on climate and

environmental issues nationally and internationally, by both governmental institutions, private enterprises, and the public. This might result in better funding opportunities in the future.

Overall evaluation

Research in the three research groups evaluated is of highest quality and has had decisive impact on national, international and global oversight and regulation. This research is highly important for society and care should be taken that it can proceed. The expansion of research areas towards climate, sustainability and health is a considerable challenge. The first steps and new strategic goals described in the self-assessment connect meaningfully to existing research and appear to be good starting point to further develop these new research topics. However, the unit appears to be in a process of redefining its research identity, institutional standing, established research areas, and new opportunities. Efforts at various levels are necessary to successfully complete this transition.

The Committee highly endorses establishing a researcher school, as planned, to provide research related training and knowledge to researchers at all career stages. This platform could be developed further.

Recommendations

The committee recommends that efforts should be made, in a combined bottom-up and top-down process, to describe a broad overarching and unifying research identity of the unit and to delineate research group issues and areas. New research groups will have to be set up, if the research areas of inequality and, most importantly, climate, sustainability and health are to be successfully developed and integrated. Staff should be offered the opportunity, and should be willing to, choose a research group depending on their methodological and scientific expertise and research interest. All staff should have a clear picture of where bridges that the unit wants to explore between established and new research areas are, and which issues are supposed to stay separated. Developing the new research fields should not be to the detriment of the successful and highly important research in exposure science, toxicology, environmental epidemiology, and risk assessment. It should be evaluated and discussed with the institute whether an increase in funding for staff and/or resources for training of staff for the transition phase is needed.

There is potential to heighten the share of projects in which the unit takes the leading, coordinating role, especially regarding EU funded projects.

KPIs or benchmarks should be developed to enable evaluating the unit's sectorial and societal impact. The committee recommends that the administrative unit and the institute take a more active role to promote patient and public involvement and engagement (PPIE) and involvement of other relevant stakeholders at all stages of the research process to ensure societal relevance and of research results. The Researcher School could be further developed to provide new methodological knowledge, knowledge on patient and public participation, dual use research of concern, and FAIR principles. The committee recommends initiating a discussion at NIPH to evaluate whether assembling cross-unit responsibilities and services regarding all the units' research (FIU, FAS, Library Services, Researcher School) in institutional core facilities independent from specific units may be better suited to supply a level playing ground for all units.

1. Strategy, resources and organisation of research

1.1 Research strategy

The administrative unit's strategic goals for research and innovation are aligned with the overarching institutional strategies and scientific priorities of the Norwegian Institute of Public Health (NIPH). Within this framework, the unit aims to produce high quality research concerning the main public health challenges from environmental risk factors.

Research strategies at NIPH need to balance scientific and academic novelty and impact, on the one hand, and the need to address nationally important issues and sustain necessary competencies, on the other hand.

The research groups within the unit of Climate and Environmental Health are multidisciplinary teams with competence in toxicology, epidemiology, chemistry, exposure science, molecular biology, statistics, and social sciences. The competencies of each research group vary depending on their main research focus.

The current unit's three research groups were recently taken out the unit of Infection Control and brought together in the newly built unit of Climate and Environmental Health in 2021. The drop in publications and the drop in share of international co-authors from 2021 to 2022, as reported by NIFU, reflects the separation from Infection Control and creation of a new unit.

The unit's research activities cover the four main pillars of environmental health research: exposure science, toxicology, environmental epidemiology, and risk assessment. Building on past research, the unit focusses on adverse effects of environmental risk factors in food, water, air, and consumer products, as well as adverse effects of noise.

Recently, building stronger competence in social aspects to account for environmental health inequality has also been prioritised, activities within climate change and sustainability have been strengthened, and new research focus areas include built environment, green space and urban/residential areas. The unit has further developed an environmental biobank to monitor chemical exposure of the Norwegian population and launched an internally funded Centre for Sustainable Diets.

Closure of the animal facility and outphasing of in vivo toxicological research at NIPH initiated a fast transition to new approach methods (NAMs) for toxicological risk assessment, including in vitro and in silico-based methodology.

Research results are used to inform national guidelines and policy development in the field of environmental health. Competencies in burden of disease and cost estimation of environmental stressors have been built up in collaboration with the NIPH Centre for Disease Burden to strengthen societal impact and to better inform policy makers on societal costs and potential benefits of measures to reduce harmful exposures.

The practical follow-up of the strategic priorities is conducted through documents like administrative plan, development plans and project database, and through the daily practices of leaders and researchers within the institute.

The research strategy, throughout the evaluation period, has been affected by several organisational changes throughout the evaluation period. In 2015, the unit merged with the unit of Infectious Disease Control. In 2020 a new development plan was made for environment and health, and the unit was re-established as the separate unit for Climate and Environmental Health (September 1st, 2021) with a stronger research focus on climate, sustainability and health.

Research activities are largely based on external funding. Internal (basic) funding of research is almost exclusively provided to cover person costs (salary) in research projects competitively acquired through external calls. This ensures that basic funding is only spent on high-quality, peer-reviewed projects.

Prior to 2015 the unit received the majority of external research funding from the Research Council of Norway (RCN). Due the RCN terminating its environment and health programme in 2015, strongly prioritising intervention research over causal mechanisms for risk factor-disease associations, the unit has worked strategically to secure funding from EU calls, including building stronger networks with Central European research institutes. Today, the unit receives the majority of external research funding from EU calls (H2020 and Horizon) and has the highest success-rate in EU calls at the NIPH. Strategic decisions on what EU calls to prioritise are coordinated by the unit's management group (Research Director and Department Directors). The Research Director coordinates activities across the different units at the institute and contributes to development of overarching research strategies at institute level. The Research Director also collaborates closely with Research Administration management at NIPH to, e.g., identify relevant calls.

The committee's evaluation

The committee recognises, as a common characteristic of all NIPH units, the need to balance time and efforts related to research strategies, on the one hand, and immediate and pressing political and societal issues and tasks set by the allocation letter on the other hand.

The committee notes that the "Development plan for the Division of Infection Control and Environmental Health", linked in the self-assessment, covers the period 2019-2024 and refers to a unit prior to the creation of the unit of Climate and Environmental Health. The strategic goals and scientific priorities mentioned in this document cannot be meaningfully applied to the current unit. Further and more up-to-date information on strategic goals are provided in the self-assessment. The committee's evaluations and recommendations regarding research strategy refer to the information provided.

The committee notes that research groups are multidisciplinary teams and that disciplines involved vary according to the groups' respective research focus areas. The committee is of the opinion that inter- and multidisciplinary is a necessary requisite of public health research and comments on this issue in the following recommendations, where appropriate, as requested in the ToR.

The unit's research focus areas on exposure science, toxicology, environmental epidemiology, and risk assessment can be expected and make sense for an environmental health unit. Including social science competence to account for environmental health related inequalities is a convincing expansion of the research questions in line with the NIPH overarching research aims.

The committee regards the expansion of research areas towards climate, sustainability and health to be a considerable challenge. The first steps and new strategic goals described in the self-assessment connect meaningfully to existing research and appear to be good starting point to further develop these new research topics.

As it appears to the Committee, the unit is in a process of redefining its research identity, institutional standing, established research areas, and new opportunities. Efforts at various levels are necessary to successfully complete this transition. In the following, the Committee will make recommendations on this issue, where appropriate.

The committee notes a lack of epidemiology and public health intervention studies.

The committee's recommendations

- Efforts should be made, in a combined bottom-up and top-down process, to describe a broad overarching and unifying research identity of the unit and to delineate research group issues and areas. New research groups will have to be set up, if the research areas of inequality and, most importantly, climate, sustainability and health are to be successfully developed and integrated.
- Staff should be offered the opportunity, and should be willing to, choose a research group depending on their methodological and scientific expertise and research interest. Existing fruitful collaborations should be taken account of.
- All staff should have a clear picture of where bridges that the unit wants to explore between established and new research areas are, and which issues are supposed to stay separated. These decisions should be transparently communicated.
- Care should be taken to ensure that the division's methodological competence develops in accordance with the thematic expansion of the research topics towards inequality and climate, sustainability and health. This includes social science expertise and ethical and legal studies.
- Developing the new research fields should not be to the detriment of the successful and highly important research in exposure science, toxicology, environmental epidemiology, and risk assessment. It should be evaluated and discussed with the institute whether an increase in funding for staff and/or resources for training of staff for the transition phase is needed.
- Exploring whether epidemiology and public health intervention studies can contribute to the unit's research and impact goals, and developing the necessary methodological skills.

1.2 Organisation of research

Research activities are largely based on a bottom-up process initiated by the individual researchers. This ensures that the diverse perspectives and expertise of a highly qualified staff are incorporated in the development of research activities, ensures valuable input to the unit's research strategy, and strengthens commitment to ongoing research activities. All project proposals and research initiatives need approval by the Department Directors (research group leaders). Top-down approaches are applied for larger and strategically important initiatives.

The Research Director has the responsibility for the overarching research strategy, and coordination of research activities across the different research groups and across the different units. The Research Director heads a Forum for Research, Innovation and External Collaboration (FIE) at the unit. FIE provides a forum to share research ideas and information on new calls. The Research Director represents the unit at the NIPH Research and Innovation Committee (FIU).

The unit has two full positions for project support and research administration. Further support to research administration is provided by the Department for Research Administration Management (FAS). FAS supports research administrative tasks and infrastructure across NIPH. FAS plays a strategic role in advising on relevant grants for research groups. It also guides research groups through application writing and evaluates the efforts.

Master and PhD students are recruited to ongoing research projects. All new team members are trained in relevant activities by senior staff. Knowledge exchange is provided through regular lab and project meetings and internal seminars. Outreach activities are initiated by researchers and project coordinators, and for strategically important initiatives, through the management group.

The main purposes of the unit are providing knowledge on environmental health, including risk factors and mitigation measures, to Norwegian government and health authorities, and engaging in high-quality, innovative research. Research activities not only inform policy advice, but the demand for advice guides strategic prioritisation of research needs. The unit has established collaborations with policymakers and other stakeholders to understand the evolving priorities in the environmental health research field. By encouraging interdisciplinary collaboration, the unit is able to address complex environmental health challenges comprehensively.

The unit also collaborates with the University of Oslo and other academic institutions, hosts Master and PhD students, and researchers at the unit also lecture in toxicology, biomonitoring, and epidemiology, at the University of Oslo.

The three research groups evaluated comprise a total of 77 staff members, where 63% in total are women. Of all 37 researchers (scientist / senior scientist), 54% are women. The unit has in total 19 laboratory engineer positions, where 68% are women, and 9 PhDs / Post Docs in temporary positions, of which 89% are women. Of the 3 group leaders (Department Directors), 2 are women. The Research Director is male. Research promotions are part of the NIPH personnel policy. One key feature of NIPH is research funding through external grants. When applying for grants early-career researchers are always included to support their professional development. Senior staff supervises young researchers. NIPH has a plan for professional career development for postdocs.

A researcher school is established at NIPH, providing training for skills development and career development for researchers at all stages of their careers. Modules include literature search, open research, most significant public health challenges nationally and globally, priorities in the institute's strategy and development plans, etc.

Distribution of research time between staff

There is no specific distribution of research time or leave. However, for practical purposes an average of 50% research time can be assumed for permanently employed researcher positions, and 90% research time for lab engineers. PhD students, postdocs, and project employed researchers often have close to 100% research time.

Research mobility options

NIPH is partner in several research projects with international collaboration that allow for mobility. However, due to obligatory advisory tasks of the permanently employed researchers, research mobility is mostly relevant for younger researchers fully employed in research projects.

The committee’s evaluation

The Committee highly endorses establishing a researcher school, as planned, to supply research related training and knowledge to researchers at all career stages. The structures at NIPH and the unit to assist young researchers appear helpful and important.

