

# **Evaluation of Life Sciences 2022-2024**

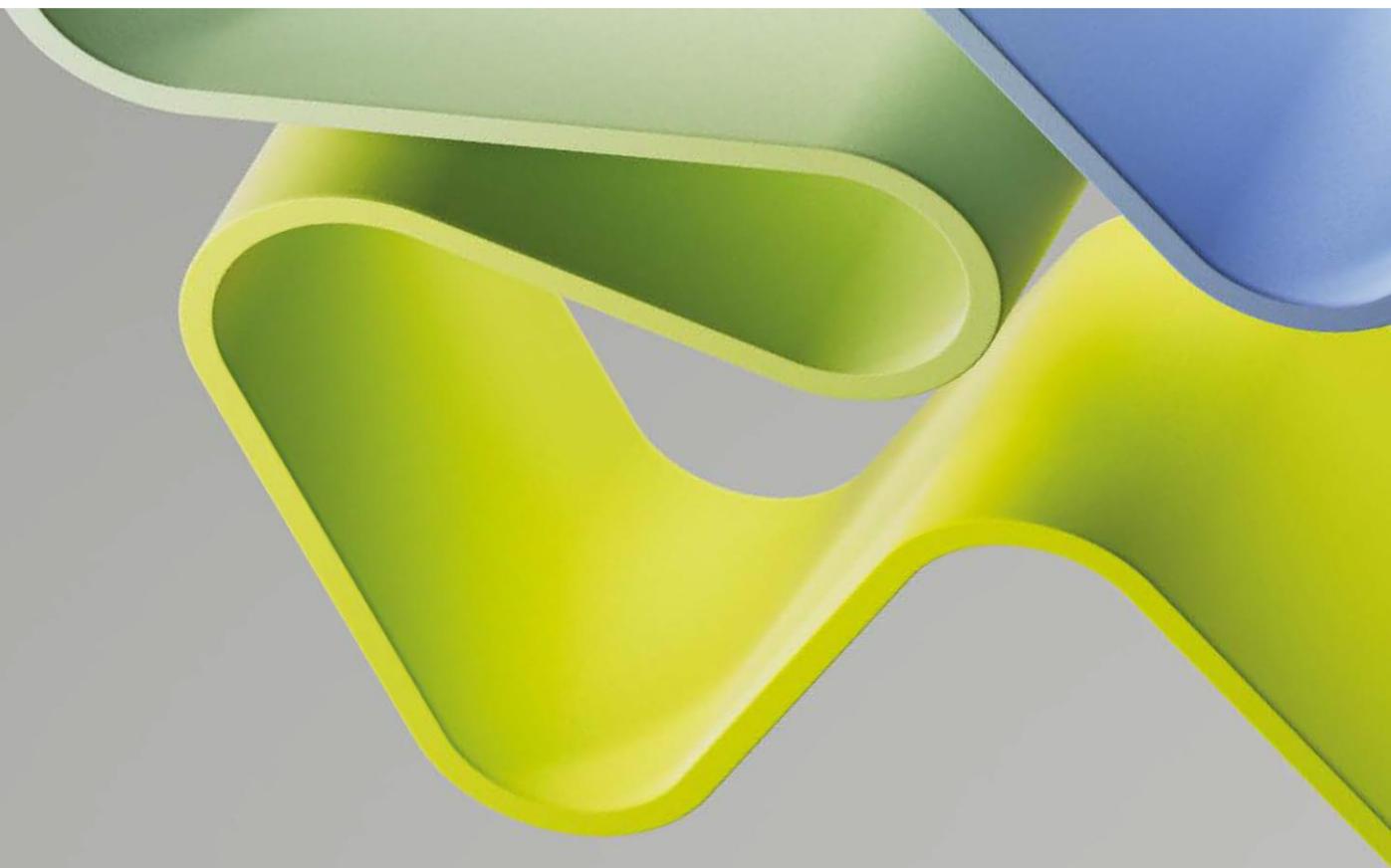
## **Evaluation of Biosciences 2022-2023**

### **Evaluation report – Administrative unit**

#### **Faculty of Environmental Sciences & Natural Resource Management (MINA)**

#### **Norwegian University of Life Sciences (NMBU)**

December 2023



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# Statement from Evaluation Committee 1 (Higher Education Sector)

This report is from Evaluation Committee 1 which evaluated the following administrative units representing the higher education sector in the Evaluation of Biosciences 2022-2023:

- Faculty of Environmental Sciences and Natural Resource Management (MINA), NMBU
- Faculty of Veterinary Medicine (VET), NMBU
- Department of Biology (IBI), NTNU
- Faculty of Science and Engineering, UiA
- The Department of Natural History, NTNU
- University Museum of Bergen (UM), UiB
- Natural History Museum (NHM), UiO
- The Arctic University Museum of Norway, UiT

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 and the National Teacher Survey (Norwegian Agency for Quality Assurance in Education [NOKUT]). The digital interviews took place in Autumn 2023.

This report is the consensus view from committee 1. All members of the committee have agreed with the assessments, conclusions and recommendations presented here.

Evaluation committee 1 consisted of the following members:

Professor/dean  
**Marianne Holmer (chair),**  
University of Southern Denmark

Professor/chair  
**Alan Dobson,**  
University College Cork

Research group leader  
**Felicity Jones,**  
The Friedrich Miescher Laboratory

Professor/section manager  
**Jan Tind Sørensen,**  
Aarhus University

Professor/ head  
**Kjell Arne Johanson,**  
The Swedish Museum of Natural  
History

Professor  
**Martin Polz,**  
University of Vienna

Ass. Professor/head  
**Natasha Louise de Vere,**  
University of Copenhagen

Ivette Oomens, Principal Consultant, Technopolis Group, was the committee secretary.

*Oslo, December 2023*

# Profile of the administrative unit

In 2021, MINA had 196 employees, out of which 53 were professors, 25 associate professors, nine permanent and 15 temporary researchers, 43 PhD-scholars, 13 post doctors and 38 technical and administrative staff. The gender ratio among professors and researchers was male biased with 29.2% and 33.3% being women in these categories in 2021. Among PhD-scholars the ratio was female-biased with 70.2% being women in 2021.

MINA consists of four academic sections: Ecology and Natural Resource Management, Renewable energy and forest sciences, Environmental Chemistry and Soil and Water Section. These are supported by a section of research technicians and an administrative section.

