

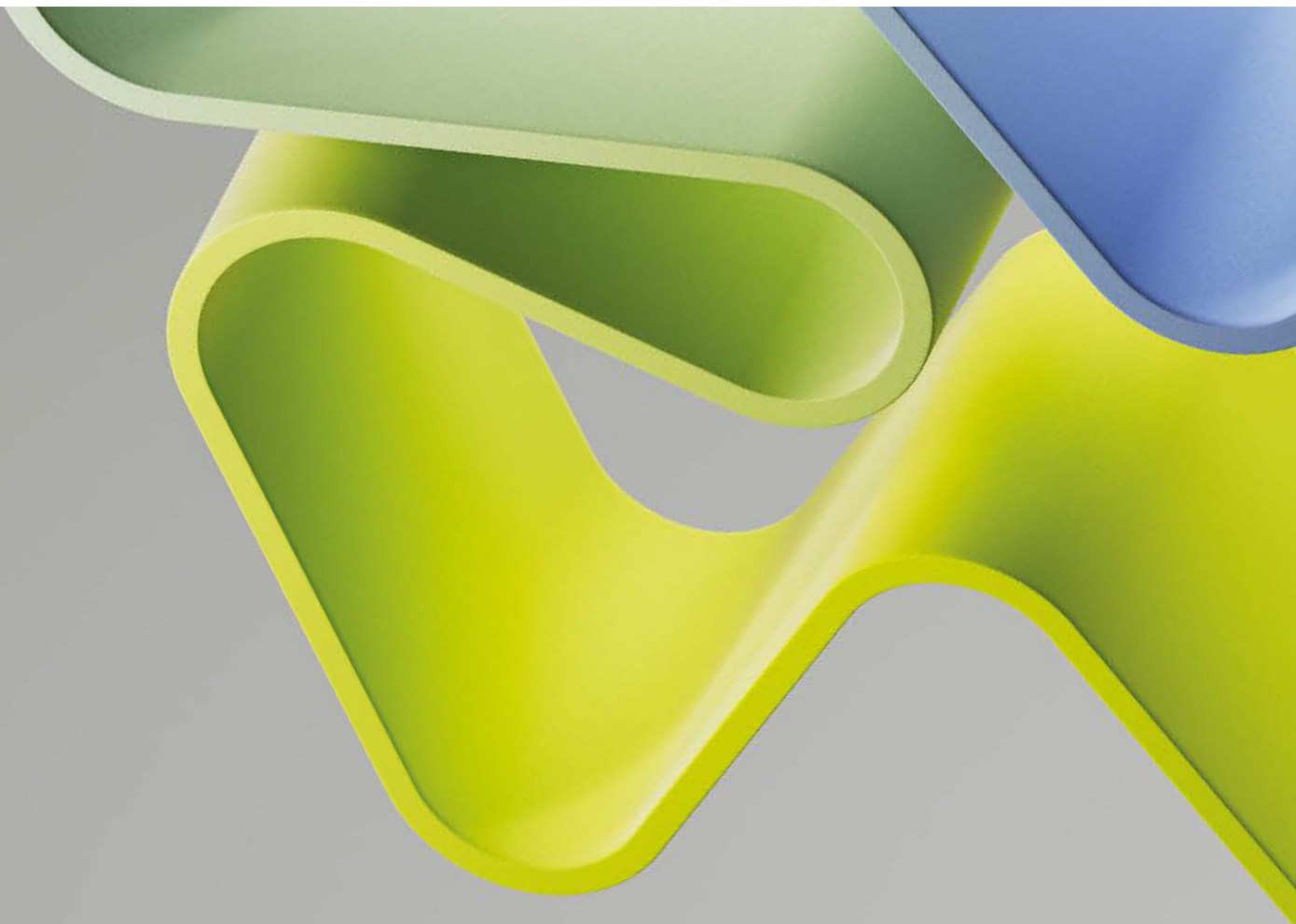
Evaluation of Medicine and Health 2023-2024