The committee’s recommendations

The committee recommends:

- Initiating a discussion at NIPH to evaluate whether assembling cross-unit responsibilities and services regarding all the units' research (FIU, FAS, Library Services, Researcher School) in institutional core facilities independent from specific units may be better suited to supply a level playing ground for all units, allow efficient access of all units to these resources, and encourage open communication and decision-making on research strategies and research allocation than the existing organisational structure.
- Use of the Researcher School also as a platform for disseminating new methodological knowledge and tools, such as machine learning, register based RCTs, complex interventions etc.
- Establishing lecture series or similar formats or inviting guest researchers to profit from external knowledge on new research methods and infrastructures (if such formats are not existing, yet).

1.3 Research funding

There are two main funding sources for the administrative unit's activities: from the Ministry of Health and Care Services and external funding from grant applications.

As part of a government agency, the administrative unit has a range of major tasks funded through core allocation from the Norwegian Ministry of Health and Care Services.

The total basic funding from the Ministry of Health and Care Services is 35 MNOK for the period 2018-2022. The unit also receives earmarked funds from the Ministry of Health and Care Services.

In the same period the total external funding for the administrative unit amounts to 30 MNOK. The unit expects to obtain additional external funding in the years to come.

The share of the unit's budget dedicated to research is approximately 50 percent.

The committee's evaluation

Approximately 50% research budget is externally funded. This share is remarkable.

The committee's recommendations

- Most external funding comes from EU projects. A diversification of funding sources is recommended, if not already in place (self-assessment table 3, p. 12, lists "other international grants" without further specification. Table 4b, p. 19ff, refers almost exclusively to EU projects).
- There is potential to heighten the share of projects in which the unit takes the leading, coordinating role, especially regarding EU funded projects. If, from the point of view of the unit, the administrative burden is limiting factor, it should be discussed with the institute how PIs can be better supported by NIPH administrative support.

1.4 Use of infrastructures

"The Norwegian Barcode of Life" (NorBOL) is a national network of research institutions for collaboration on DNA barcoding in Norway and a regional node in the International Barcode of Life Project (iBOL). NIPH was represented in NorBOL council.

NIPH is one of 12 partners in "Biobank Norway 4" (BN4). BN4 further develops of a large-scale national research infrastructure for clinical and population-based biobanks. Biobank

Norge provides efficient and secure linkage and analysis across registry data, large omics data, data from population surveys and other health and personal data.

NIPH's role in the "Health Registries For Research" was to prepare national registries for research. This involved improving the documentation of data content and quality for the main NIPH central health registries and making registry metadata available for researchers online.

NIPH does not participate in any of the international infrastructures asked about in the self-assessment (CERN, EMBL/EMBC, ESA, ESRF, IARC or OECD Halden).

NIPH participates in BBMRI-Eric through its partnership in Biobank Norway led by NTNU. BBMRI.no is supposed to facilitate the use of biobanks as a basis for excellent research and innovation. BBMRI.no shall provide internationally competitive biobanking services for basic, clinical, and epidemiological medical research.

The unit also participates in the preparatory phase project EIRENE RI - Research Infrastructure for EnvIRonmental Exposure assessmeNt in Europe (EIRENE PPP). The intention is that the biomonitoring platform at NIPH will become part of the planned EIRENE RI project which is prioritised in the 2021 Update of the ESFRI Roadmap. The project will fill a gap in the European infrastructural landscape and pioneer the first EU infrastructure on the human exposome (environmental determinants of health).

Researchers at NIPH benefit from access to a diverse array of national and international research infrastructures. The integration of these infrastructures creates a cohesive ecosystem for NIPH researchers and positions NIPH at the forefront of impactful public health and epidemiological research.

The most important e-infrastructures are: TSD (Services for Sensitive Data), HUNT-Cloud (linked to the HUNT Biobank, HUNT-Cloud serves as a national e-infrastructure for cloud computing), Biobanks (national biobanks serve as crucial repositories of biological specimens and associated data), SAFE ("Sikker Adgang til Forskningsdata og E-infrastruktur", SAFE offers secure access to a federated e-infrastructure, facilitating efficient and secure data sharing among research institutions), Datashield (a digital infrastructure facilitating privacy-preserving analyses across multiple datasets),

At NIPH, the data management plans (DMPs) follow open research data standards and protocols in compliance with European policies and Open Research Europe. This includes early and open sharing of project protocols and results, measures to ensure reproducibility, and open access to project outputs, participation in open peer-review, and generating open science by involving all relevant knowledge actors including the public, civil society and end-users. NIPH's projects are 'as open as possible, as closed as necessary', and make an effort to share all data and methods developed openly.

The committee's evaluation

The committee considers the use of infrastructures to be appropriate. FAIR principles ensure that research is "as open as possible". In some cases, though, research and research results should be "as closed as necessary". Dual Research of Concern (DURC) is such a context and should be addressed by NIPH and the unit. The committee notes that the unit refers to difficulties regarding timely access to data for research purposes, also from within the organisation.

The committee's recommendations

The committee recommends:

- Wider dissemination of knowledge of infrastructures and acquaintance with FAIR principles among all researchers at the unit and at the Institute, for example via teaching modules at the researcher school.
- Initiate a discussion at the Institute to assess whether implementing DURC guidelines and a DURC committee at the Institute would be appropriate, Following, for example, the Dutch Rijksinstituut voor Volksgezondheid en Milieu and the German Robert-Koch-Institut.
- Dissemination of knowledge about DURC resources and guidelines among all researchers at the unit and the Institute, for example via the Researcher School.
- Encouragement of efforts at the Institute and at the national political level to implement infrastructures and procedures that ensure efficient access to health data for research in accordance with GDPR requirements and the Norwegian Personal Data Act (possibly in coordination with the European Health Data Space initiative).

1.5 Collaboration

Collaboration is a key success factor to reach the goals to produce high-quality research and create societal impact. The research groups at the unit have expanded its national and international research network and collaborations considerably in recent years. This has been the result of a planned strategy. The unit is constantly searching for and approaching potential new partners that could complement and/or strengthen research activities. Collaborations are operationalised through various activities, including research projects, data collection, and participation in health initiatives.

At national level, the unit has built strong collaborations with universities in the Oslo region to secure education and future recruitment to the environmental health field, especially in human toxicology, and to gain access to complementary expertise and methodology.

Governmental agencies, decision makers, and NGOs have also been included in national research collaborations to increase societal impact.

The unit has work strategically to build strong international research networks, focusing specifically on the EU and EU calls. Important actors in the environmental health field and potential partner institutions have been identified and actively approached. Large scientific networks for research collaboration have been built gradually through visits and workshops, COST actions, Joint Actions, and ongoing project consortia. The unit has participated in 13 EU-funded projects during evaluation period from 2012-2020, including Research and Innovation Actions with 10-20 partners and large co-funded actions such as PARC which currently is approaching 200 partner institutions. The unit also collaborates with partners outside Europe, including the USA and China.

The committee’s evaluation

The unit has an impressive number of collaboration partners and ongoing collaborations, especially within EU projects.

The committee’s recommendation

The committee recommends:

- Establishing cooperation with international partners beyond cooperation in research projects, for example in the form of researcher exchange programs or internships / job shadowing at public health sister institutions in other countries to facilitate

mutual learning, get to know and implement best research practice, and for benchmarking.

1.6 Research staff

Research staff at the unit is characterised by a diverse profile in terms of both position and gender. The three research groups evaluated encompass a total of 77 staff members by the end of 2022. 63% in total are women. Researchers (scientist / senior scientist) comprise the largest category with 37 individuals, where 54% are women. The unit has in total 19 laboratory engineer positions, where 68% are women. There are 9 PhDs / postdocs in temporary positions, of which 89% are women. Of the 3 group leaders (Department Directors) 2 are women, while the Research Director is male.

The committee's evaluation

The committee welcomes the overall balanced gender ratio.

The committee's recommendations

The committee recommends:

- If climate, sustainability and health are to be successfully established as new focus areas of research, care should be taken to ensure that relevant methodological expertise and disciplinary backgrounds are represented among research staff.
- Encouragement of researchers at the administrative unit and the institute to make use of guest researcher programs at international research institutions (in addition to visiting project partners in third-party funded research projects).

1.7 Open Science

NIPH embraces open access to publications, aligning with governmental mandates and cOAlition S requirements. Researchers are encouraged to publish in reputable open-access journals, and the institution actively participates in agreements to cover costs for open access publications. On the NIPH intranet, three paths to open publishing are described: Gold Open Access (publishing in reputable open-access journals), Hybrid Open Access (discouraged due to potential double payments), Green Open Access (traditional publishing in subscription journals with subsequent archiving in an open knowledge archive).

NIPH does not provide a definitive recommendation on preprints but highlights the importance of following journal guidelines.

Most important contributions and impact towards the different open science areas

The main research activities of the unit are externally funded. Open and FAIR data is a requirement in all EU-funded projects which currently constitute the majority of the unit's research portfolio. Therefore, the administrative unit is legally committed to make almost all research data produced open and FAIR. This includes open scientific publishing, open and FAIR databases, open software, codes, toolboxes, etc.

User involvement and citizen science is also more frequently required in research calls and have therefore increasingly been included in research applications. This is expected to increase further in the coming years.

The unit also emphasises effective dissemination of research findings to environment and health authorities, user groups, and the public.

Policy regarding ownership of research data, data management, and confidentiality

In collaborative projects, each party has ownership rights to the results created by that party. At NIPH, data management plans (DMPs) follow open research data standards and protocols in compliance with European policies and Open Research Europe. NIPH's projects are 'as open as possible, as closed as necessary', and make an effort to share all data and methods developed openly.

The committee's evaluation

The committee welcomes the high rate of OA publications, as well as that researchers are encouraged to publish in reputable open-access journals, and that the institute actively participates in agreements to cover costs for open access publications. The committee welcomes the fact that the unit supports the research groups' efforts to expand collaborations with user groups and other partners outside the research sectors.

The committee's recommendations

The committee recommends:

- Developing guidelines and recommendations, at the level of administrative unit and institute, for no fee open access publishing (e.g., a whitelist for no fee journals / platforms.) No fee OA can help to reduce the dependency of the public research system on commercial publishers.
- Initiating a discussion at the institute whether it is feasible to build a publication platform for peer-reviewed reports / public health papers, possibly in cooperation with other public health institutes, to provide a world-wide network and publication platform.
- Taking a more active role to promote patient and public involvement and engagement (PPIE) and involvement of other relevant stakeholders at all stages of the research process (e.g., the value, different forms, and best practice examples of PPIE could be communicated to researchers via the researcher school).

2. Research production, quality and integrity

The research conducted at the administrative unit addresses the impact of a broad range of environmental factors on human health and well-being, to inform policymaking, and promotes sustainable societal development and healthy living environments. The core research activities centre around chemical and particulate pollutants from food, water, air, and consumer products including tobacco and other nicotine products. The research activities also cover noise, built environment and green space, climate change, and pest control, and incorporates aspects of genetic susceptibility and socioeconomic factors (health inequity) in environmental health.

The biomonitoring platform at the administrative unit is among the leading in its field in Europe, and provides state-of-the-art analysis of chemical pollutants in blood, urine and mothers milk for a range of European institutions and projects. The administrative unit's work on Per- and Polyfluoroalkyl Substances (PFAS) has contributed towards a more accurate understanding of exposure and health effects, and stricter regulations by the European Food Safety Authorities (EFSA) and the Stockholm Convention. The chemical toxicology and risk assessment research underpins the administrative unit's work for the Norwegian Environment Agency and the European Chemical Agency (ECHA/REACH). Research activities have focused on development of New Approach Methods (NAMs) and Integrated Approaches for testing and Assessment (IATA) in line with the transition of modern toxicology and the demand to reduce animal testing. In air pollution research at the administrative unit has focused on the contribution of different emissions sources and chemical components of particulate matter, to advance regulation of air quality. Research on traffic noise complements studies on traffic pollution.

In 2020, with the creation of the Division of Climate and Environmental Health, NIPH researchers already working on climate and health issues were incorporated in the new unit. New research areas include effects of heat waves, combined effects of climate change and air pollution, and climate adaptation, incorporating a global perspective.

The Norwegian Institute of Public Health has an Ethical Committee that is mandated to advise the leadership of the administrative units and the institute's leadership on ethical issues, including matters concerning research integrity. The institute is also one of 12 institutions that have established a Joint Committee on Research Integrity. The Joint Committee is mandated to handle cases of possible scientific misconduct on the request of its member institutions.