In its strategy document 2018-2022, MINA identifies six focal areas of research. These include: to be internationally recognised for its research quality, to be leading in Norway in its field, to increase its project portfolio, especially regarding the EU, and strengthen areas with potential for external funding, to be at the forefront with new methods, models and technical tools, to cooperate with commercial partners and to deliver at least 20 PhDs per year. In relation to this, MINA has for example had an increase in externally funded activity and well-established links with the main actors in relevant sectors. Moreover, regarding being internationally recognised for its research quality MINA states that well-qualified opponents are easily recruited for PhD-defences who in turn judge 75% of theses as very good or excellent. However, MINA has not been able to meet the target of delivering at least 20 PhDs per year; between 2017-2021 for which the figure was 15.4 per year.

As a higher education institution, MINA strives to reach the four overall goals of Norwegian Higher Education Institutions. MINA mentions in its self-assessment that it has specific development objectives to develop interdisciplinarity as an overall supporting principle for research, education and innovation, an increased common use of Campus Ås and its infrastructures and to focus on cooperation between NMBU and UiO. Furthermore, MINA adds that the environmental and societal problems they study results in interdisciplinary work and that they are involved in many internal NMBU seedling projects. MINA also mentions it has a long track-record of cooperation with UiO in relevant fields and points out that it is a host or co-host of two RCN Centres for Research Innovation (SFIs) where cross-campus cooperation is paramount. Finally, MINA has a century-long history of cooperation with the neighbouring Norwegian Institute of Bioeconomy Research (Nibio) within Soil & Water Sciences and Forest Sciences.

Based on MINA's self-assessment, future research focus is likely to be on topical subject areas studying nature and the environment (biotic and abiotic factors, ecosystems), management and value creation based on renewable resources, and effects of human activity on nature. MINA aims to uphold its strong culture for research that is published in internationally recognised channels. MINA is likely to be able to capitalise on its tradition of good national networks and well-developed international collaborations within these research areas as well.

## Overall assessment

The Faculty of Environmental Sciences & Natural Resource Management (MINA) at the Norwegian University of Life Sciences (NMBU) was established in 2018 through the merger of the Department of Environmental Sciences and the Department of Ecology & Natural Resource Management.

The overall assessment considering the Terms of Reference provided by the administrative unit is that as an administrative unit, MINA has some outstanding strengths - at the time of the merger a strong strategic plan was written with clear vision and goals for the newly formed faculty. The time horizon of this strategic plan has since expired and needs to be updated. The faculty is well structured, subdivided into four academic sections with focused research themes that ameliorate the costs of what would otherwise be a very broad faculty. Little information was provided regarding the governance structure and how resources are distributed among the academic sections.

MINA produces research that is internationally recognised, competitive, often excellent, and in some groups outstanding in terms of significance. While research quality varies across the groups, there are some highly successful research teams in MINA, including a Centre of Excellence in Environmental Radioactivity, and competitive external grants have been awarded to several research groups. In contrast, the research quality of some academic sections is not yet reaching the strategic goal of being internationally recognised and leading Norway in research production. The extent of interactions among research groups in the four academic sections is unclear, and the share of external funding across principal investigators is relatively low.

In an era of rapid human-induced environmental change, MINAs broad and applied research expertise is highly relevant and extremely valuable to society. This outstanding societal relevance was clearly demonstrated in the five impact cases provided. While MINA supports both open science policies and fosters community engagement in a number of their projects, it is unclear whether this is tracked or quantified over time and across the breadth of the administrative unit.

The future prospects of MINA have the potential to be outstanding if this maturing administrative unit puts concerted effort to capitalise on and consolidate its strengths and increase funding to support more PhD students.

The evaluation committee finds MINA to have a strongly supportive organisational environment that fosters internationally excellent research of considerable importance and relevance to society.

## Recommendations

The evaluation committee has several recommendations for MINA. Its excellent vision and strategy document should be updated with a new vision beyond 2023. Beyond listing goals, this should additionally articulate specific mechanisms by which goals can be achieved, and the criteria and timeline by which the effectiveness of these mechanisms can be assessed. MINA should consider including strategic goals that recognise, facilitate and support diversity in the workplace and address the existing gender bias at higher paygrades. Incorporation of a transparent governance structure and resource allocation among academic sections into the strategic plan would also cultivate a supportive working culture. The evaluation committee recommends MINA put together a forward-facing plan for recruitment that both addresses expertise gaps caused by upcoming staff retirement in the coming years, as well as gender bias and that fosters diversity.

The organisation of MINA is relatively top heavy with many associate/full professors relative to PhD and postdoctoral researchers. Incentive schemes to encourage uptake and increase the number of PhD students should be planned for MINA to reach its stated goal of 20 PhDs per year. The evaluation committee recommends MINA to consider training components for students that help foster language and cultural integration and the establishment of networks and industry connections (e.g. industry placements, language/cultural integration courses). MINA may also consider outreach to attract Nordic applicants to the faculty.

The amount of external funding across 62 FTE Associate/Full Professors is low and likely constrains the administrative unit's ability to achieve its goal of leading Norway in research production that is internationally recognised. MINA should be proactive in exploring mechanisms by which external funding can be increased (e.g. incentives to apply for funding, diversifying funding sources and large collaborative grant schemes).

As a large administrative unit MINA should support and foster the strategic goals of existing successful research groups and encourage development and implementation of similar strategic goals tailored for each academic section. Ensuring these strategic goals are aligned with the broader administrative unit and university strategic plan and establishing accountability and critical assessment of progress towards these goals will drive MINA towards an internationally recognised outstanding research institution in Norway.

## 1. Strategy, resources and organisation of research

MINA has an excellent strategy (2018-2023) that needs to be updated. Now five years since the merger, MINA's future strategic plan should describe a vision that both consolidates its strengths and outlines a new direction for the administrative unit. The new strategic plan should not just articulate goals, but also mechanisms that will facilitate reaching these goals and criteria to determine if the mechanisms are working.