Evaluation report – Panel 4b

Research Group: Department of Air Quality and Noise (KMLS)

Administrative Unit: Division of Climate and Environmental Health (KM)

Institution: Norwegian Institute of Public Health (FHI)



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Preface

The Research Council of Norway (RCN) is given the task by the Ministry of Education and Research to perform subject-specific evaluations. The primary aim of the evaluation of medicine and health (EVALMEDHELSE) 2023-2024 is to reveal and confirm the quality and relevance of research performed at Norwegian Higher Education institutions, research institutions (the institute sector) and the health trusts, in an international perspective. Such knowledge is useful for the institutions that participate in the evaluation, for the Research Council who advise the authorities on how research should be developed further, and for the authorities, who set targets and frameworks for research and higher education. Research groups submitted by their administrative unit will be assessed by 18 expert panels organised by research subjects or themes. The expert panels will assess research groups across institutions and sectors based on research group's self-assessments and examples of scholarly output. These research reports will be part of the evaluation of their belonging administrative units.

Abstract

The Department of Air Quality and Noise at the Norwegian Institute of Public Health has been under the Division for Climate and Environmental Health since 2021. The department have several research projects and gives well founded knowledge-based advice to the State departments, directorates, and municipalities on the hazards of tobacco products, indoor- and outdoor air pollution and noise as well as climate change on human health. The department has also a role in the preparedness of Norway towards air borne chemical incidents. The researchers have a 50% advisory role and 50% research tasks. The main receivers of the assessment work and reports are The Norwegian Environment Agency, the Norwegian Directorate of Health, Norwegian Public Roads Administration as well as the Ministry of Health and Care Services and Ministry of Climate and Environment. Regulation of tobacco, air pollution and noise are mainly on a national level. The group has set clear research goals, i.e. conduct research and systematic literature reviews, recognize knowledge gaps, work closely with the ministry, directorates, and municipalities, and supporting policy implementation. To achieve these goals, the group have ambitious but realistic benchmarks. The group is relatively large and has a large basic funding. However, there is only one PhD student and one PostDoc in the group. To ensure that high-quality research is also conducted in the future, these categories should increase. In addition, for the future it is important to recruit researchers with deep knowledge in bioinformatics and statistics to fully exploit the enormous amount of excellent data generated by the department. By increasing the effectiveness in the use of the data, the group will continue to be a very attractive partner in international cooperation projects.

Overall assessment

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.

Grading:

Dimensions	Score
Organisational dimension (How adequate the organisational environment is in supporting the production of excellent research).	4
Quality dimension (Research and publication quality/Research group's contribution)	4/4
Societal impact dimension (Research group's societal contribution/User involvement)	4/3

Recommendations

- The composition of the research group seems to be imbalanced, out of 28 listed personnel the group contains only one PhD student and one PostDoc. To ensure a competitive group in the future it is important to increase these categories.
- The reduction in personnel due to several organizational changes brings a challenge for the group, which means that they must review which tasks they have to prioritize. If this is not done, there is a risk that the quality of each task will drop.
- In order to optimize the use of the excellent infrastructures that the research group uses (e.g. the MoBa cohort), it is important that the necessary competences are present in the group or in the immediate vicinity, for example in the areas of statistics and bioinformatics.

1. Strategy, resources and organisation

1.1 Research group's organisation and strategy

The overall goal of the Department of Air Quality and Noise is to improve the quality of life and reduce the burden of disease caused by environmental factors. The main research goal is clear, aiming to understand and prevent health impact of exposure to environmental factors such as air pollution and noise, and to understand how the built environment and greenness influence the effect of environmental factors such as air pollution and noise on health outcomes. In addition, the group want to understand and prevent the health impact of tobacco and nicotine products and to understand how climate change may impact health. The strategy to obtain the goals is to develop expertise in crucial areas, obtain well-equipped laboratories, increase competence in assessing burden of disease for air pollution and noise, communicating important findings, contribute to education, recruit researchers and students to funded projects, and participate in interdisciplinary research collaborations.