2.1 Research quality and integrity

This part includes one overall evaluation of each research group that the administrative unit has registered for the evaluation. The overall assessment of the research group has been written by one of the 18 expert panels that have evaluated the registered research groups in EVALMEDHELSE. The expert panels are solely behind the evaluation of the research group(s). The evaluation committee is not responsible for the assessment of the research group(s).

Chemical Toxicology (KMKT)

The Chemical Toxicology research group is well-structured and has effectively secured external research funding from various sources. The group has access to a range of advanced analytical platforms and core facilities. The group's dual focus, on research and

advisory services, aligns closely with institutional strategies. The organisational environment is adequate to promote high-quality research, but the group's contribution to education is limited. The group demonstrates a high level of scientific quality, as evidenced by its diverse project portfolio and publications in high-impact journals. All senior PIs have good publication track records. The group demonstrates strong international cooperation and interdisciplinary collaboration. The group serves as a national competence centre for human toxicology. Finally, the group has strong emphasis on translating scientific findings into practical advice for policymakers and the broader public. Their involvement in formulating national chemical risk strategies and nuclear incident preparedness underscores their vital role in public health policy. User involvement is somewhat limited.

Department of Air Quality and Noise (KMLS)

The overall assessment of the Department of Air Quality and Noise by the panel is that it is internationally excellent. The group has set clear research goals, i.e. conduct research and systematic literature reviews, recognise knowledge gaps, work closely with the ministry, directorates, and municipalities, and support policy implementation. To achieve these goals, the group have ambitious but realistic benchmarks. In addition, the research group has a long history of lecturing at the University of Oslo (UiO), exemplified by the fact that some of the researchers have had part time professor positions at UiO. Despite several organisational changes at the department, resulting in reduced personnel and a strategic decision to target higher levels of external funding for permanent staff, the group is still relatively large and very active. However, the possibility to attract external funding has over time decreased. This is a result of projects within the field of environmental health, where the group is operating, often has fallen between separate funding streams in Norway. A consequence of this may be a small number of PhD students and postdocs. It is important to take this risk seriously. The group has as a part of the research institution excellent opportunities to take advantage of the good infrastructure, which in the long run continue to make the group an attractive partner in larger international research collaborations. In this context it is important that the group identify researchers with deep knowledge in areas which will strengthen the possibility to use the infrastructures in the most effective way. Examples of areas are within bioinformatics and statistics.

Department of Food Safety (KMMT)

The panel has evaluated the Department of Food Safety as outstanding for supporting the production of excellent research, and internationally excellent for their quality of the research. The group’s contribution to economic and societal impact is considerable, with considerable involvement of societal partners in the research process. The Department is very clear on their main goals. They have formulated clear objectives and strategies on how to achieve their main goals, and set a benchmark at the appropriate level, ambitious and achievable, but lacking metrics-based expectations. The Department has a strong national as well as international research reputation and track record, with an impressive list of past and current grants, and with significant funding coming to the Institute. Many grants and collaborations are substantial and have led to high impact publications. There has been stable core funding in last 5 years, and this funding has been doubled through RCN funding, international funding and other income (chemical analysis). Especially international income has seen growth in past years, indicating the international standing of the Department. However, in none of the international grants cited they are leading, which offers scope for further opportunities to become internationally leading. By its nature, the Department has substantial societal impact through education, analytical evidence, engagement in chemical preparedness for accidents/incidents, involvement in formal risk

assessments and enhancing the population's knowledge on pollution, diet and health. A clear example of this impact is the development of tolerable weekly intakes for PFAS "forever chemicals" in food, EU food and drinking water legal limits for these chemicals, and EU bans on some PFAS. Several researchers in the Department are/have been members of national/international risk assessment bodies i.e. The Norwegian Scientific Committee for Food and Environment (VKM) and the European Food Safety Authority (EFSA).

3. Diversity and equality

The goal of NIPH's Gender Equality Action Plan is to facilitate gender equality and prevent discrimination at the NIPH. This plan specifically focuses on promoting gender equality and preventing discrimination and harassment based on gender. A zero-tolerance policy for bullying and harassment applies to all activities at NIPH, including research projects involving national and international partners and individuals with other affiliations than the NIPH. The plan will be reviewed by the Institute's Management Group every second year and will be communicated to employees and managers after each review.

The committee's evaluation

The committee welcomes the fact that NIPH provides a regularly updated and communicated Gender Equality Action Plan.

The committee's recommendations

The committee recommends:

- Initiating a discussion at NIPH to amend the Action Plan regarding ethnic discrimination.
- Establishing / appointing a point of contact / contact person for gender related and/or ethnic discrimination.

4. Relevance to institutional and sectorial purposes

Functioning as an administrative institution under the Ministry of Health and Care Services, the principal role of the NIPH is to cultivate a research platform for informing public policy decisions in the expansive field of public health. This includes generating and facilitating high-quality research that substantiates NIPH's overarching societal mission and fulfilling obligations outlined in annual allocation letters. NIPH also pinpoints knowledge gaps regarding public health challenges and contributes actively to the production of essential knowledge to close these gaps.

The research areas of the administrative unit are part of this overarching mission. Importantly, climate and environmental health issues are at the intersection of both environment issues and health issues, governed by two Ministries, the Ministry of Health and Care Services and the Ministry of Climate and Environment. The administrative unit therefore provides services for both ministries, and work closely with the Norwegian Environment Authorities on several issues. In relation to air pollution issues, traffic emission is a key issue governed by The Ministry of Transport. The administrative unit has a long lasting, formal collaboration with agencies under all three sectors.

In line with the social mission of the NIPH, the administrative unit produces research-based knowledge that is exploited by the government, central health authorities, health trusts, counties, the specialist health services and municipal health and care services. This contributes to innovation in the public sector, including administrative process innovations, technological process innovations, product and service innovations, governance innovations and conceptual innovations. A key mode of contributing to innovation is through advice, decision support and evidence synthesis.

The social mission of the NIPH and the administrative unit is to contribute to research-based innovation. Both the possibility to advance the scientific field by improved methodologies and the opportunity to see the direct impact of their work on public health and well-being are powerful motivators for the research staff. The interdisciplinary environment and expertise within the unit and across the institute provide a stimulating setting that encourages creative thinking and problem-solving. Working with user groups and other sectors adds to staff motivation.

As the social mission of the NIPH and the administrative unit is to contribute to research-based innovation, all support to produce research-based knowledge provided at the administrative level is in practice support for innovation.

External funding sources are the main financial source for innovation efforts. Another structural basis for innovation is the internal centre model at NIPH. The centres have to demonstrate innovative approaches to main public health challenges to secure support from the administrative unit, through user involvement, cross-sectoral approaches to specified research areas, or other innovative strategies.

Developing strong and long-term collaborations and partnerships contribute to being innovative.

The committee's evaluation

The committee is convinced that the administrative unit's research is in line with the institute's tasks and sectorial purposes and that the administrative unit and the institute can effectively identify knowledge gaps.

The committee´s recommendations

The committee recommends:

- Including citizens, patients and other relevant stakeholders in the research process at all stages is an important measure to safeguard relevance and uptake of research results. More efforts should be made to implement these measures into research projects (cf. 1.7). These measures could be especially appropriate for climate and health related research areas.

4.1 Research institutes

The unit’s comprehensive approach to knowledge production drives innovative approaches to studying the impact of environmental risk factors from conception, throughout the life course, and across generations. By comprehensively adopting the exposome approach in several aspects of research, the administrative unit has increasingly applied a holistic view to understand the causes and consequences of various environmental health-related issues, incorporating multiple exposures and other risk factors such as socio-economic status, lifestyle, and genetic predispositions.

Providing the local and national government, the health sector, and the public with accessible tools to shape policy- and decision making contributes to transforming societal approach to public health. As pollution and climate effects is the core research focus of the unit, the outputs contribute directly towards the UN Sustainability goals.

Environmental pollution and climate change knows no borders and needs to be handled at international level. EU has become particularly important for international regulation of pollution and climate change, and much of the unit’s research activities aim in to support EU agencies, such EFSA, ECHA, and EEA, and EU-initiatives such as the Zero-Pollution Action Plan, the Chemical Strategy for Sustainability, and the European Green Deal.

The unit also has a strong focus on providing research that supports Norwegian health and environment authorities, the health system, and the public.

The committee's evaluation and recommendation

The committee notes that the information provided here (in 4.1) is in line with the information under section 4, above. The committee has no further comments and refers to the evaluation and recommendations to section 4.

5. Relevance to society

The long-term plan for research and higher education 2023–2032 outlines priorities that are in line with the NIPH main strategy and the administrative unit's development plan: high quality research related to main public health challenges, better use of health data, and more value added from investment in research.

The administrative unit's core research focus on climate and environmental health issues aligns directly with the long-term plan's overarching aim of "environmental, social and economic sustainability" and the aim of "high quality and accessibility in research and higher education". The unit's cooperation in EU projects further aligns with the aim of securing Norwegian participation in EU's knowledge investments for a green transition, as stated under the overarching aim to "strengthen competitiveness and innovation capacity".

The unit's research supports UN Sustainable Development Goals, particularly those related to well-being, health, reduced inequality, clean energy, sustainable cities and communities, responsible consumption and production, and climate action.

Comments on impact case 1: New Approach Methodologies for use in the hazard identification and characterisation of chemicals – a case study on Developmental Neurotoxicity

The case describes a sustained and successful research effort to develop human neural stem cell-based methods to study effects of environmental chemicals on neurodevelopmental processes vital for healthy brain development. A variety of projects, funded by different agencies, have contributed to the research. The research closes important health related knowledge and potentially also policy gaps: Information on the developmental neurotoxic potential of many chemicals is lacking and systematic testing for developmental neurotoxicity is not mandatory in the EU for pesticides, biocides, pharmaceuticals, or industrial chemicals. In addition, using animals as model organisms for human development is of limited value, and the EU parliament demands to reduce the use of experimental animals. So far, there is no formally accepted alternative to in vivo animal studies for the identification of the neurotoxic potential of chemicals for regulatory purposes. The research has rendered current developmental neurotoxicity in vitro batteries more comprehensive. Research results have been published in high-level international peer-reviewed journals. The research has gained OECD support and is still ongoing to further develop the test battery to allow its use in regulatory processes. The case shows that sustained long-term research efforts are indispensable for important advances in public health and can address multiple scientific, regulatory, and societal goals at once.

Comments on impact case 2: Improved knowledge of health effects of low levels of air pollution and its contribution to guidelines and regulations

The case describes a long-term research focus that comprised multiple third-party funded projects (e.g., EU and RCN funded projects). The research led to a better understanding of the impact of air pollution, especially low levels of air pollution, on health. The research combined epidemiology and experimental research. It included large-scale epidemiological cohort studies, linkage and analysis of large amounts of registry data, and research on mechanisms of different air pollutants, using cell models, animal and clinical studies. Research results led to changed air quality recommendations both nationally and

internationally (WHO, EU, Norway). Research results were published in many papers in high quality and high impact peer-reviewed journals. This case is an example of the positive impact of long-term research efforts sustained by various funding schemes and projects. In addition, it shows the importance of multidisciplinary expertise to adequately address public health knowledge gaps. Amending this research with stakeholder involvement and social science research could help to raise public awareness and address issues of social inequality and injustice.

Comments to impact case 3: PFAS – from research to regulation

The unit's research on PFAS described in this case started 15 years ago. It comprises identification of PFAS sources, research on affected groups, and analysis of health effects. Prior to the research, not much was known on PFAS human exposure sources and effects on human health. The research identified food and house dust as sources. Methods used included questionnaire data and measurement of blood levels. The research also for the first time provided data on PFAS in pregnant women and children. Research results led to regulation in 2021 and 2022 by the European Commission to reduce exposure in food and water, a European ban for use of long-chain PFCAs, PFOA and global restrictions on PFOA and PFHxS in the Stockholm Convention. The research is highly recognised in the research community, results were published in high quality and high impact journals. Several researchers at the unit involved in this research as PhDs later became senior scientists at the institute. The case highlights the importance of sustained efforts to identify and analyse potentially harmful chemicals present in the environment and their health effects. It also shows how this kind of research can successfully influence regulation. Finally, it shows that allowing researchers at a research institution to follow a long-term research area and research interest is an important factor in bringing this research to success. As in the case of air pollution, amending this research with stakeholder involvement and social science research could help to raise public awareness and address issues of social inequality and injustice.