MINA is made up of four academic sections spanning Environmental Chemistry, Soil & Water Sciences, Renewable Energy & Forest Science, Ecology & Natural Resource Management. It hosts a Centre of Excellence (SFF CERAD), coordinates a Centre of Research Innovation (SFI earthresQue), is a main partner in SFI SmartForest, a partner in the Centre for Environmentally Friendly Energy Research (FME Bio4Fuels), and hosts a principal investigator in an European Horizon Project SiEUGreen. The division of MINA into four academic sections is sensible given the large administrative unit size. Inclusion of a transparent governance structure and plan for allocation of resources across academic sections and core facilities will ensure smoother operations of this large administrative unit. MINA is top heavy, and a hiring plan should be made to strategically fill expertise gaps arising from retirement with gender-balancing hires. Incentives to encourage and support principal investigators to take on more PhD students should be considered to reach MINA's strategic goal of 20 PhD graduates per year.

The research quality across sections ranges from very good to excellent/outstanding with a number of competitive externally funded grants. Despite this, the overall level of external funding is low, and plans should be made to expand and diversify funding sources. As an administrative unit, MINA should encourage each academic sub-section to both establish and evaluate progress towards section-specific focal strategic plans that are aligned with MINA's broader strategy.

## 1.1 Research Strategy

MINA should be commended on their clear research strategy (established early in their formation and outlined in their 2018-2022 strategic plan). Its vision is for MINA to play a key role in knowledge production & dissemination in the areas of environmental science, nature management and green value creation. The broad research scope spanned by MINA addresses important topics for society – especially in the face of unprecedented human-induced environmental change. MINA highlights five scientific areas of priority within this vision and six research and innovation goals across these priority areas: to be internationally recognised for research quality, leading Norway in the field, increase the administrative unit's research portfolio, being at the forefront of new innovations, establish cooperations with commercial sector, and graduate at least 20 PhD candidates per year.

It is notable that the administrative unit's strategy document (2018-2022 timeframe now expired) is primarily a list of aims and goals and lacks structures and concrete mechanisms to achieve these goals. While not explicitly described in the self-assessment and associated documents, during the interview session MINA was able to provide descriptions of specific mechanisms in place that help achieve its strategic goals (e.g. implicit and explicit strategies to encourage and secure external funding). It is unclear how often these mechanisms are evaluated in terms of effectiveness in moving MINA towards their strategic goals.

MINA is actively working on its next strategic plan which has a shorter timeline through to 2025. The evaluation committee encourages MINA to further enhance its strategic plan by outlining specific mechanisms to facilitate achieving its goals, complete with benchmarks/criteria to evaluate the utility of these mechanisms for reaching its goals. This will provide a clear framework that can be amended and updated over time as MINA progresses towards its goals.

The evaluation committee encourages the MINA to support the four academic subsections in developing, implementing, and assessing their own more focal strategic goals as a means to foster and elevate research quality across the entire administrative unit.

## 1.2 Organisation of research

MINA is a large administrative unit. Across four productive and successful academic sections (Environmental Chemistry, Soil & Water Sciences, Renewable Energy & Forest Science, Ecology & Natural Resource Management) MINA's members include 62 FTE Associate/Full Professors, approximately 18 FTE research support staff, and a high number of technical/administrative (36 FTE). MINA has several bachelor and master programmes, and in 2021 was training approximately 41 FTE PhD students and 13 FTE postdoctoral scholars. MINA is supported by technical services spanning 5 core areas, IT, library, and administrative support.

In individual assessments, the organisation of research within each of the four academic sections was found to be sound and well structured, with larger sections subdivided into smaller groups led by principal investigators (e.g. Renewable Energy and Forestry Sciences). Each academic section has a broad research breadth that fosters collaboration and interaction with both internal and external researchers and provides ample room for expansion of expertise. These benefits are weighed against the risk that comes with specific disciplines being represented by only one researcher and a lack of "critical mass" that is typically required to maintain a leading research position in the field. As upcoming retirements

occur, careful planning of recruitment to fill expertise gaps and bolster existing strengths should be made.

The organisation of the infrastructure used by the academic sections may be “at risk” due to fluctuations in availability of external funding and strong competition for large-scale internal funding (e.g. this was discussed by the expert panel assessment of Ecology and Natural Resource Management section). A common theme across all four academic sections is a skewed gender balance towards men in higher (e.g. Professorial) positions, and a relatively top-heavy structure with few PhD and postdoctoral researchers relative to Associate and Full Professorships.

In general, the structure of MINA as an administrative unit matches their stated research goals well – with the exceptions that MINA is not achieving its goal of 20 PhDs per year (currently only 40 PhD candidates enrolled) and has relatively low levels of external funding given the number of academic staff. Further, the evaluation committee encourages MINA to be proactive in addressing the gender bias in higher positions.

### 1.3 Research funding

MINA should be congratulated on securing funding support for a number of research initiatives, that demonstrate the success of their academic sections. Examples below are of national and international research competitiveness and include:

- Center of Excellence in Environmental Radioactivity (SFF CERAD, ends 2023, Environmental Chemistry Section);
- Center for Research-Driven Innovation (SFI, earthresQue, ends 2028, Soil and Water Science Section);
- Center for Research-Driven Innovation (SFI, smartForest, ends 2028, Renewable Energy & Forest Sciences);
- Center for Environmentally Friendly Energy Research (FME, Bio4Fuels, ends 2024, Renewable Energy & Forest Sciences);
- SiEUGreen, (EU Horizon 2020, ends 2022, Soil and Water Science Section).

The role of the specific research groups in these funded projects has not been well described.

Given the number of faculty, the amount of external funding is quite low (60-70mNOK per year across 62 FTE Assoc/Full Professor, <1-1.12mNOK per principal investigator). The amount of total budget dedicated to research versus infrastructure and other purposes has not been described well, making it difficult to determine how this tight budget affects the day-to-day functioning of the administrative unit versus MINA's ability to achieve its scientific goals.

MINA has identified tight and shrinking budgets, short-term research priority areas by funding agencies, and an uneven sense of urgency to seek external funding as potential threats to achieving their research goals. While specific mechanisms to address this challenge and increase external funding were verbally discussed during the interview (e.g. grant writing support, and incentives such as an extra PhD student position for successful grants), these mechanisms and their efficacy were not explicitly stated in the self-assessment or strategic planning document.

## 1.4 Use of infrastructures

MINA participates in several National Infrastructures (NORTEM – for characterisation of environmental nano/micro particles; NorBioLab – for testing and demonstration within biofuels and energy - participation through FME Bio4Fuels; NorBOL – Norwegian Barcode of Life Network). The academic sections engage with several research infrastructures listed in the Norwegian Roadmap that fall in areas consistent with their respective research topics and are keen to make use of international infrastructure facilities such as the ESRF synchrotron.