The research group has a long history of lecturing at the University of Oslo (UiO) in Regulatory Toxicology, Human Toxicology, Pharmaceutical toxicology, and at the Norwegian University of Life Sciences (NMBU) in environmental/community medicine and public health. In addition, the group educating and examining master- and PhD students in collaboration with for instance UiO.

The researchers have a 50% advisory role and 50% research tasks, and the group has a relatively large basic funding. Some of the researchers have had part time professor position at UiO. There has been a strategic decision that permanent staff also have to try and sustain part of their salaries through external routes, which is seen as an issue for the Department (e.g. less time spent on research) but strategically this probably means that the level of research stays competitive in an area where funding opportunities are perhaps increasing.

The research group have access to and use several health registries such as: The Norwegian Mother, Father, and Child cohort study (MoBa), NorCohort, CONOR, Cancer registry, and Death registry. This possibility makes the research group as an attractive partner, especially in an international context. In addition, the group collaborates with other research and laboratory units in Norway, such as The Norwegian Center for Stem Cell Research. From the self-assessment, it is clear that members from the research group participate in large-scale international projects, but it is not always clear whether they have a leading role or more of a role where they mainly contribute with existing data.

Taken together, the panel finds that the research group has a clear target image of what it wants to achieve, and they do it in a convincing way. Consequently, the panel thinks they are organized and operating at a high international level.

Recommendation:

This is a strong research group and an attractive partner in large international research collaboration. To ensure a competitive group also in the future it is important to increase the number of PhD students and PostDocs. In addition, several organizational changes bring challenges for the group, which means that they must review which tasks they have to prioritize. To increase and optimize the use the excellent infrastructures that the research group uses (e.g. the MoBa cohort), it is important that the necessary competences is present in the group or in the immediate vicinity, for example in the areas of statistics and bioinformatics.

1.2 Research group's resources

The Department of Air Quality and Noise consists of 6 senior scientists (3 part-time), 11 scientists (2 part-time), 1 senior advisor, 1 head engineer, 3 senior engineers, 1 part-time senior consultant/physician, 1 dep director, 1 PostDoc, 1 PhD, and 2 advisors. The funding portfolio of the research group consists of basic funding (13 600 000 NOK per year), external funding (31 400 000 NOK for the period 2018-2022) from RCN, international funding, and other sources. Sources of R&D funding are RCN, DAM-ExtraStiftelsen, Environmental Directorate/Cicero/FHI, NordForsk. EU, The Health Effect Institute, and AMAC-SEC.

The research group has been affected by several organizational changes which has resulted in a reduction in personnel. Apart from the fact that the group has a small number of PhD and PostDocs the group is well-balanced. In addition, some of the researchers have had part time professor position at UiO. The research group contribute to education by giving lectures in relevant subjects and engaging master students, PhD students as well as postdocs, and recruit researchers and students to funded projects in experimental toxicology and environmental epidemiology.

This is a relatively large group that has existed for a long time and has shown to create great experience and knowledge in its research fields, which in turn generates a high reputation both nationally and internationally. This is obvious via all international collaborations. The research group works within clear frameworks, and they belong to an institute with very good infrastructure.

Recommendation:

The big challenge for this research group going forward will be to ensure that competence is preserved even if the number of members in the research group continues to decrease. The panel recommends the research group takes steps to address this challenge.

1.3 Relevance to the institution

The Department of Air Quality and Noise (KMLS) is part of the Norwegian Institute of Public Health (FHI), an Institute with a great impact on Norwegian public health recommendations and policy implementation. The Institute do also have high ambitions in terms of international commitments. The current research group fits well into the Institute's overall tasks and have set clear research goals, i.e. conduct research and systematic literature reviews, recognize knowledge gaps, work closely with the ministry, directorates, and municipalities, and supporting policy implementation. Although organizational changes have resulted in reduced personnel, the research group has a relatively high basic funding from the Institute. This, in combination with the success in obtaining external funding (national as well as international) makes it possible for the research group to remain an attractive partner in large and innovative projects.