Appendices

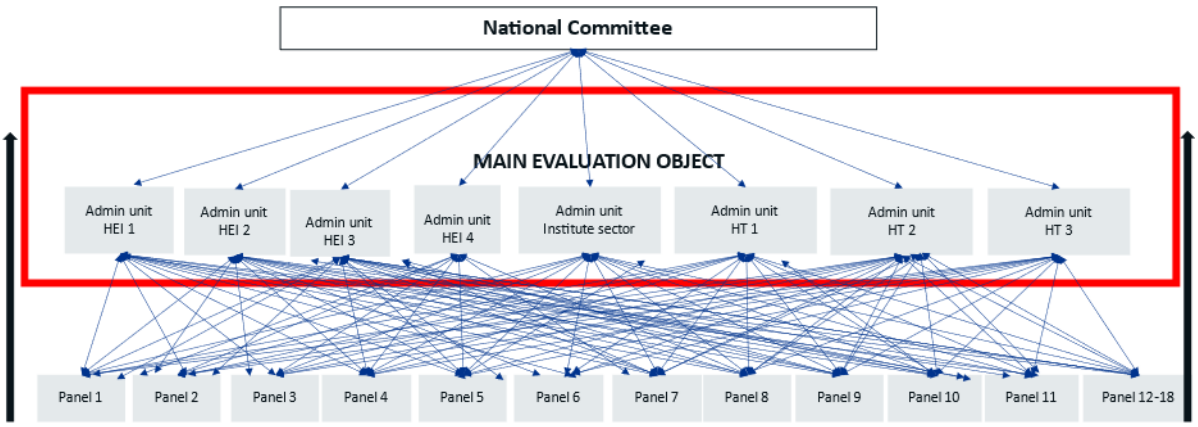
Evaluation of Medicine and health 2023-2024

By evaluating Norwegian research and higher education we aim to enhance the quality, relevance, and efficiency. In accordance with the statutes of the Research Council of Norway (RCN), the RCN evaluates Norwegian professional environments to create a solid and up-to-date knowledge base about Norwegian research and higher education in an international perspective.

The evaluation of life sciences is conducted in 2022-2024. The evaluation of medicine takes place in 2023-2024. The evaluation of biosciences was carried out in 2022-2023. The primary aim of the evaluation of life sciences is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), the institute sector and the health trusts. The evaluation shall result in recommendations to the institutions, the RCN and the ministries.

Evaluation of medicine and health (EVALMEDHELSE) 2023-2024
The evaluation of medicine and health includes sixty-eight administrative units (e.g., faculty, department, institution, center, division) which are assessed by evaluation committees according to sectorial affiliation and other relevant similarities between the units. The administrative units enrolled their research groups (315) to eighteen expert panels organised by research subjects or themes and assessed across institutions and sectors.

Organisation of evaluation of medicine and health 2023-2024



The institutions have been allowed to adapt the evaluation mandate (Terms of Reference) to their own strategic goals. This is to ensure that the results of the evaluation will be useful for the institution's own strategic development. The administrative unit together with the research group(s) selects an appropriate benchmark for each of the research group(s).

The Research Council of Norway has commissioned an external evaluation secretariat at Technopolis Group for the implementation of the evaluation process.

Each institution/administrative unit is responsible for following up the recommendations that apply to their own institution/administrative unit. The Research Council will use the results from the evaluation in the development of funding instruments and as a basis for advice to the Government.

The web page for the evaluation of medicine and health 2023-2024: [Evaluation of medicine and health sciences (forskningsradet.no)]

Forskningsrådet

Se vedlagte adresseliste

Vår saksbehandler / tlf.	Vår ref.	Deres ref.	Sted
Hilde G. Nielsen/40922260	23/3056	[Ref.]	Lysaker 28.4.2023

Invitasjon til å delta i fagevaluering av medisin og helsefag (EVALMEDHELSE) 2023-2024

Vi viser til varsel om oppstart av nye evalueringer sendt institusjonenes ledelse 9. november 2021 (vedlegg 2).

Porteføljestyret for livsvitenskap har vedtatt å gjennomføre fagevaluering av livsvitenskap 2022-2024 som to evalueringer:

- Evaluering av biovitenskap (EVALBIOVIT) (2022-2023)
- Evaluering av medisin og helsefag (EVALMEDHELSE) (2023-2024)

Hovedmålet med fagevalueringen av livsvitenskap 2022-2024 er å vurdere kvalitet og rammebetingelser for livsvitenskapelig forskning i Norge, samt forskningens relevans for sentrale samfunnsområder. Evalueringen skal resultere i anbefalinger til institusjonene, til Forskningsrådet og til departementene. Den forrige fagevalueringen av biologi, medisin og helsefag ble gjennomført i 2010/2011 (vedlegg 3).

Fagevaluering av livsvitenskap retter seg mot UH-sektor, helseforetak og instituttsektor (vedlegg 4). Forskningsrådet forventer at aktuelle forskningsmiljøer deltar i evalueringene, selv om beslutning om deltagelse gjøres ved den enkelte institusjon. Videre ber vi om at deltakende institusjoner setter av tilstrekkelig med ressurser til å delta i evalueringsprosessen, og at institusjonen oppnevner minst én representant som kontaktperson for Forskningsrådet.

Invitasjon til å delta i fagevaluering av medisin og helsefag (2023-2024)

Fagevaluering av medisin og helsefag er organisert over to nivåer (vedlegg 4, side 11). Internasjonale ekspertpaneler vil evaluere forskergrupper på tvers av fag, disiplin og forskningssektorer (UH, institutt og helseforetak) etter kriteriene beskrevet i kapittel 2 i evalueringsprotokollen (vedlegg 4).

Panelrapporten(e) for forskergruppene vil inngå i bakgrunnsdokumentasjonen til forskergruppen(e)s administrative enhet (hovedevalueringsobjektet i evaluering), og som vil bli evaluert i internasjonale

sektorspesifikke evalueringskomiteer. Evalueringskriteriene for administrative enheter er beskrevet i kapittel 2 i evalueringsprotokollen (vedlegg 4).

Innmelding av administrative enheter og forskergrupper – frist 6. juni 2023

Administrative enheter (hovedevalueringsobjektet i evalueringen) – skjema 1

Forskningsrådet inviterer institusjonene til å melde inn sine administrative enhet/er ved å fylle ut skjema 1. Definisjonen av en administrativ enhet i denne evalueringen er å finne på side 3 (kap 1.1) i evalueringsprotokollen (vedlegg 4). Ved innmelding av administrativ/e enhet/er anbefaler Forskningsrådet institusjonene til å se innmelding av administrativ enhet/er i sammenheng med tilpasning av mandat for den administrative enheten (Appendix A i evalueringsprotokollen).

Forskergrupper – skjema 2

Forskningsrådet ber de administrative enheter om å melde inn forskergrupper i tråd med forskergruppedefinisjonen (kap 1.1) og minimumskravene beskrevet i kapittel 1.2 i evalueringsprotokollen. Hver administrative enhet melder inn sin/e forskergruppe/r ved å fylle ut Skjema 2. Vi ber også om at forskergruppene innplasseres i den tentative fagpanelinndelingen for EVALMEDHELSE (vedlegg 5).

Forskningsrådet vil ferdigstille panelstruktur og avgjøre den endelige fordelingen av forskergruppene på fagpaneler *etter* at alle forskergrupper er meldt inn. Mer informasjon vil bli sendt i slutten av juni 2023.

Invitasjon til å foreslå eksperter – skjema 3

Forskningsrådet inviterer administrative enheter og forskergrupper til å spille inn forslag til eksperter som kan inngå i evalueringskomitéene og i ekspertpanelene. Hver evalueringskomité vil bestå av 7-9 komitémedlemmer, mens hvert ekspertpanel vil bestå av 5-7 eksperter.

Obs. Det er to faner i regnearket:

- FANE 1 – forslag til medlemmer til evalueringskomitéene. Medlemmene i evalueringskomitéene skal inneha bred vitenskapelig kompetanse, både faglig kompetanse og andre kvalifikasjoner som erfaring med ledelse, strategi- og evalueringsarbeid og kunnskapsutveksling.
- FANE 2 – forslag til medlemmer til ekspertpanelene. Medlemmene i ekspertpanelene skal være internasjonalt ledende eksperter innen medisin og helsefaglig forskning og innovasjon.

Utfylte skjemaer (3 stk):

- innmelding av administrative enhet/er (skjema 1)
- innmelding av forskergruppe/er (skjema 2)
- forslag til eksperter (skjema 3)

sendes på epost til evalmedhelse@forskningsradet.no **innen 6. juni 2023.**

Tilpasning av mandat – frist 30. september 2023

Forskningsrådet ber med dette administrative enheter om å tilpasse mandatet (vedlegg 4) ved å opplyse om egne strategiske mål og andre lokale forhold som er relevant for evalueringen.

Forskningsrådet

Tilpasningen gjøres ved å fylle inn de åpne punktene i malen (Appendix A). Utfylt skjema sendes på epost til evalmedhelse@forskningsradet.no innen 30. september 2023.

Digitalt informasjonsmøte 15. mai 2023, kl. 14.00-15.00.
Forskningsrådet arrangerer et digitalt informasjonsmøte for alle som ønsker å delta i EVALMEDHELSE.

Påmelding til informasjonsmøtet gjøres her: Fagevaluering av medisin og helsefag (EVALMEDHELSE) - Digitalt informasjonsmøte (pameldingssystem.no) .

Nettsider
Forskningsrådet vil opprette en nettside på www.forskningsradet.no for EVALMEDHELSE hvor informasjon vil bli publisert fortløpende. Her kan dere lese om Fagevaluering av biovitenskap (EVALBIOVIT) 2022-2023. Fagevaluering av medisin og helsefag vil bli gjennomført etter samme modell.

Spørsmål vedrørende fagevaluering av medisin og helsefag kan rettes til Hilde G. Nielsen, hgn@forskningsradet.no eller mobil 40 92 22 60.

Med vennlig hilsen
Norges forskningsråd

Ole Johan Borge	Hilde G. Nielsen
avdelingsdirektør	spesialrådgiver
Helse	Helse

Dokumentet er elektronisk godkjent og signert og har derfor ikke håndskrevne signaturer.

Kopi
Helse- og omsorgsdepartementet
Kunnskapsdepartementet

Vedlegg
1. Adresseliste
2. Nye fagevalueringer – varsel om oppstart november 2021
3. Erfaringer med oppfølging av fagevaluering av biologi, medisin og helsefag 2010/2011
4. Fagevaluering av livsvitenskap 2022-2024 – Evalueringsprotokoll
5. Tentativ panelinndeling EVALMEDHELSE mai 2023
6. Skjema 1 – Innmeldingsskjema Administrative enheter
7. Skjema 2 – Innmeldingsskjema Forskergrupper
8. Skjema 3 – Forslag til internasjonale eksperter til evalueringskomiteene og ekspertpanelene
9. Appendix A – word format

The Research Council of Norway

Evaluation of life sciences in Norway 2022-2023

LIVSEVAL protocol version 1.0

By decision of the Portfolio board for life sciences April 5., 2022

The Research Council of Norway
Visiting address: Drammensveien 288
P.O. Box 564
NO-1327 Lysaker

Telephone: +47 22 03 70 00
Telefax: +47 22 03 70 01
post@rcn.no
www.rcn.no

The report can be downloaded at
www.forskningsradet.no/publikasjoner

Oslo, 5 April 2022

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1 Introduction

Research assessments based on this protocol serve different aims and have different target groups. The primary aim of the evaluation of life sciences is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), and by the institute sector and regional health authorities and health trusts. These institutions will hereafter be collectively referred to as Research Performing Organisations (RPOs). The assessments should serve a formative purpose by contributing to the development of research quality and relevance at these institutions and at the national level.