Within the NMBU, MINA hosts a section of Technical Services that provides technical infrastructure of across 5 areas including ISOTOPE, Soil, Water, Ecology (Botany/Zoology/Field equipment) and Wood. This structure was implemented to meet the technical and equipment needs of the academic sections in an economically sustainable manner charged as direct costs to the user (TDI model). Challenges in operating internal facilities and infrastructure due to strong internal competition for large-scale research equipment combined with discontinuous external funding were mentioned in one of the expert panel reports (Ecology and Natural Resource Management section). As an administrative unit, MINA could explore ways to expand their support of key infrastructure for research groups (e.g. bridging funding) while also encouraging and supporting applications for equipment grants.

## 1.5 National and international collaboration

MINA does not distinguish between regional, national, and international collaborations in terms of policy. Most academic sections were found to be highly collaborative on the national and international level. It was recommended by the expert panel that the Environmental Chemistry Section could increase international collaborations to increase visibility, recognition and facilitate publishing in higher journals. The evaluation committee recommends MINA to encourage international collaborations across all academic sections to increase international profile, benefit from methods and techniques used abroad and foster international networks that will both attract and facilitate retention of research staff within Norway.

## 1.6 Research staff

MINA is a large and “top-heavy” administrative unit with large numbers of associate and full professors (62FTE) relative to students (41) and postdoctoral researchers (13). Upcoming retirements present an opportunity to both address the existing male gender bias in higher positions as well as strategically bolster research expertise in specific areas. The evaluation committee encourages MINA to plan these recruitments carefully and consider the costs and benefits that may stem from the administrative unit maintaining a broad research span versus building a more focused research specialisation.

MINA identified recruitment of Nordic PhD students to be challenging and a threat to the administrative unit. MINA states it is challenging to recruit international candidates who are willing to stay and integrate into Norwegian society. Given the importance of interaction with industry collaborators, the evaluation committee encourages MINA to articulate and spell out mechanisms by which these challenges can be addressed. For example, this might

include short-term industry placements for PhD students and more active outreach and recruitment efforts to attract Nordic students to pursue a PhD at MINA.

Despite the top-heavy structure, MINA is not achieving its stated goal of graduating 20PhDs per year (currently only 40 PhD candidates enrolled). The evaluation committee encourages MINA to put strategies in place to both encourage recruitment of PhD students through incentives for the research group and/or principal investigator.

## 2. Research production, quality and integrity

Overall, MINA is a large, productive administrative unit with excellent research quality, that is outstanding in some academic sections. This is evident from their success at securing competitive external funding on the national-, and occasionally international-level, and ability to publish their research in well-respected peer-reviewed scientific journals. The CERAD Center of Excellence is a flagship for Norwegian Science that is in the top 10% of comparable national and international research groups.

However, outstanding excellence is not evenly distributed throughout this large administrative unit and some academic sections have not yet reached their stated goal of “leading Norway in their field”. These academic sections should improve their publication quality and secure large, competitive, external funding. Establishing national and international collaborations will help increase awareness of the research section's profile and should be further encouraged. Finally, the evaluation committee encourages each of the academic sections to set and strive to achieve their own specific strategic goals (while ensuring these goals follow and are consistent with the broader administrative unit's overarching strategy). This might include specific goals such as focusing on staff development, international collaborations, exchanges, and networks, and publishing in high profile journals.

### 2.1 Research quality and integrity

#### **Ecology and Natural Resource Management group at NMBU**

This is clearly an important research group both within NMBU and at the national level in Norway. The “current” strategic research plan was for the period 2018-22. The group would benefit from a renewed strategy that targets greater societal engagement and stakeholder involvement in the other areas where it is strong beyond Nature-based tourism. The group has developed excellent international linkages that could probably leverage more mobility and diverse mentoring for early career scholars than what the expert panel found evidence for in the self-assessment. That said, the group does take a leading role in the solid research and publications listed as outputs. The expert panel felt the group could aim even higher with its large number of senior scholars.

There is evidence that the group's broad mission to be excellent in basic ecology and natural resource management has been successful in several respects. They mentor more than 20 PhD students and 7 postdocs. They are successful at acquiring external funding, and have a solid publication platform, however, an ample representation of high-impact publications appears to be missing. The research group has a clear strategy, which should be updated, and the goals are described as strategy statements, which was appreciated.

They appear to have a strong collaborative network and can likely expand this further without too much difficulty.

The expert panel felt that the group could aim for more stakeholder engagement, including stronger collaboration with hunting/herding communities in subarctic/boreal ecosystems on the Norwegian mainland, and not just Svalbard. Increased linkages between the natural and social sciences could enhance the quality and impact of what is already a solid publication record.

### **The Environmental Chemistry Section**

The group is clearly strong as a Centre of Excellence. This is reflected in a clear strategy and focus and well-resourced group. However, the subcomponents of the strategy need unpacking e.g. staff development, links with international groups. This would support higher impact journal papers which is an area of weakness. Enhancing social science research may be another way of achieving this.

### **NMBU Renewable Energy and Forest Science Section**

The group addresses key topics for Norway. The output is good in terms of quality and relevance of scientific publications, and the stakeholder and policy makers' benefit of the research is evident for the topic area, but unfortunately poorly described in the self-assessment report. There is a good prioritisation of topics addressed. At the same time, the self-assessment gives little detail on the organisational arrangements and the ways in which co-design of research and interaction with stakeholders takes place, making it hard for the evaluation panel to judge the merits.

### **Soil and Water section**

#### Strengths

- Evidence for international level expertise in field- and laboratory-based analyses
- Institutional support is used in an optimal manner
- Solid, high-quality research output across disciplines
- Large cohort of PhD candidates trained
- Clear leadership in large and high-profile national and international projects
- The group has a strong commitment to work at the interface between basic and applied research and to collaborate with academic and non-academic partners

#### Weaknesses

- Benchmarks are rather modest and could be formulated more focused
- It is not clear how PhD students and early career researchers are trained and mentored
- The group's role in EarthresQue is not clear and so is the interaction with non-academic project partners

## 2.2. Open Science

The administrative unit has a seemingly functional but relatively poorly described open science policy: publishing open access formats for both data and papers as much as financially feasible and providing funding support for open science publishing when necessary.

Some areas of research conducted at MINA lend themselves well to community and industry engagement and efforts are made to engage citizen stakeholders in the research projects and results.