Based on the listed facts, the expert panel thinks the research group is very relevant for the organisation.

Recommendation:

The panel has no specific recommendations regarding relevance to the institution.

2. Research quality

2.1 Research group's scientific quality

One of the Department of Air Quality and Noise's stated benchmarks is high-quality scientific publishing and comprehensive and open dissemination of research results and knowledge. From the self-assessment, it is clearly exemplified that studies based on national data is planned and performed by members from the research group. It is also exemplified that members from the group participate in large-scale international projects. However, the lack of first and senior authorship in the international projects clearly indicate that they do not have leading roles, but instead more of a role where they mainly contribute with existing data, which in turn generated a co-authorship.

It is not clear for the panel what the benchmark regarding publishing means in terms of numbers of papers per year and the level of impact factors cannot be deduced from the self-assessment. It is also not clear what will be required to achieve the benchmark regarding first and senior authorship in large-scale international publications.

Overall the panel finds the research quality to be internationally excellent and that the group has played a very considerable role in the research process.

Recommendation

The expert panel recommend the research group to put numbers on what will be required to achieve the benchmarks.

2.2 Research group's societal contribution

Short Description

An important task for the Department of Air Quality and Noise is to give well founded knowledge-based advice to the State departments, directorates, and municipalities on the hazards of tobacco products, indoor- and outdoor air pollution and noise as well as climate change on human health. The main receivers of their assessment work and reports are The Norwegian Environment Agency, the Norwegian Directorate of Health, Norwegian Public Roads Administration as well as the Ministry of Health and Care Services and Ministry of Climate and Environment. Regulation of tobacco, air pollution and noise are mainly on a national level. The self-assessment also mentions the use of non-academic actors and user groups being involved in order to achieve impact, however, they have not explained how they do this.

The group is involved in different European (EEA, JATC) and international (WHO) initiatives to follow, influence and harmonise the work done internationally.

Based on the fact that the research group have established channels with policy teams, enabling them to work towards important societal contributions, the expert panel assesses that the group's commitment regarding societal contribution is very good. The panel also finds that societal partners have considerable involvement in the research process.

Recommendations:

The panel has no specific recommendations on the societal contribution of the group.

Appendices

Evaluation of Life Sciences in Norway 2022-2024

Evaluation of Medicine and Health 2023-2024

Mandate Expert panels

The Research Council of Norway (RCN) is given the task by the Ministry of Education and Research to perform subject-specific evaluations. The Portfolio board for Life Sciences in the Research Council of Norway has decided to carry out an evaluation of medicine and health in 2023-2024 as the second of two evaluations within Life Sciences. The evaluation of biosciences takes place in 2022-2023.

1. The objective of the evaluation

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), by the institute sector and by health trusts.

The results of the evaluation will be used as recommendations to the institutions, the Research Council, and the ministries.

2. Tasks of the expert panels

The panels are requested to:

- evaluate the strategy, resources and organisation of/for the research groups.
- evaluate research production and quality of the research groups.
- grade and write a short evaluation text to the evaluated research groups.

Each of the expert panels will write a brief report with evaluations of the different research groups as well as specific recommendations.

3. Time schedule

Digital panel meetings will take place in the period March 15. - June 15. 2024.

Deadline for submitting panel report to the Research Council: June 15. 2024.

4. Miscellaneous

Other important aspects of Norwegian life sciences research that ought to be given consideration.