1.1 Evaluation units

The assessment will comprise a number of *administrative units* submitted for evaluation by the host institution. By assessing these administrative units in light of the goals and strategies set for them by their host institution, it will be possible to learn more about how public funding is used at the institution(s) to facilitate high-quality research and how this research contributes to society. The administrative units will be assessed by evaluation committees according to sectoral affiliation and/or other relevant similarities between the units.

The administrative units will be invited to submit data on their *research groups* to be assessed by expert panels organised by research subject or theme. See Chapter 3 for details on organisation.

Administrative unit	An administrative unit is any part of an RPO that is recognised as a formal (administrative) unit of that RPO, with a designated budget, strategic goals and dedicated management. It may, for instance, be a university faculty or department, a department of an independent research institute or a hospital.
Research group	Designates groups of researchers within the administrative units that fulfil the minimum requirements set out in section 1.2. Research groups are identified and submitted for evaluation by the administrative unit, which may decide to consider itself a single research group.

1.2 Minimum requirements for research groups

1) The research group must be sufficiently large in size, i.e. at least five persons in full-time positions with research obligations. This merely indicates the minimum number, and larger units are preferable. In exceptional cases, the minimum number may include PhD students, postdoctoral fellows and/or non-tenured researchers. *In all cases, a research group must include at least three full-time tenured staff*. Adjunct professors, technical staff and other relevant personnel may be listed as group members but may not be included in the minimum number.

2) The research group subject to assessment must have been established for at least three years. Groups of more recent date may be accepted if they have come into existence as a consequence of major organisational changes within their host institution.
3) The research group should be known as such both within and outside the institution (e.g. have a separate website). It should be able to document common activities and results in the form of co-publications, research databases and infrastructure, software, or shared responsibilities for delivering education, health services or research-based solutions to designated markets.
4) In its self-assessment, the administrative unit should propose a suitable benchmark for the research group. The benchmark will be considered by the expert panels as a reference in their assessment of the performance of the group. The benchmark can be grounded in both academic and extra-academic standards and targets, depending on the purpose of the group and its host institution.

1.3 The evaluation in a nutshell

The assessment concerns:

- research that the administrative unit and its research groups have conducted in the previous 10 years
- the research strategy that the administrative units under evaluation intend to pursue going forward
- the capacity and quality of research in life sciences at the national level

The Research Council of Norway (RCN) will:

- provide a template for the Terms of Reference[1] for the assessment of RPOs and a national-level assessment in life sciences
- appoint members to evaluation committees and expert panels
- provide secretarial services
- commission reports on research personnel and publications based on data in national registries
- take responsibility for following up assessments and recommendations at the national level.

RPOs conducting research in life sciences are expected to take part in the evaluation. The board of each RPO under evaluation is responsible for tailoring the assessment to its own strategies and specific needs and for following them up within their own institution. Each participating RPO will carry out the following steps:

1) Identify the administrative unit(s) to be included as the main unit(s) of assessment
2) Specify the Terms of Reference by including information on specific tasks and/or strategic goals of relevance to the administrative unit(s)

[1] The terms of reference (ToR) document defines all aspects of how the evaluation committees and expert panels will conduct the [research area] evaluation. It defines the objectives and the scope of the evaluation, outlines the responsibilities of the involved parties, and provides a description of the resources available to carry out the evaluation.

3) The administrative unit will, in turn, be invited to register a set of research groups that fulfil the minimum criteria specified above (see section 1.2). The administrative unit may decide to consider itself a single research group.
4) For each research group, the administrative unit should select an appropriate benchmark in consultation with the group in question. This benchmark can be a reference to an academic level of performance or to the group's contributions to other institutional or sectoral purposes (see section 2.4). The benchmark will be used as a reference in the assessment of the unit by the expert panel.
5) The administrative units subject to assessment must provide information about each of their research groups, and about the administrative unit as a whole, by preparing self-assessments and by providing additional documentation in support of the self-assessment.

1.4 Target groups

- Administrative units represented by institutional management and boards
- Research groups represented by researchers and research group leaders
- Research funders
- Government

The evaluation will result in recommendations to the institutions, the RCN and the ministries. The results of the evaluation will also be disseminated for the benefit of potential students, users of research and society at large.

This protocol is intended for all participants in the evaluation. It provides the information required to organise and carry out the research assessments. Questions about the interpretation or implementation of the protocol should be addressed to the RCN.

2 Assessment criteria

The administrative units are to be assessed on the basis of five assessment criteria. The five criteria are applied in accordance with international standards. Finally, the evaluation committee passes judgement on the administrative units as a whole in qualitative terms. In this overall assessment, the committee should relate the assessment of the specific tasks to the strategic goals that the administrative unit has set for itself in the Terms of Reference.

When assessing administrative units, the committees will build on a separate assessment by expert panels of the research groups within the administrative units. See Chapter 3 'Evaluation process and organisation' for a description of the division of tasks.

2.1 Strategy, resources and organisation

The evaluation committee assesses the framework conditions for research in terms of funding, personnel, recruitment and research infrastructure in relation to the strategic aims set for the administrative unit. The administrative unit should address at least the following five specific aspects in its self-assessment: 1) funding sources, 2) national and international cooperation, 3) cross-sector and interdisciplinary cooperation, 4) research careers and mobility, and 5) Open Science. These five aspects relate to how the unit organises and actually performs its research, its composition in terms of leadership and personnel, and how the unit is run on a day-to-day basis.

To contribute to understanding what the administrative unit can or should change to improve its ability to perform, the evaluation committee is invited to focus on factors that may affect performance.

Further, the evaluation committee assesses the extent to which the administrative unit's goals for the future remain scientifically and societally relevant. It is also assessed whether its aims and strategy, as well as the foresight of its leadership and its overall management, are optimal in relation to attaining these goals. Finally, it is assessed whether the plans and resources are adequate to implement this strategy.

2.2 Research production, quality and integrity

The evaluation committee assesses the profile and quality of the administrative unit's research and the contribution the research makes to the body of scholarly knowledge and the knowledge base for other relevant sectors of society. The committee also assesses the scale of the unit's research results (scholarly publications, research infrastructure developed by the unit, and other contributions to the field) and its contribution to Open Science (early knowledge and sharing of data and other relevant digital objects, as well as science communication and collaboration with societal partners, where appropriate).

The evaluation committee considers the administrative unit's policy for research integrity and how violations of such integrity are prevented. It is interested in how the unit deals with research data, data management, confidentiality (GDPR) and integrity, and the extent to which independent and critical pursuit of research is made possible within the unit. Research integrity relates to both the scientific integrity of conducted research and the professional integrity of researchers.

2.3 Diversity and equality

The evaluation committee considers the diversity of the administrative unit, including gender equality. The presence of differences can be a powerful incentive for creativity and talent development in a diverse administrative unit. Diversity is not an end in itself in that regard, but a tool for bringing together different perspectives and opinions.

The evaluation committee considers the strategy and practices of the administrative unit to prevent discrimination on the grounds of gender, age, disability, ethnicity, religion, sexual orientation or other personal characteristics.

2.4 Relevance to institutional and sectoral purposes

The evaluation committee compares the relevance of the administrative unit's activities and results to the specific aspects detailed in the Terms of Reference for each institution and to the relevant sectoral goals (see below).

Higher Education Institutions

There are 36 Higher Education Institutions in Norway that receive public funding from the Ministry for Education and Research. Twenty-one of the 36 institutions are owned by the ministry, whereas the last 15 are privately owned. The HEIs are regulated under the Act relating to universities and university colleges of 1 August 2005.

The purposes of Norwegian HEIs are defined as follows in the Act relating to universities and university colleges[2]

- provide higher education at a high international level;
- conduct research and academic and artistic development work at a high international level;
- disseminate knowledge of the institution's activities and promote an understanding of the principle of academic freedom and application of scientific and artistic methods and results in the teaching of students, in the institution's own general activity as well as in public administration, in cultural life and in business and industry.

In line with these purposes, the Ministry for Research and Education has defined four overall goals for HEIs that receive public funding. These goals have been applied since 2015:

1) High quality in research and education
2) Research and education for welfare, value creation and innovation
3) Access to education (esp. capacity in health and teacher education)
4) Efficiency, diversity and solidity of the higher education sector and research system

The committee is invited to assess to what extent the research activities and results of each administrative unit have contributed to sectoral purposes as defined above. In particular, the committee is invited to take the share of resources spent on education at the administrative units into account and to assess the relevance and contributions of research to education, focusing on the master's and PhD levels. This assessment should be distinguished from an

[2] https://lovdata.no/dokument/NLE/lov/2005-04-01-15?q=universities

assessment of the quality of education in itself, and it is limited to the role of research in fostering high-quality education.

Research institutes (the institute sector)

Norway's large institute sector reflects a practical orientation of state R&D funding that has long historical roots. The Government's strategy for the institute sector[3] applies to the 33 independent research institutes that receive public basic funding through the RCN, in addition to 12 institutes outside the public basic funding system.

The institute sector plays an important and specific role in attaining the overall goal of the national research system, i.e. to increase competitiveness and innovation power to address major societal challenges. The research institutes' contributions to achieving these objectives should therefore form the basis for the evaluation. The main purpose of the sector is to conduct independent applied research for present and future use in the private and public sector. However, some institutes primarily focus on developing a research platform for public policy decisions, others on fulfilling their public responsibilities.

The institutes should:

- maintain a sound academic level, documented through scientific publications in recognised journals
- obtain competitive national and/or international research funding grants
- conduct contract research for private and/or public clients
- demonstrate robustness by having a reasonable number of researchers allocated to each research field

The committee is invited to assess the extent to which the research activities and results of each administrative unit contribute to sectoral purposes and overall goals as defined above. In particular, the committee is invited to assess the level of collaboration between the administrative unit(s) and partners in their own or other sectors.

The hospital sector

There are four regional health authorities (RHFs) in Norway. They are responsible for the specialist health service in their respective regions. The RHFs are regulated through the Health Enterprises Act of 15 June 2001 and are bound by requirements that apply to specialist and other health services, the Health Personnel Act and the Patient Rights Act. Under each of the regional health authorities, there are several health trusts (HFs), which can consist of one or more hospitals. A health trust (HF) is wholly owned by an RHF.

Research is one of the four main tasks of hospital trusts.[4] The three other mains tasks are to ensure good treatment, education and training of patients and relatives. Research is important if the health service is to keep abreast of stay up-to-date with medical developments and carry out critical assessments of established and new diagnostic methods,

[3] Strategy for a holistic institute policy (Kunnskapsdepartementet 2020)

[4] Cf. the Specialist Health Services Act § 3-8 and the Health Enterprises Act §§ 1 and 2

treatment options and technology, and work on quality development and patient safety while caring for and guiding patients.

The committee is invited to assess the extent to which the research activities and results of each administrative unit have contributed to sectoral purposes as described above. The assessment does not include an evaluation of the health services performed by the services.

2.5 Relevance to society

The committee assesses the quality, scale and relevance of contributions targeting specific economic, social or cultural target groups, of advisory reports on policy, of contributions to public debates, and so on. The documentation provided as the basis for the assessment of societal relevance should make it possible to assess relevance to various sectors of society (i.e. business, the public sector, non-governmental organisations and civil society).

When relevant, the administrative units will be asked to link their contributions to national and international goals set for research, including the Norwegian Long-term Plan for Research and Higher Education and the UN Sustainable Development Goals. Sector-specific objectives, e.g. those described in the Development Agreements for the HEIs and other national guidelines for the different sectors, will be assessed as part of criterion 2.4.

The committee is also invited to assess the societal impact of research based on case studies submitted by the administrative units and/or other relevant data presented to the committee. Academic impact will be assessed as part of criterion 2.2.

3 Evaluation process and organisation

The RCN will organise the assessment process as follows:

- Commission a professional secretariat to support the assessment process in the committees and panels, as well as the production of self-assessments within each RPO
- Commission reports on research personnel and publications within life sciences based on data in national registries
- Appoint one or more evaluation committees for the assessment of administrative units.
- Divide the administrative units between the appointed evaluation committees according to sectoral affiliation and/or other relevant similarities between the units.
- Appoint a number of expert panels for the assessment of research groups submitted by the administrative units.
- Divide research groups between expert panels according to similarity of research subjects or themes.
- Task the chairs of the evaluation committees with producing a national-level report building on the assessments of administrative units and a national-level assessments produced by the expert panels.