The evaluation committee encourages MINA to both track and quantify open access publishing and data deposition and make efforts to monitor the extent of community and/or society engagement across projects within the administrative unit. The evaluation committee recommends MINA to explore university and nation-wide systems that can both facilitate monitoring of open access and encourage uptake of this within the faculty.

## 3. Diversity and equality

MINA proudly reports 1/3 staff to have non-Norwegian background (up to 50% among PhD/postdocs). Yet lack of trainees with Norwegian culture or willingness to integrate into Norwegian society is described as a threat in the SWOT analysis. It is understandable that career paths in NMBU industry are likely to require both Norwegian language skills and industry networking links. For this reason, the evaluation committee strongly recommends MINA incorporate specific strategic plans to help their PhD students meet these needs. For example, this might include schemes such as mandatory industry placements, integration and language classes, as well as establishing international student exchange/networks that encourages mobility between countries with similar research focus and strengths. The evaluation committee also recommends MINA to consider and articulate the benefits that can be gained from a diverse workplace.

It is notable that the MINA strategy document lacks both a goal to foster diversity and an aim to address the skewed gender composition at the higher professorial pay grades. These should be addressed and include a planned timeline to achieve gender balance.

## 4. Relevance to institutional and sectorial purposes

In the self-assessment, MINA describes longer-term research-related objectives of high quality in education and research, and research and education for economic prosperity (velferd), value creation (verdiskaping) and innovation (nyskaping). Additionally, MINA describes development objectives to develop interdisciplinarity as an overall supporting principle for research, education and innovation, cooperation between NMBU and UIO, and common utilisation of infrastructure on campus Ås.

MINA has made an excellent effort to achieve these goals - research by MINA has high relevance to sustainable development in society and industry and MINA has an excellent track record of contributing towards the knowledge base in the fields of Environmental Science and Natural Resource Management. MINA has excellent training and mentoring programmes in place, with clear and frequent opportunity for feedback from faculty. Industry career paths may be further strengthened through placement programmes. At present, the number of PhD graduations per year is low relative to the number of Associate/Full Professorships and does not currently meet MINAs strategic goal. Unfortunately, commercialisation of research output from MINA while supported is not well described in the

Self-Assessment document. Beyond case examples, it is not clear if there are specific structures to support/encourage this.

## 5. Relevance to society

As society enters a phase of rapid, human-induced environmental change, environmental scientists and biologists have an important role to play by helping society protect the environment and navigate and solve the challenges we face. By virtue of its areas of research expertise MINA is and will continue to play an increasingly vital role for Norwegian society. In addition to MINAs direct research output, MINA plays a critical role by the training students in this field and associated industries. MINA staff hold important leadership roles as committee experts that inform policy. The five impact case reports provide outstanding examples of the societal relevance of research coming out of MINA.

### **Comments to impact case 1**

Impact case 1 describes research of outstanding social relevance that investigates both the utility and adoption of biochar as a soil enhancer in Zambia. This study investigated methods to make biochar made from corncobs or pigeon-pea, whether this biochar enhanced crop yield and farmer income, and whether the use of biochar on fields was adopted by local farmers. The study is of extremely high societal relevance, incorporating local farmers into the research study, with positive outcomes for those choosing to adopt the method. It is less clear how this research fits into the increasingly large body of literature on the use of biochar as a soil enhancer. Regardless, by improving the livelihood of farmers involved in the study, the work promises to contribute to the increasing adoption of this technique throughout Africa, with immediate benefit to the farmers and the soil on which they farm.

### **Comments to impact case 2**

Impact case 2 describes excellent research that developed a novel method (open population spatial capture recapture) to quantify wild populations of large animals that significantly improves existing methods. The work is broadly relevant to scientists (and the species they study) across the planet as we race to protect existing biodiversity before it is lost. The case study clearly articulates the adoption of the novel method by researchers across the globe to study species as diverse as wolves, bears, boar, and deer. The researchers have disseminated their method and approach in both research articles and as statistical R library. The impact of this work is diverse. It includes better quantification of large animal populations including those at risk and in need of immediate conservation; improved data quality for wildlife management and conservation; development of a new method that enhances scientific knowledge.

**Comments to impact case 3**

Impact case 3 describes a long-running research programme that develops novel methods for the mapping and quantification of forest resources. For more than 20 years the team has been adopting new technologies to get better estimates of forests at different scales. The approaches include technology such as laser scanning, drones, and machine learning and have been adopted to quantify numerous different types of habitats ranging from tropical forests to alpine and tundra treeline. The relevance to society is high with clear benefits for stakeholders. The stakeholders include scientists, who gain improved knowledge about both technology and the natural world, resource and conservation managers who gain a more accurate estimate of the relevant habitat they manage in the face of climate change and threatened species themselves who have an improved chance of survival through improved conservation management. The award of the Swedish Marcus Wallenberg Prize to the lead PI on this work is evidence of its high impact and relevance to society.

**Comments to impact case 4**

Impact case 4 describes excellent work with a great deal of stakeholder engagement that significantly improves community risk management, resilience and recovery following exposure to nuclear radiation. The impact case describes a key insight that in addition to treating the physical effects of environmental radiation on the body, it is equally important to address the societal and psychosocial consequences. The immediate stakeholders that benefit from this work are the communities exposed to environmental radiation. Scientists also benefit through improved understanding of how citizen engagement can enhance the impact of a new societal measure.

**Comments to impact case 5**

Impact case study 5 describes research into the development of a honeybee vaccine against American foulbrood bacterium. It has been carried out by an international team with several ties to NMBU MINA. The work has obvious high impact of outstanding relevance to society. Honeybees are essential pollinators for a significant proportion of our food supply. Yet they face a variety of pathogens that threaten to impact crop yields and global food availability. The honeybee vaccine developed and described in this impact case study protects the bees against one major pathogen. The impact case study describes the science, but comparatively little the community engagement and application of the vaccine.