EVALMEDHELSE 2023-2024 – Panel group description – January 2024

Panel group	Description	Panel no.
Group 1 PHYSIOLOGY Physiology-related disciplines (human physiology), including corresponding translational research	Anatomy, physiology, embryology, nutritional physiology, pathology, basic odontological research, exercise physiology, neurobiology, toxicology, pharmacology, medicinal chemistry, chemistry, biology, pathology.	Panel 1a Panel 1b
Group 2 MOLECULAR BIOLOGY Molecular Biology, including corresponding translational research	Microbiology, bacteriology, inflammation and infection disease research, forensic medicine, genetics, immunology, vaccine development, microbiological diagnostics, pharmaceutical microbiology, cell biology, molecular medicine and -biophysics, medical biochemistry, omics, organoids, imaging, toxicology, pathology, drug development, cancer research, translational research, systems biology, personalized medicine, biomarkers, oncology, genetics, genomics, epigenetics, proteomics, bioinformatics-/statistics, computational science, AI, biology, virology, radiology, ionisation, molecular biology, microbiology, pharmacology, pharmacogenomics, regenerative medicine and related subjects.	Panel 2a Panel 2b Panel 2c
Group 3a CLINICAL RESEARCH	Clinical Research, including surgery and translational research within: paediatrics, women's health, gynaecology, otorhinolaryngology, head and neck surgery, oncology, haematology, radiology and medical imaging.	Panel 3a_1 Panel 3b_2
Group 3b CLINICAL RESEARCH	Clinical Research, including surgery and translational research within: general medicine, emergency medicine, anaesthesiology, neurology, geriatric medicine, rehabilitation medicine, cardiology, nephrology/urology, endocrinology, pulmonary medicine, orthopaedics, rheumatology, Infection, gastroenterology.	Panel 3b_1 Panel 3b_2 Panel 3b_3
Group 4 PUBLIC HEALTH Public Health and Health-related Research	Public health, community research, epidemiology, preventive medicine, mental health, behavioural research and ethics, medical statistics, environment, nutrition, preventive medicine, physiotherapy, sports medicine, implementation research, public health, health care services research, global health, nursing	Panel 4a Panel 4b Panel 4c

	sciences, rehabilitation sciences, public health systems, digital health care services, ICT, HTA, health competence, genetic and epigenetic epidemiology, non-communicable diseases, pharmacology, nursing research, professional research, occupational medicine.	Panel 4d Panel 4e Panel 4f
Group 5 PSYCHOLOGY Psychology and Psychiatry	Clinical psychology, personality psychology, developmental psychology, cognitive psychology, biological psychology and forensic psychology, psychiatry, including geriatric psychiatry, child and adolescent psychiatry and biological psychiatry, social-, community- and workplace psychology, organizational psychology, developmental psychology, behavioural and health psychology, health promotion and well-being.	Panel 5a Panel 5b

Panel group 4 PUBLIC HEALTH

Expert panel 4b

Name	Title	Institution
Marianne van der Sande (chair)	Professor	Institute of Tropical Medicine Antwerp
Baukje de Roos	Professor	University of Aberdeen
Lars Rylander	Professor	Lund University
Anders Stålmán	Docent	Karolinska Institutet

Baukje de Roos had a conflict of interest with the evaluation of the Department of Nutritional epidemiology at the University of Oslo (report 13) and Lars Rylander had a conflict of interest with the Department of Food Safety (KMMT) at the Norwegian Institute of Public Health (report 1). This meant that for those evaluations they did not have access to the self assessments or survey data and they did not participate in the discussion of the research group, nor did they participate in the preparation and completion of the evaluation report.



Evaluation of Medicine and Health (EVALMEDHELSE) 2023-2024

Self-assessment for research groups

Date of dispatch: **15. September 2023**

Deadline for submission: **31. January 2024**

Updated: **13. October 2023**

Institution (name and short name): _____

Administrative unit (name and short name): _____

Research group (name and short name): _____

Date: _____

Contact person: _____

Contact details (email): _____

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Short version

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 a research group. The self-assessment contains questions regarding the group's research- and innovation related activities and developments over the years 2012-2022. All submitted data will be evaluated by expert panels.

Deadline for submitting the self- assessment to your administrative unit – 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 submit completed self- assessment to the administrative unit no later than 26 January 2024.