Committee members and members of the expert panels will be international, have sufficient competence and be able, as a body, to pass judgement based on all relevant assessment criteria. The RCN will facilitate the connection between the assessment levels of panels and committees by appointing committee members as panel chairs.

3.1 Division of tasks between the committee and panel levels

The expert panels will assess research groups across institutions and sectors, focusing on the first two criteria specified in Chapter 2: 'Strategy, resources and organisation' and 'Research production and quality' The assessments from the expert panels will also be used as part of the evidence base for a report on Norwegian research within life sciences (see section 3.3).

The evaluation committees will assess the administrative units based on all the criteria specified in Chapter 2. The assessment of research groups delivered by the expert panels will be a part of the evidence base for the committees' assessments of administrative units. See figure 1 below.

The evaluation committee has sole responsibility for the assessments and any recommendations in the report. The evaluation committee reaches a judgement on the research based on the administrative units and research groups' self-assessments provided by the RPOs, any additional documents provided by the RCN, and interviews with representatives of the administrative units. The additional documents will include a standardised analysis of research personnel and publications provided by the RCN.

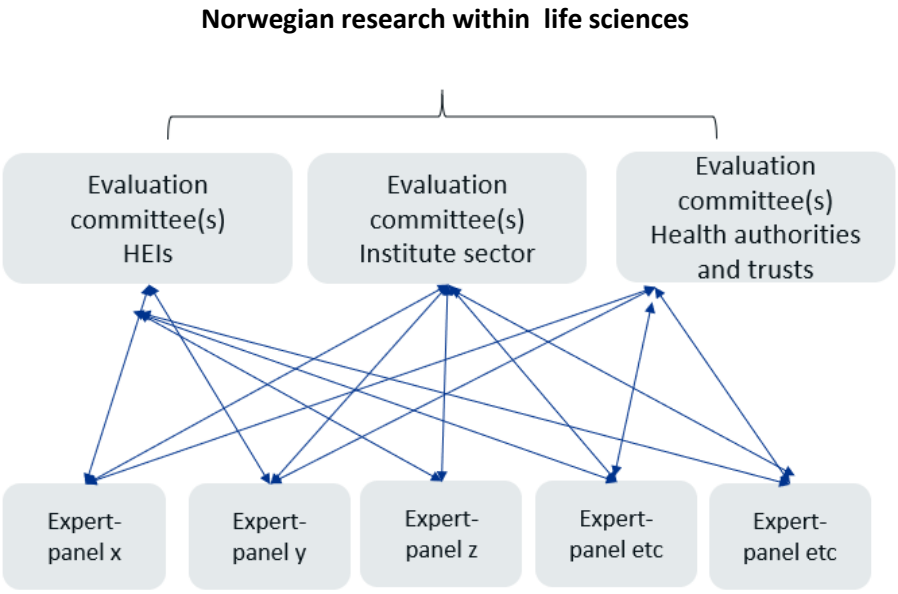

Figure 1. Evaluation committees and expert panels

The evaluation committee takes international trends and developments in science and society into account when forming its judgement. When judging the quality and relevance of the research, the committees shall bear in mind the specific tasks and/or strategic goals that the administrative unit has set for itself including sectoral purposes (see section 2.4 above).

3.2 Accuracy of factual information

The administrative unit under evaluation should be consulted to check the factual information before the final report is delivered to the RCN and the board of the institution hosting the administrative unit.

3.3 National level report

Finally, the RCN will ask the chairs of the evaluation committees to produce a national-level report that builds on the assessments of administrative units and the national-level assessments produced by the expert panels. The committee chairs will present their assessment of Norwegian research in life sciences at the national level in a separate report that pays specific attention to:

- Strengths and weaknesses of the research area in the international context
- The general resource situation regarding funding, personnel and infrastructure
- PhD training, recruitment, mobility and diversity
- Research cooperation nationally and internationally
- Societal impact and the role of research in society, including Open Science

This national-level assessment should be presented to the RCN.

Appendix A: Terms of References (ToR)

[Text in red to be filled in by the Research-performing organisations (RPOs)]

The board of [RPO] mandates the evaluation committee appointed by the Research Council of Norway (RCN) to assess [administrative unit] based on the following Terms of Reference.

Assessment
You are asked to assess the organisation, quality and diversity of research conducted by [administrative unit] as well as its relevance to institutional and sectoral purposes, and to society at large. You should do so by judging the unit's performance based on the following five assessment criteria (a. to e.). Be sure to take current international trends and developments in science and society into account in your analysis.

a) Strategy, resources and organisation
b) Research production, quality and integrity
c) Diversity and equality
d) Relevance to institutional and sectoral purposes
e) Relevance to society

For a description of these criteria, see Chapter 2 of the life sciences evaluation protocol. Please provide a written assessment for each of the five criteria. Please also provide recommendations for improvement. We ask you to pay special attention to the following [n] aspects in your assessment:

1. …
2. …
3. …
4. …

…

[To be completed by the board: specific aspects that the evaluation committee should focus on – they may be related to a) strategic issues, or b) an administrative unit's specific tasks.]

In addition, we would like your report to provide a qualitative assessment of [administrative unit] as a whole in relation to its strategic targets. The committee assesses the strategy that the administrative unit intends to pursue in the years ahead and the extent to which it will be capable of meeting its targets for research and society during this period based on available resources and competence. The committee is also invited to make recommendations concerning these two subjects.

Documentation
The necessary documentation will be made available by the life sciences secretariat at Technopolis Group.

The documents will include the following:

- a report on research personnel and publications within life sciences commissioned by RCN
- a self-assessment based on a template provided by the life sciences secretariat
- [to be completed by the board]

Interviews with representatives from the evaluated units
Interviews with the [administrative unit] will be organised by the evaluation secretariat. Such interviews can be organised as a site visit, in another specified location in Norway or as a video conference.

Statement on impartiality and confidence
The assessment should be carried out in accordance with the *Regulations on Impartiality and Confidence in the Research Council of Norway*. A statement on the impartiality of the committee members has been recorded by the RCN as a part of the appointment process. The impartiality and confidence of committee and panel members should be confirmed when evaluation data from [the administrative unit] are made available to the committee and the panels, and before any assessments are made based on these data. The RCN should be notified if questions concerning impartiality and confidence are raised by committee members during the evaluation process.

Assessment report
We ask you to report your findings in an assessment report drawn up in accordance with a format specified by the life sciences secretariat. The committee may suggest adjustments to this format at its first meeting. A draft report should be sent to the [administrative unit] and RCN by [date]. The [administrative unit] should be allowed to check the report for factual inaccuracies; if such inaccuracies are found, they should be reported to the life sciences secretariat no later than two weeks after receipt of the draft report. After the committee has made the amendments judged necessary, a corrected version of the assessment report should be sent to the board of [the RPO] and the RCN no later than two weeks after all feedback on inaccuracies has been received from [administrative unit].

Appendix B: Data sources

The lists below shows the most relevant data providers and types of data to be included in the evaluation. Data are categorised in two broad categories according to the data source: National registers and self-assessments prepared by the RFOs. The RCN will commission an analysis of data in national registers (R&D-expenditure, personnel, publications etc.) to be used as support for the committees' assessment of administrative units. The analysis will include a set of indicators related to research personnel and publications.

- **National directorates and data providers**
- Norwegian Directorate for Higher Education and Skills (HK-dir)
- Norwegian Agency for Quality Assurance in Education (NOKUT)
- Norwegian Agency for Shared Services in Education and Research (SIKT)
- Research Council of Norway (RCN)
- Statistics Norway (SSB)

National registers

1) R&D-expenditure
    a. SSB: R&D statistics
    b. SSB: Key figures for research institutes
    c. HK-dir: Database for Statistics on Higher Education (DBH)
    d. RCN: Project funding database (DVH)
    e. EU-funding: eCorda
2) Research personnel
    a. SSB: The Register of Research personnel
    b. SSB: The Doctoral Degree Register
    c. RCN: Key figures for research institutes
    d. HK-dir: Database for Statistics on Higher Education (DBH)
3) Research publications
    a. SIKT: Cristin - Current research information system in Norway
    b. SIKT: Norwegian Infrastructure for Bibliometrics
    (full bibliometric data incl. citations and co-authors)
4) Education
    a. HK-dir/DBH: Students and study points
    b. NOKUT: Study barometer
    c. NOKUT: National Teacher Survey
5) Sector-oriented research
    a. RCN: Key figures for research institutes
6) Patient treatments and health care services
    a. Research & Innovation expenditure in the health trusts
    b. Measurement of research and innovation activity in the health trusts
    c. Collaboration between health trusts and HEIs
    d. Funding of research and innovation in the health trusts
    e. Classification of medical and health research using HRCS (HO21 monitor)

Self-assessments

1) Administrative units
    a. *Self-assessment covering all assessment criteria*
    b. Administrative data on funding sources
    c. Administrative data on personnel
    d. Administrative data on the division of staff resources between research and other activities (teaching, dissemination etc.)
    e. Administrative data on research infrastructure and other support structures
    f. SWOT analysis
    g. Any supplementary data needed to assess performance related to the strategic goals and specific tasks of the unit

2) Research groups
    a. *Self-assessment covering the first two assessment criteria (see Table 1)*
    b. Administrative data on funding sources
    c. Administrative data on personnel
    d. Administrative data on contribution to sectoral purposes: teaching, commissioned work, clinical work [will be assessed at committee level]
    e. Publication profiles
    f. Example publications and other research results (databases, software etc.) The examples should be accompanied by an explanation of the groups' specific contributions to the result
    g. Any supplementary data needed to assess performance related to the benchmark defined by the administrative unit

The table below shows how different types of evaluation data may be relevant to different evaluation criteria. Please note that the self-assessment produced by the administrative units in the form of a written account of management, activities, results etc. should cover all criteria. A template for the self-assessment of research groups and administrative units will be commissioned by the RCN from the life sciences secretariat for the evaluation.

Table 1. Types of evaluation data per criterion

Evaluation units / Criteria	Research groups	Administrative units
Strategy, resources and organisation	Self-assessment Administrative data	Self-assessment National registers Administrative data SWOT analysis
Research production and quality	Self-assessment Example publications (and other research results)	Self-assessment National registers
Diversity, equality and integrity		Self-assessment National registers Administrative data
Relevance to institutional and sectoral purposes		Self-assessment Administrative data
Relevance to society		Self-assessment National registers Impact cases
Overall assessment	*Data related to:* *Benchmark defined by administrative unit*	*Data related to:* *Strategic goals and specific tasks of the admin. unit*

Evaluation of Medicine and Health (EVALMEDHELSE) 2023-2024

Self- assessment for administrative units

Date of dispatch: **15 September 2023**
Deadline for submission: **31 January 2024**

Institution (name and short name):_____
Administrative unit (name and short name): _____
Date:_____
Contact person:_____
Contact details (email):_____

Content

Introduction

The primary aim of the evaluation is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), the institute sector and the health trusts. These institutions will henceforth be collectively referred to as research performing organisations (RPOs). The evaluation report(s) will provide a set of recommendations to the RPOs, the Research Council of Norway (RCN) and the responsible and concerned ministries. The results of the evaluation will also be disseminated for the benefit of potential students, users of research and society at large.

You have been invited to complete this self-assessment as an administrative unit. The self-assessment contains questions regarding the unit's research- and innovation related activities and developments over years 2012-2022. All submitted data will be evaluated by international evaluation committees. The administrative unit´s research groups will be assessed by international expert panels who report their assessment to the relevant evaluation committee.

Deadline for submitting self- assessments to the Research Council of Norway – 31 January 2024
As an administrative unit you are responsible for collecting completed self-assessments for each of the research groups that belong to the administrative unit. The research groups need to submit their completed self-assessment to the administrative unit no later than 26 January 2024. The administrative unit will submit the research groups' completed self-assessments and the administrative unit's own completed self-assessment to the Research Council within 31 January 2024.