# Appendices

## List of research groups

| <b>Institution</b> | <b>Administrative unit</b> | <b>Research group</b>  |
|--------------------|----------------------------|--|
| NMBU               | MINA                       | <i>Ecology and Natural Resource Management</i><br><i>Renewable energy and forest sciences</i><br><i>Environmental Chemistry (ESC)</i><br><i>Soil and Water Section (SWS)</i> |

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

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

# Evaluation of Biosciences 2022-2023

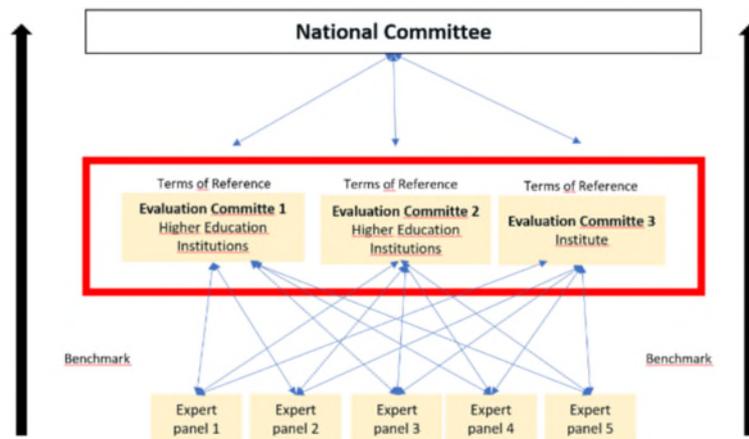
By evaluating Norwegian research and higher education we aim to enhance the quality, relevance, and efficiency. In accordance with the statutes of the Research Council of Norway (RCN), the RCN evaluates Norwegian professional environments to create a solid and up-to-date knowledge base about Norwegian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

The evaluation of life sciences is conducted in 2022 - 2024. The evaluation of biosciences takes place in 2022 - 2023, and the evaluation of medicine and health is carried out in 2023-2024. 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 biosciences (EVALBIOVIT) 2022-2023*

The evaluation of biosciences includes twenty-two administrative units (e.g., faculty, department, institution) which are assessed by evaluation committees according to sectorial affiliation and/or other relevant similarities between the units. The administrative units enrolled their research groups (97) to five expert panels organised by research subjects or themes and assessed across institutions and sectors.

*Organisation of evaluation of biosciences research 2022 - 2023*



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 biosciences 2022-2023:

<https://www.forskningsradet.no/en/analysis-numbers/evaluations/subject-theme/biosciences/>

Til innmeldte administrative enheter til  
fagevaluering av biovitenskap (EVALBIOVIT)

Vår saksbehandler/tlf.  
Hilde D.G. Nielsen/4092 2260

Vår ref.  
21/10653  
Deres ref.

Oslo,  
21.04.2022

## Fagevaluering av biovitenskap (EVALBIOVIT) 2022 – 2023

Vi viser til invitasjonsbrev om å delta i fagevaluering av biovitenskap (EVALBIOVIT) datert 11.11.2021 og til informasjonsmøte med innmeldte administrative enheter 15.12.2021.

Porteføljestyret for livsvitenskap vedtok evalueringsprotokollen for fagevaluering av biovitenskap 05.04.2022 (vedlegg 1). Protokollen beskriver roller, prosesser og ansvarsfordeling i evalueringsarbeidet og er i tråd med forslaget til nytt nasjonalt rammeverk for evaluering av forskning og høyere utdanning utarbeidet i regi av Kunnskapsdepartementet.

Forskningsrådet har mottatt innmelding av 37 administrative enheter til EVALBIOVIT. Disse vil bli fordelt på sektorspesifikke evalueringskomitéer: 1-2 evalueringskomité/er for administrative enheter som tilhører instituttsektoren og 1-2 evalueringskomité/er for administrative enheter som tilhører UH-sektor. Universitetsmuseene vil bli evaluert samlet i én evalueringskomité for UH-sektor. Det skal i tillegg opprettes internasjonale fagekspertpaneler etter faglig eller tematisk likhet på tvers av sektorer. Ekspertpanelene skal evaluere forskergruppene som de administrative enhetene melder inn. Evalueringskomitéene og ekspertpanelene skal vurdere de innsamlede dataene og gi anbefalinger til den enkelte institusjon, til Forskningsrådet og til departementene.

### Tilpasning av mandat (vedlegg 1)

Forskningsrådet ber med dette administrative enheter om å tilpasse mandatet (vedlegg 1) til de lokale forhold ved egen institusjon. Tilpasningen gjøres ved å fylle inn de åpne punktene i malen (Appendix A). Utfylt skjema sendes på epost til [evalbiovit@forskningsradet.no](mailto:evalbiovit@forskningsradet.no) innen 30. september 2022.

### Innmelding av forskergrupper (vedlegg 2a og 2b)

Forskningsrådet ber administrative enheter om å melde inn forskergrupper i tråd med forskergruppedefinisjonen beskrevet i kapittel 1.2 i evalueringsprotokollen. Det bes også om at forskergruppene innplasseres i den tentative fagpanelinndelingen for EVALBIOVIT (vedlegg 2a). Utfylt regneark (vedlegg 2b) sendes til [evalbiovit@forskningsradet.no](mailto:evalbiovit@forskningsradet.no) innen 31. mai 2022.

Forskningsrådet vil ferdigstille panelstruktur og avgjøre den endelige fordelingen av forskergruppene på fagpaneler etter at alle forskergrupper er meldt inn.

### **Invitasjon til å foreslå eksperter (vedlegg 3a og 3b)**

Forskningsrådet inviterer administrative enheter til å spille inn forslag til eksperter som kan inngå i evalueringskomitéene og i ekspertpanelene (vedlegg 3a). Hver evalueringskomité skal bestå av 7-9 komitémedlemmer. Hvert ekspertpanel skal bestå av 5-7 eksperter. Utfylt regneark (vedlegg 3b, fane 1 og fane 2) sendes til [evalbiovit@forskningsradet.no](mailto:evalbiovit@forskningsradet.no) innen 31. mai 2022.

Forskningsrådet v/porteføljestyret for livsvitenskap vil oppnevne leder og medlemmer til evalueringskomitéene og til ekspertpanelene.

### **Data og datainnsamling**

Forskningsrådet har nå ute et oppdrag for analyse av data om personal og forskningsproduksjon. Analysen skal i hovedsak baseres på data i DBH, NIFUs forskerpersonaleregister og Cristin. Analysene vil inkludere indikatorer som skal brukes for evaluering av alle institusjoner.