Please use the following format when naming your document: [short name of the institution]_[short name of the administrative unit]_[short name of the research group], e.g. *UiT_DepPsy_Short name of the research group*.

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 link to websites/documents in the self-assessment where relevant.
- Please be sure that all documents linked to in the self- assessment are written 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 the two evaluation criteria described in the evaluation protocol, the research group must answer all questions.
 - ⇒ Provide information – provide documents and other relevant data or figures about the research group, for example strategy and other planning documents, as well as data on R&D expenditure, sources of income and results and outcomes of research
 - ⇒ Describe – explain and present using contextual information about the research group and inform the reader about the research group.
 - ⇒ Reflect – comment in a reflective and evaluative manner how the research group operates.
- Data on personnel should refer to data reported to DBH on 1 October 2022 for HEIs and to the yearly reporting for 2022 for the institute sector and the health authorities. Other data should refer to 31 December 2022 if not specified otherwise.
- It is possible to extend the textboxes when filling in the form. **NB!** A completed self- assessment form cannot exceed 25 pages (pdf file). Expert panels are not requested to read more than the maximum of 25 pages. Pages exceeding maximum limit of 25 pages **might not** be evaluated.
- Submit the self- assessment as a pdf (max 25 pages) to the administrative unit within **26 January 2024**. Before submission, please be sure that all text are readable after the conversion of the document to pdf. The self- assessment should be sent from the administrative unit to evalmedhelse@forskningsradet.no within **31 January 2024**.

Please note that information you write in the self assessment and the links to documents/websites in the self-assessment are the only available information for the expert panel.

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

1. Organisation and strategy

1.1 Research group's organisation

Describe the establishment and the development of the research group, including its leadership (e.g. centralised or distributed etc.), researcher roles (e.g. technical staff, PhD, post docs, junior positions, senior positions or other researcher positions), the group's role in researcher training, mobility and how research is organised (e.g. core funding organisation versus project based organisation etc.).

Table 1. List of number of personnel by categories

Instructions: Please provide number of your personnel by categories.

For institutions in the higher education sector, please use the categories used in DBH, <https://dbh.hkdir.no/datainnhold/kodeverk/stillingskoder>. Please add new lines or delete lines which are not in use.

	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 Personnel by position	Position A (Fill in)				
	Position B (Fill in)				
	Position C (Fill in)				
	Position D (Fill in)				

1.2 Research group's strategy

a) Describe the research group's main goals, objectives and strategies to obtain these (e.g. funding, plans for recruitment, internationalization etc.) within the period 2012-2022.

b) Please describe the benchmark of the research group. The benchmark for the research group should be written by the administrative unit in collaboration with the research group. The benchmark can be a reference to an academic level of performance (national or international) or to the group's contributions to other institutional or sectoral purposes.

Example: A benchmark for a research group is related to the research groups' aim which again is included in the strategy for the administrative unit. A guidance for the administrative unit to set a benchmark for the research group(s) can e.g. be: What do the administrative unit expect from the research group(s)?

c) Describe the research group's contribution to education (master's degree and/or PhD).

d) Describe the support the host institution provides to the research group (i.e., research infrastructure, access to databases, administrative support etc.).

1.3 Relevance to the institutions

Describe the role of the research group within the administrative unit. Consider the research group's contribution towards the institutional strategies and objectives, and relate the research group's benchmark to these.

1.4 Research group's resources

Describe the funding portfolio of the research group for the last five years (2018-2022).

Table 2. Describe the sources of R&D funding for the research group in the period 2018-2022.

	2018 (NOK)	2019 (NOK)	2020 (NOK)	2021 (NOK)	2022 (NOK)
Basic funding					
Funding from industry and other private sector sources					
Commissioned research for public sector					
Research Council of Norway					
Grant funding from other national sources					
International funding e.g. NIH, NSF, EU framework programmes					
Other					

1.5 Research group's infrastructures

Research infrastructures are facilities that provide resources and services for the research communities to conduct research and foster innovation in their fields. [These](#) include major equipment or sets of instruments, knowledge-related facilities such as collections, archives or scientific data infrastructures, computing systems communication networks. Include both internal and external infrastructures.