Please use the following format when naming your document: name of the institution and short name of the administrative unit, e.g. *NTNU_FacMedHealthSci* and send it to evalmedhelse@forskningsradet.no within 31 January 2024.

For questions concerning the self-assessment or EVALMEDHELSE in general, please contact RCN at evalmedhelse@forskningsradet.no.

Thank you!

Guidelines for completing the self-assessment

- Please read the entire self-assessment document before answering.
- The evaluation language is English.
- Please be sure that all documents which are linked to in the self- assessment are in English and are accessible.
- The page format must be A4 with 2 cm margins, single spacing and Calibri and 11-point font.
- The self-assessment follows the same structure as the evaluation protocol. In order to be evaluated on all criteria, the administrative unit must answer all questions.
- Information should be provided by link to webpages i.e. strategy and other planning documents.
  - Provide information – provide documents and other relevant data or figures about the administrative unit, for example strategy and other planning documents.
  - Describe – explain and present using contextual information about the administrative unit and inform the reader about the administrative unit.
  - Reflect – comment in a reflective and evaluative manner how the administrative unit operates.
- Data on personnel should refer to reporting to DBH on 1 October 2022 for HEIs and to the yearly reporting for 2022 for the institute sector and the health trusts. Other data should refer to 31 December 2022, if not specified otherwise.
- Questions in 4.3c should **ONLY** be answered by administrative units responsible for the Cand.med. degree programme, cf. Evaluation of the Professional programme in Medicine (NOKUT).
- It is possible to extend the textboxes when filling in the from. **NB!** A completed self- assessment cannot exceed 50 pages (pdf file) excluding question 4.3.c. The evaluation committees are not requested to read more than the maximum of 50 pages. Pages exceeding maximum limit of 50 pages **might not** be evaluated.
- Submit the self- assessment as a pdf (max 50 pages). Before submission, please be sure that all text are readable after the conversion of the document to pdf. The administrative unit is responsible for submitting the self-assessment of the administrative unit together with the self-assessments of the belonging research group(s) to evalmedhelse@forskningsradet.no within **31 January 2024.**

Please note that information you write in the self- assessment and the links to documents/webpages in the self- assessment are the only available information (data material) for the evaluation committee.

In exceptional cases, documents/publications that are not openly available must be submitted as attachment(s) to the self- assessment (pdf file(s)).

1.Strategy, resources and organisation

1.1 Research strategy

Describe the main strategic goals for research and innovation of the administrative unit. You may include the following:

- How are these goals related to institutional strategies and scientific priorities?
- Describe how the administrative unit's strategies and scientific priorities are related to the "specific aspects that the evaluation committee should focus on" indicated in your Terms of Reference (ToR)
- Describe the main fields and focus of research and innovation in the administrative unit
- Describe the planned research-field impact; planned policy impact and planned societal impact
- Describe how the strategy is followed-up in the allocation of resources and other measures
- Describe the most important occasions where priorities are made (i.e., announcement of new positions, applying for external funding, following up on evaluations)
- If there is no research strategy – please explain why

Table 1. Administrative unit`s strategies

For each category present up to 5 documents which are most relevant for the administrative unit. Please delete lines which are not in use.

Research strategy		
No.	**Title**	**Link**
1		
2		
3		
4		
5		
Outreach strategies		
No.	**Title**	**Link**
1		
2		
3		
4		
5		
Open science policy		
No.	**Title**	**Link**
1		
2		
3		
4		
5		

1.2 Organisation of research

a) Describe the organisation of research and innovation activities/projects at the administrative unit, including how responsibilities for research and other purposes (education, knowledge exchange, patient treatment, researcher training, outreach activities etc.) are distributed and delegated.

b) Describe how you work to maximise synergies between the different purposes of the administrative unit (education, knowledge exchange, patient treatment, researcher training, outreach activities etc.).

1.3 Research staff

Describe the profile of research personnel at the administrative unit in terms of position and gender. Institutions in the higher education sector should use the categories used in DBH, https://dbh.hkdir.no/datainnhold/kodeverk/stillingskoder.

RCN has commissioned reports from Statistics Norway (SSB) on personnel for the administrative units included in the evaluation. These reports will be made available to the units early November 2023.

Only a subset of the administrative units submitted to the evaluation is directly identifiable in the national statistics. Therefore, we ask all administrative units to provide data on their R&D personnel. Institutions that are directly identifiable in the national statistics (mainly higher education) are invited to use the figures provided in the report delivered by Statistics Norway. Please delete lines which are not in use.

Table 2. Research staff

	Position by category	**No. of researcher per category**	**Share of women per category (%)**	**No. of researchers who are part of multiple (other) research groups at the admin unit**	**No. of temporary positions**
No. of Personell by position	Position A (Fill in)				
	Position B (Fill in)				
	Position C (Fill in)				
	Position D (Fill in)				

1.4 Researcher careers opportunities

a) Describe the structures and practices to support researcher careers and help early-career researchers to make their way into the profession.

b) Describe how research time is distributed among staff including criteria for research leave/sabbaticals (forskningstermin/undervisningsfri).

c) Describe research mobility options.

1.5 Research funding

a) Describe the funding sources of the administrative unit. Indicate the administrative unit´s total yearly budget and the share of the unit's budget dedicated to research.

b) Give an overview of the administrative unit's competitive national and/or international grants last five years (2018-2022).

Table 3. R&D funding sources
Please indicate R&D funding sources for the administrative unit for the period 2018-2022 (average NOK per year, last five years).

For Higher Education Institutions: Share of basic grant (grunnbevilgning) used for R&D[1] **For Research Institutes and Health Trusts: Direct R&D funding from Ministries (per ministry)**	
Name of ministry	NOK

National grants (bidragsinntekter) (NOK)	
From the ministries and underlying directorates	
From industry	
From public sector	
Other national grants	
Total National grants	
National contract research (oppdragsinntekter)[2] (NOK)	
From the ministries and underlying directorates	
From industry	

[1] Shares may be calculated based on full time equivalents (FTE) allocated to research compared to total FTE in administrative unit

[2] For research institutes only research activities should be included from section 1.3 in the yearly reporting

From public sector	
Other national contract research	
Total contract research	
International grants (NOK)	
From the European Union	
From industry	
Other international grants	
Total international grants	
Funding related to public management (forvaltningsoppgaver) or (if applicable) funding related to special hospital tasks, if any	
Total funding related to public management/special hospital tasks	
Total all R&D budget items (except basic grant)	

1.6 Collaboration

Describe the administrative unit's policy towards national and international collaboration partners, the type of the collaborations the administrative unit have with the partners, how the collaboration is put to practice as well as cross-sectorial and interdisciplinary collaborations.

- Reflect of how successful the administrative unit has been in meeting its aspirations for collaborations
- Reflect on the importance of different types of collaboration for the administrative unit: National and international collaborations. Collaborations with different sectors, including public, private and third sector
- Reflect on the added value of these collaborations to the administrative unit and Norwegian research system

Table 4a. The main national collaborative constellations with the administrative unit
Please categorise the collaboration according to the most important national partner(s): 5-10 institutions in the period 2012-2022. Please delete lines which are not in use.

National collaborations

Collaboration with national institutions – 1 -10	
Name of main collaboration or collaborative project with the admin unit	
Name of partner institution(s)	
Sector of partner/institution(s)/sectors involved	
Impacts and relevance of the collaboration	

Table 4b. The main international collaborative constellations with the administrative unit
Please categorise the collaboration according to the most important international partner(s): 5-10 international institutions in the period 2012-2022. Please delete lines which are not in use.

International collaborations

Collaboration with international institutions – 1-10	
Name of main collaboration or collaborative project with the admin unit	
Name of partner institution(s)	
Sector of partner/institution(s)/sectors involved	

Impacts and relevance of the collaboration	

1.7 Open science policies

a) Describe the institutional policies, approaches, and activities to the Open Science areas which may include the following:

- Open access to publications
- Open access to research data and implementation of FAIR data principles
- Open-source software/tools
- Open access to educational resources
- Open peer review
- Citizen science and/or involvement of stakeholders / user groups
- Skills and training for Open Science

b) Describe the most important contributions and impact of the administrative unit's researchers towards the different Open Science areas cf. 1.7a above.

c) Describe the institutional policy regarding ownership of research data, data management, and confidentiality. Is the use of data management plans implemented at the administrative unit?

1.8 SWOT analysis for administrative units

Instructions: Please complete a SWOT analysis for your administrative unit. Reflect on what are the major internal Strengths and Weaknesses as well as external Threats and Opportunities for your research and innovation activities/projects and research environment. Assess what the present Strengths enable in the future and what kinds of Threats are related to the Weaknesses. Consider your scientific expertise and achievements, funding, facilities, organisation and management.

Internal	**Strengths**	**Weaknesses**
External	**Opportunities**	**Threats**

2. Research production, quality and integrity

2.1 Research quality and integrity

Please see the bibliometric analysis for the administrative unit developed by NIFU (available by the end of October, 2023).

a) Describe the scientific focus areas of the research conducted at the administrative unit, including the unit's contribution to these areas.

b) Describe the administrative unit's policy for research integrity, including preventative measures when integrity is at risk, or violated.

2.2 Research infrastructures

a) Participation in national infrastructure

Describe the most important participation in the national infrastructures listed in the Norwegian roadmap for research infrastructures (Norsk veikart for forskningsinfrastruktur) including as host institution(s).

Table 5. Participation in national infrastructure

Please present up to 5 participations in the national infrastructures listed in the Norwegian roadmap for research infrastructures (Norsk veikart for forskningsinfrastruktur) for each area that were the most important to your administrative unit.

Areas in roadmap	Name of research infrastructure	Period (from year to year)	Description	Link to website

b) Participation in international infrastructures

Describe the most important participation in the international infrastructures funded by the ministries (Norsk deltakelse i internasjonale forskningsorganisasjoner finansiert av departementene).

Table 6. Participation in international infrastructure

Please describe up to 5 participations in international infrastructures for each area that have been most important to your administrative unit.

Project	Name	Period (from year to year)	Description	Link to infrastructure

c) Participation in European (ESFRI) infrastructures

Describe the most important participation in European (ESFRI) infrastructures (Norske medlemskap i infrastrukturer i ESFRI roadmap) including as host institution(s).

Table 7. Participation in infrastructures on the ESFRI Roadmap
Please give a description of up to 5 participations that have been most important to your administrative unit.

Social sciences and the humanities				
Name	**ESFRI-project**	**Summary of participation**	**Period (from year to year)**	**Link**

d) Access to research infrastructures
Describe access to relevant national and/or international research infrastructures for your researchers. Considering both physical and digital infrastructure.

e) FAIR- principles
Describe what is done at the unit to fulfil the FAIR-principles.

3. Diversity and equality

Describe the policy and practices to protect against any form of discrimination and to promote diversity in the administrative unit.

Table 8. Administrative unit policy against discrimination
Give a description of up to 5 documents that are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then these documents should be referred to.
Please delete lines which are not in use.

No.	**Name**	**Valid period**	**Link**
1			

4. Relevance to institutional and sectorial purposes

4.1 Sector specific impact

Describe whether the administrative unit has activities aimed at achieving sector-specific objectives or focusing on contributing to the knowledge base in general. Describe activities connected to sector-specific objectives, the rationale for participation and achieved and/or expected impacts. Please refer to chapter 2.4 in the evaluation protocol.

- Alternatively, describe whether the activities of the administrative unit are aimed at contribution to the knowledge base in general. Describe the rationale for this approach and the impacts of the unit's work to the knowledge base.

4.2 Research innovation and commercialisation

a) Describe the administrative unit's practices for innovation and commercialisation.

b) Describe the motivation among the research staff in doing innovation and commercialisation activities.

c) Describe how innovation and commercialisation is supported at the administrative unit.

Table 9. Policies for innovation including IP policies, new patents, licenses, start-up/spin-off guidelines
Describe up to 5 documents of the administrative unit's policies for innovation, including IP policies, new patents, licenses, start-up/spin-off guidelines, etc., that are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then present these documents. Please delete lines which are not in use.