Videre vil institusjonene få et ansvar for innsamling av data til en egevaluering som skal inngå i vurderingsgrunnlaget for evalueringskomitéene. For å sikre at evalueringen blir nyttig for forskningsinstitusjonenes utvikling, vil Forskningsrådet også invitere institusjonene til å delta i utvelgelse av relevante evalueringsdata og indikatorer som kan danne grunnlag for vurdering opp mot institusjonens egne strategiske mål og sektormål. På bakgrunn av dette har Forskningsrådet en forventning om at institusjonene som deltar i evalueringen stiller med nødvendige ressurser gjennom hele evalueringsprosessen.

Forskningsrådet har, etter en anbudskonkurranse om sekretariatstjenester, inngått en avtale med Technopolis Group som skal bistå Forskningsrådets administrasjon i arbeidet med EVALBIOVIT. Sekretariatet skal blant annet koordinere datainnsamlingen fra institusjonene og systematisere det innsamlede materialet for vurdering i ekspertpaneler og evalueringskomitéer.

### **Endring av administrativ enhet**

For noen få tilfeller kan det være behov for å gjøre noen endringer i forhold til den administrative enheten<sup>1</sup> som allerede er innmeldt til EVALBIOVIT. For eksempel kan et fakultet som ble meldt inn samlet til EVALBIOVIT i desember 2021 finne det mer hensiktsmessig å heller melde inn fakultetets institutter som egne administrative enheter. Hvis man ønsker å endre på den administrative enheten må dette meldes Forskningsrådets administrasjon så fort som mulig, men ikke senere enn 31.05.2022. Melding om endring sendes på epost til: [evalbiovit@forskningsradet.no](mailto:evalbiovit@forskningsradet.no).

### **Informasjonsmøte 9. mai 2022 og nettside for EVALBIOVIT**

Forskningsrådet arrangerer 09.05.2022 kl. 12.00-12.45 et informasjonsmøte for alle som deltar i EVALBIOVIT. Møtet vil foregå digitalt (Zoom). Vi vil i møtet bl.a. gå gjennom evalueringsprotokollen samt at det vil være mulig å stille spørsmål. Påmelding til [evalbiovit@forskningsradet.no](mailto:evalbiovit@forskningsradet.no) innen 07.05.2022.

Forskningsrådet har opprette en egen nettside hvor informasjon om EVALBIOVIT vil bli publisert fortløpende. Lenke til nettsiden finner dere her: <https://www.forskningsradet.no/statistikk-evalueringer/biovitenskap-2022-2023/>.

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<sup>1</sup> Med administrativ enhet menes en organisatorisk enhet på nivå 2 eller 3 i organisasjonsstrukturen til DBH for UH sektor eller NIFUs organisasjonsregister for institutt- og helsesektoren.

Spørsmål som gjelder fagevalueringen kan sendes på epost til [evalbiovit@forskningsradet.no](mailto:evalbiovit@forskningsradet.no) eller ved å kontakte Hilde Dorthea Grindvik Nielsen på epost [hgn@forskningsradet.no](mailto:hgn@forskningsradet.no) /mobil 40 92 22 60.

Med vennlig hilsen  
**Norges forskningsråd**

Ole Johan Borge  
avdelingsdirektør  
Avdeling for helseforskning og helseinnovasjon

Hilde G. Nielsen  
spesialrådgiver  
Avdeling for helseforskning og helseinnovasjon

### **Vedlegg**

1. Evalueringsprotokoll for fagevaluering av biovitenskap 2022-2023
- 2a. Tentativ fagpanelinndeling for evaluering av forskergrupper
- 2b. Skjema for innmelding av forskergrupper
- 3a. Invitasjon til å foreslå eksperter og informasjon om evalueringskomitéer og ekspertpaneler
- 3b. Skjema for å foreslå eksperter til evalueringskomitéer og ekspertpaneler

# **Evaluation of life sciences in Norway 2022-2023**

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**LIVSEVAL protocol version 1.0**

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

|                            |  |
|----------------------------|--|
| <i>Administrative unit</i> | 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. |
| <i>Research group</i>      | 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<sup>1</sup> 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)

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<sup>1</sup> 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<sup>2</sup>

- 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

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<sup>2</sup> <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<sup>3</sup> 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 (RHF) in Norway. They are responsible for the specialist health service in their respective regions. The RHF 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 (HF), 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.<sup>4</sup> The three other main 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,

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<sup>3</sup> [Strategy for a holistic institute policy \(Kunnskapsdepartementet 2020\)](#)

<sup>4</sup> 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.

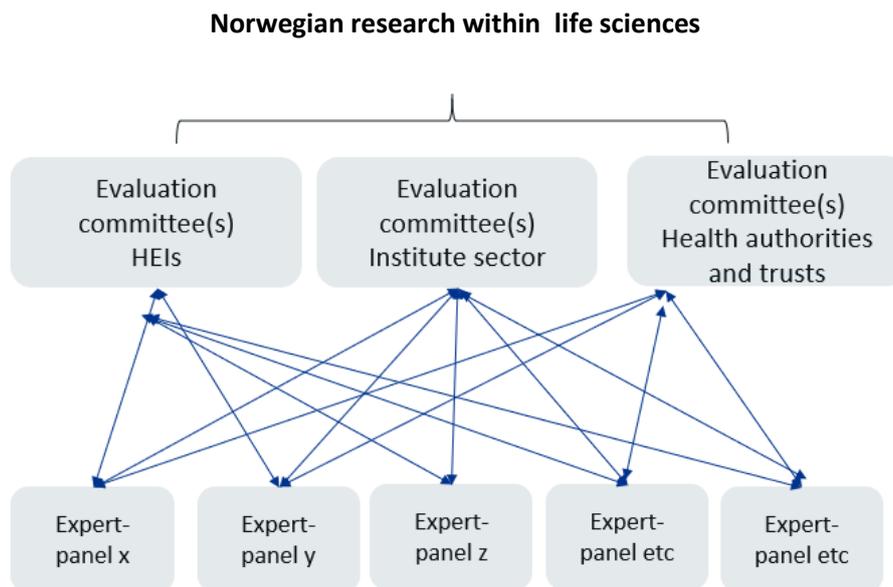


Figure 1. Evaluation committees and expert panels

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

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



**The Research Council  
of Norway**

# EVALBIOVIT

Self-assessment for administrative  
units

Version 1.2

## Overview

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**Institution (name and short name):**

**Administrative unit (name and short name):**

**Date:**

**Contact person:**

**Contact details (email):**

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# 1 Introduction

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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), and by the institute sector. For the life sciences area, research undertaken by regional health authorities and health trusts is also included. 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 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 the past 10 years. All the submitted data will be evaluated by evaluation committees (for administrative units) and expert panels (for research groups). Please read through the whole document including all instructions before answering the questions to avoid overlaps.