- a) Describe which national infrastructures the research group manages or co-manages.
- b) Describe the most important research infrastructures used by the research group.

1.6 Research group´s cooperations

Table 3. Reflect on the current interactions of the research group with other disciplines, non-academic stakeholders and the potential importance of these for the research (e.g. informing research questions, access to competence, data and infrastructure, broadening the perspectives, short/long-term relations).

<p>Interdisciplinary (within and beyond the group)</p>	<p>About 1/3 page</p>
<p>Collaboration with other research sectors e.g. higher education, research institutes, health trusts and industry.</p>	<p>About 1/3 page</p>
<p><u>Transdisciplinary</u> (including non academic stakeholders)</p> <p><i>Transdisciplinary research involves the integration of knowledge from different science disciplines and (non-academic) stakeholder communities with the aim to help address complex societal challenges.</i></p>	<p>About 1/3 page</p>

2. Research quality

2.1 Research group's scientific quality

Describe the research profile of the research group and the activities that contribute to the research group's scientific quality. Consider how the research group's work contributes to the wider research within the research group's field nationally and internationally.

Please add a link to the research group's website:

Short version

Table 4. List of projects

Instructions: Please select 5-10 projects you consider to be representative/the best of the work in the period 1 January 2012 – 31 December 2022. The list may include projects lead by other institutions nationally or internationally. Please delete tables that are not used.

Project 1 -10: <i>Project title/Project period (year from – year to)</i>	Project owner(s) (project leaders organisation)	
	Total budget and share allocated to research group	
	Objectives and outcomes (planned or actual) and link to website	

Table 5. Research group's contribution to publications

Instructions: Please select 5-15 publications from the last 5 years (2018-2022) with emphasis on recent publications where group members have a significant role. **If the publication is not openly available, it should be submitted as a pdf file attached to the self-assessment.** We invite you to refer to the Contributor Roles Taxonomy in your description: <https://credit.niso.org/>.

Cf. Table 1. List of personell by categories: Research groups up to 15 group members: 5 publications. Research groups up to 30 group members: 10 publications. Research groups above 30 group members: 15 publications.

Please delete tables that are not used.

Publication 1 -15: <i>Project title/Journal/Year/DOI/URL</i>	Authors (Please highlight group members)	
	Short description	
	Research group's contribution	

Table 6. Please add a list with the research group's monographs/scientific books.

Please delete lines which are not used.

1	Title - Authors (Please highlight group members)- link to webpage (if possible)
2	

2.2 Research group's societal contribution

Describe the societal impact of the research group's research. Consider contribution to education, economic, societal and cultural development in Norway and internationally.

Table 7. The research group's societal contribution, including user-oriented publications, products (including patents, software or process innovations

Instructions: Please select 5–10 of your most important user-oriented publications or other products from the last 5–10 years with emphasis on recent publications/products. For each item, please use the following formatting. Please delete lines which are not used.

3. Challenges and opportunities

Information about the strengths and weaknesses of the research group is obtained through the questions above. In this chapter, please reflect on what might be the challenges and opportunities for developing and strengthening the research and the position of the research group.

Short version



Scales for research group assessment

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

Score	Research and publication quality	Score	Research group's contribution Groups were invited to refer to the Contributor Roles Taxonomy in their description https://credit.niso.org/
5	Quality that is outstanding in terms of originality, significance and rigour.	5	The group has played an outstanding role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
4	Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence.	4	The group has played a very considerable role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
3	Quality that is recognised internationally in terms of originality, significance and rigour.	3	The group has a considerable role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
2	Quality that meets the published definition of research for the purposes of this assessment.	2	The group has modest contributions to the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
1	Quality that falls below the published definition of research for the purposes of this assessment.	1	The group or a group member is credited in the publication, but there is little or no evidence of contributions to the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.

Societal impact dimension

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.

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