No.	Name	Valid period	Link
1			

Table 10. Administrative description of successful innovation and commercialisation results
Please describe up to 10 successful innovation and commercialisation results at your administrative unit in the period 2012-2022. Please delete lines which are not in use.

No.	Name of innovation and commercial results	Link	Description of successful innovation and commercialisation result.
1			

4.3 Higher education institutions

a) Reflect how research at the administrative unit contributes towards master and PhD-level education provision, at your institutions and beyond.

b) Describe the opportunities for master students to become involved in research activities at the administrative unit.

c) **ONLY** for administrative units responsible for the Cand.med. degree programme, cf. Evaluation of the Professional programme in Medicine (NOKUT).

- Reflect on how research at the administrative unit contributes towards the quality of the Cand.med. degree programme at your institutions and beyond.
- Describe the different opportunities for students on the Cand.med. degree programme to become involved in research activities at the administrative unit, and the extent to which students use those opportunities.

4.4 Research institutes

a) Describe how the research and innovation activities/projects at the administrative unit contribute to the knowledge base for policy development, sustainable development, and societal and industrial transformations more generally.

b) Describe the most important research activities with partners outside of research organisations.

4.5 Health trusts

a) Reflect on how the administrative unit's clinical research, innovation and commercialisation contribute towards development, assessment and implementation of new diagnostic methods, treatment, and healthcare technologies.

b) Reflect on how research at the unit contributes towards the quality of relevant education programme at your institutions or beyond.

c) Describe the different opportunities for students on relevant educational programmes to become involved in research activities at the administrative unit, and the extent to which students use those opportunities.

5. Relevance to society

Reflect on the administrative unit's contribution towards the Norwegian Long-term plan for research and higher education, societal challenges more widely, and the UN Sustainable Development Goals.

5.1 Impact cases

Please use the attached template for impact cases. Each impact case should be submitted as an attachment (pdf) to the self-assessment.

Impact case guidelines

Each case study should include sufficiently clear and detailed information to enable the evaluation committee to make judgements based on the information it contains, without making inferences, gathering additional material, following up references or relying on members' prior knowledge. References to other sources of information will be used for verification purposes only, not as a means for the evaluation committee to gather further information to inform judgements.

In this evaluation, impact is defined as an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia.

Timeframes

- The impact must have occurred between 2012 and 2022
- Some of the underpinning research should have been published in 2012 or later
- The administrative units are encouraged to prioritise recent cases

Page limit

Each completed case study template will be limited to **five pages** in length. Within the annotated template below, indicative guidance is provided about the expected maximum length limit of each section, but institutions will have flexibility to exceed these so long as the case study as a whole remains no longer than **five pages** (font Calibri, font size 11). Please write the text into the framed template under the sections 1–5 below. The guiding text that stands there now, can be deleted.

Maximum number of cases permitted per administrative unit

For up to 10 researchers: one case; for 10 to 30 researchers: two cases; for 30-50 researchers: three cases; for 50-100 researchers: four cases, and up to five cases for units exceeding 100 researchers.

Naming and numbering of cases

Please use the standardised short name for the administrative unit, and the case number for the unit (1,2,3, etc) in the headline of the case. Each case should be stored as a separate PDF-document with the file name: [Name of the institution and name of the administrative unit] [case number]

Publication of cases

RCN plans to publish all impact cases in a separate evaluation report. By submitting the case the head of the administrative units consents to the publication of the case. Please indicate below if a case may not be made public for reasons of confidentiality.

If relevant, describe any reason to keep this case confidential:

Please write the text here

[Name of the institution and name of the administrative unit] [case number]

Institution:
Administrative unit:
Title of case study:
Period when the underpinning research was undertaken:
Period when staff involved in the underpinning research were employed by the submitting institution:
Period when the impact occurred:

1. Summary of the impact (indicative maximum 100 words)
This section should briefly state what specific impact is being described in the case study.

2. Underpinning research (indicative maximum 500 words)
This section should outline the key research insights or findings that underpinned the impact, and provide details of what research was undertaken, when, and by whom. This research may be a body of work produced over a number of years or may be the output(s) of a particular project. References to specific research outputs that embody the research described in this section, and evidence of its quality, should be provided in the next section. Details of the following should be provided in this section:

- The nature of the research insights or findings which relate to the impact claimed in the case study.
- An outline of what the underpinning research produced by the submitted unit was (this may relate to one or more research outputs, projects or programmes).
- Dates of when it was carried out.
- Names of the key researchers and what positions they held at the administrative unit at the time of the research (where researchers joined or left the administrative unit during this time, these dates must also be stated).
- Any relevant key contextual information about this area of research.

3. References to the research (indicative maximum of six references)
This section should provide references to key outputs from the research described in the previous section, and evidence about the quality of the research. All forms of output cited as underpinning research will be considered equitably, with no distinction being made between the types of output referenced. Include the following details for each cited output:
- Author(s)
- Title
- Year of publication
- Type of output and other relevant details required to identify the output (for example, DOI, journal title and issue)
- Details to enable the panel to gain access to the output, if required (for example, a DOI or URL).

All outputs cited in this section must be capable of being made available to panels. If they are not available in the public domain, the administrative unit must be able to provide them if requested by RCN or the evaluation secretariate.

4. Details of the impact (indicative maximum 750 words)
This section should provide a narrative, with supporting evidence, to explain:

- How the research underpinned (made a distinct and material contribution to) the impact;
- The nature and extent of the impact.

The following should be provided:
- A clear explanation of the process or means through which the research led to, underpinned or made a contribution to the impact (for example, how it was disseminated, how it came to influence users or beneficiaries, or how it came to be exploited, taken up or applied).

- Where the submitted administrative unit's research was part of a wider body of research that contributed to the impact (for example, where there has been research collaboration with other institutions), the case study should specify the particular contribution of the submitted administrative unit's research and acknowledge other key research contributions.
- Details of the beneficiaries – who or what community, constituency or organisation has benefitted, been affected or impacted on.
- Details of the nature of the impact – how they have benefitted, been affected or impacted on.
- Evidence or indicators of the extent of the impact described, as appropriate to the case being made.
- Dates of when these impacts occurred.

5. Sources to corroborate the impact (indicative maximum of ten references)

Institution	Administrative unit	Name of research group	Expert panel
FHI	Division of Climate and Environmental Health	Chemical Toxicology (KMKT)	Panel 1a
FHI	Division of Climate and Environmental Health	Department of Air Quality and Noise (KMLS)	Panel 4b
FHI	Division of Climate and Environmental Health	Department of Food Safety (KMMT)	Panel 4b

Scales for research group assessment

Use whole integers only – no fractions!

Organisational dimension

Score	Organisational environment
5	An organisational environment that is outstanding for supporting the production of excellent research.
4	An organisational environment that is very strong for supporting the production of excellent research.
3	An organisational environment that is adequate for supporting the production of excellent research.
2	An organisational environment that is modest for supporting the production of excellent research.
1	An organisational environment that is not supportive for the production of excellent research.

Quality dimension

The quality dimension consists of two judgements: 1) Research and publication quality, and 2) Research group's contribution. The first judgement is defined as follows:

Score	Research and publication quality	Supporting explanation
5	Quality that is outstanding in terms of originality, significance, and rigour.	**The quality of the research is world leadin**g in terms of quality, and is comparable to the best work internationally in the same area of research. The publications submitted provide evidence that the work of the group meets the highest international standards in terms of originality, significance, and rigour. Work at this level should be a key international reference in its area.
4	Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence.	**The quality of the research is internationally excellent**. The research is clearly of an international standard, with a very good level of quality in terms of originality, significance, and rigour. Work at this level can arouse significant interest in the international academic community, and international journals with the most rigorous standards of publication (irrespective of the place or language of publication) could publish work of this level.
3	Quality that is recognised internationally in terms of originality, significance and rigour.	**The quality of the research is sufficient to achieve some international recognition.** It would be perceived nationally as strong and may occasionally reach an internationally recognised level in terms of originality, significance and rigour. Internationally recognised journals could publish some work of this level.
2	Quality that meets the published definition of research for the purposes of this assessment.	The international academic community would deem the research to be nationally acceptable, but below world standards. Legitimate nationally recognised peer-reviewed journals could publish work of this level.
1	Quality that falls below the published definition of research for the purposes of this assessment[1].	**The quality of the research** is well below international level, and is unpublishable in legitimate peer-reviewed research journals.

[1] A publication has to meet all of the criteria below:

Societal impact dimension

The societal impact dimension is also composed of two judgements, defined as presented in the table below.

Score	Research group's societal contribution, taking into consideration the resources available to the group	Score	User involvement
5	The group has contributed extensively to economic, societal and/or cultural development in Norway and/or internationally.	5	Societal partner involvement is outstanding – partners have had an important role in all parts of the research process, from problem formulation to the publication and/or process or product innovation.
4	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is very considerable given what is expected from groups in the same research field.	4	Societal partners have very considerable involvement in all parts of the research process, from problem formulation to the publication and/or process or product innovation.
3	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is on par with what is expected from groups in the same research field.	3	Societal partners have considerable involvement in the research process, from problem formulation to the publication and/or process or product innovation.
2	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is modest given what is expected from groups in the same research field.	2	Societal partners have a modest part in the research process, from problem formulation to the publication and/or process or product innovation.
1	There is little documentation of contributions from the group to economic, societal and/or cultural development in Norway and/or internationally.	1	There is little documentation of societal partners' participation in the research process, from problem formulation to the publication and/or process or product innovation.

Methods and limitations

Methods

The evaluation is based on documentary evidence and online interviews with the representatives of Administrative Unit.

The documentary inputs to the evaluation were:

- Evaluation Protocol Evaluation of life sciences in Norway 2022-2023
- Administrative Unit´s Terms of Reference
- Administrative Unit's self-assessment report
- Administrative Unit's impact cases
- Administrative Unit's research groups evaluation reports
- Panel reports from the Expert panels
- Bibliometric data (*NIFU Nordic Institute for Studies of innovation, research and education*)
- Personnel data (*Statistics Norway (SSB)*)
- Funding data – The Research Council´s contribution to biosciences research (*RCN*)
- Extract from the Survey for academic staff and the Student Survey (*Norwegian Agency for Quality Assurance in Education (NOKUT)*)

After the documentary review, the Committee held a meeting and discussed an initial assessment against the assessment criteria and defined questions for the interview with the Administrative Unit. The Committee shared the interview questions with the Administrative Unit two weeks before the interview.

Following the documentary review, the Committee interviewed the Administrative Unit in an hour-long virtual meeting to fact-check the Committee's understanding and refine perceptions. The Administrative Unit presented answers to the Committee's questions and addressed other follow-up questions.

After the online interview, the Committee attended the final meeting to review the initial assessment in light of the interview and make any final adjustments.

A one-page summary of the Administrative Unit was developed based on the information from the self-assessment, the research group assessment, and the interview. The Administrative Unit had the opportunity to fact-check this summary. The Administrative Unit approved the summary without adjustments. ***(Adjust the text if the AU asked for corrections. Include the AU request and explain what adjustments were made).***

Limitations

(Choose one of the three options below and delete the others. Feel free to elaborate slightly if necessary. For example, if you choose option 3, explain the missing information. Note that the Committee can provide detailed feedback and suggestions on improving the evaluation in the Memorandum to the RCN. This section has to remain concise and only summarise whether the information was or was not sufficient.)

(1) The Committee judged the information received through documentary inputs and the interview with the Administrative Unit sufficient to complete the evaluation.

(2) The Committee judged that the Administrative Unit self-assessment report was insufficient to assess all evaluation criteria fully. However, the interview with the Administrative Unit filled gaps in the Committee's understanding, and the information was sufficient to complete the evaluation.
(3) The Committee judged that the Administrative Unit’s self-assessment report was insufficient to assess all evaluation criteria fully, and some information gaps remained after the interview with the Administrative Unit.

Norges forskningsråd
Besøksadresse: Drammensveien 288
Postboks 564
1327 Lysaker

Telefon: 22 03 70 00
Telefaks: 22 03 70 01

post@forskningsradet.no
www.forskningsradet.no

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