As an administrative unit, you are also responsible for collecting the completed self-assessment for each of the research groups that belong to the unit. The research groups need to submit their completed self- assessment to the unit no later than the 1st of December 2022. The unit will submit the research groups' completed self-assessments and the unit's own completed self-assessment no later than the 5th of December 2022.

The whole self-assessment shall be written in English.

Please use the following format when naming your document: name of the institution, and name of the administrative unit, e.g. UiO\_FacBiosci. Send it to [evalbiovit@technopolis-group.com](mailto:evalbiovit@technopolis-group.com) no later than 5th of December 2022.

For questions concerning the self-assessment or EVALBIOVIT in general, please contact RCN's evaluation secretariat at Technopolis Group: [evalbiovit.questions@technopolis-group.com](mailto:evalbiovit.questions@technopolis-group.com).

Many thanks in advance!

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<sup>1</sup> Personal information will be deleted when evaluation reports are published and no later than 30 April 2024

For more information on how Technopolis Group handles data processing, see: <http://www.technopolis-group.com/privacy-policy/>

For more information on how the Research Council of Norway handles data processing, see: <https://www.forskingsradet.no/en/privacy-policy/>

## 2 Self-assessment for administrative units

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Self-assessment guidelines:

- Data on personnel should refer to reporting to DBH on 1 October 2021 for HEIs and to the yearly reporting for 2021 for the institute sector
- Other data should refer to 31 December 2021 if not specified otherwise
- Please read the entire self-assessment document before answering
- Provide information – provide documents and other relevant data or figures about the administrative unit, 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 administrative unit (most often this includes filling out specific forms) and inform the reader about the administrative unit
- Reflect – comment in a reflective and evaluative manner how the administrative unit operates
- 4000 characters including spaces equals one page

### 2.1 Strategy, resources and organisation of research

#### 2.1.1 Research strategy

- 2.1.1.1 Describe the main strategic goals for research and innovation of the administrative unit (1000–4000 characters). How are these goals related to institutional strategies?
- Describe the main fields and focus of research and innovation in the unit
  - Describe how you work to maximise synergies between the different purposes of the 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 long-term research strategy – explain why

#### Form 1 Administrative unit's strategic planning documents

**Instructions:** For each category (Research strategy, Research funding, Cooperation policy, Open science policy) present up to 5 documents that according to you are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then present these documents. Please use the following formatting: Name of document, Years active, Link to the document.

**Example:** Norwegian University of Science and Technology Strategy, 2021–2025, [hyperlink to the document](#)

#### 2.1.2 Organisation of research

- 2.1.2.1 Describe the organisation of research and innovation activities at the unit, including how responsibilities for research and other purposes (education, knowledge exchange, patient treatment, training etc) are distributed and delegated (500–1500 characters).

#### Form 2 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 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 (500–2000 characters per cell).

### 2.1.3 Research funding

- 2.1.3.1 Describe the funding sources of the unit and indicate the share of the unit's budget (NOK) dedicated to research compared to other purposes. Shares may be calculated based on full time equivalents (FTE) allocated to research compared to total FTE in unit (500–1500 characters).
- 2.1.3.2 Describe how successful the administrative unit has been in obtaining competitive regional, national and/or international research funding grants (200–1000 characters).

### Form 3 Funding levels for the administrative unit for 2021

**Instructions:** For administrative units in the institute sector receiving basic funding via RCN, funding levels should be provided for 2021 in the funding categories used in the yearly reporting:

- a) National grants (NOK) (post 1.1 og 1.2):
  - i) from the Research Council of Norway (NOK) – excluding basic funding
  - ii) from the ministries and underlying directorates (NOK)
  - iii) from industry (NOK)
  - iv) other national grants including third sector, private associations and foundations (NOK)
- b) National contract research (post 1.3)
- c) International grants (post 1.4)
- d) Funding related to public management (forvaltningsoppgaver post 1.5)

For Higher Education Institutions costs covered by external funding sources should be reported according to the same categories as far as possible. Costs may be classified as Other if they cannot be placed in one of the specified categories. Reporting should be based on incurred costs (regnskapstall) for 2021.

### 2.1.4 Participation in national infrastructures

- 2.1.4.1 Describe the most important participation in the national infrastructures listed in the Norwegian roadmap for research infrastructures (Nasjonalt veikart for forskningsinfrastruktur) including as host institution(s) (200–1000 characters).

### Form 4 Infrastructures listed in the Norwegian roadmap for research infrastructures (Nasjonalt veikart for forskningsinfrastruktur)

**Instructions:** Please present up to 5 participations in the national infrastructures listed in the Norwegian roadmap for research infrastructures (Nasjonalt veikart for forskningsinfrastruktur) for each area that were the most important to your administrative unit. For each category area, please use the following formatting:

Name of research infrastructure, Years when used, Description (100–500 characters) of the engagement with the research infrastructure (reasoning, objectives, expected/actual outcomes).

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<sup>2</sup> Excluding basic funding.

<sup>3</sup> For research institutes only research activities should be included from section 1.3 in the yearly reporting

- 2.1.4.2 Describe the most important participation in the international infrastructures funded by the ministries (Norsk deltakelse i internasjonale forskningsorganisasjoner finansiert av departementene) (200–1000 characters).

## **Form 5 Participation in international research organisations**

**Instructions:** Please describe up to 5 participations in international and European infrastructures (ESFRI) for each area that have been most important to your research unit. When presenting your participation, please use the following formatting:

Name of research infrastructure, Years when used, Description (100–500 characters) of the participation in the research infrastructure (reasoning, objectives, expected/actual outcomes).

2.1.4.3 Describe the most important participation in European (ESFRI) infrastructures (Norske medlemskap i infrastrukturer i ESFRI roadmap) including as host institution(s) (200–1000 characters).

## **Form 6 Participation in infrastructures on the ESFRI Roadmap**

**Instructions:** For each area, please give a description of up to 5 engagements that have been most important to your research unit. When presenting your participation, please use the following formatting: Name of research infrastructure, Years when used, Description (100–500 characters) of the engagement with the research infrastructure (reasoning, objectives, expected/actual outcomes)."

### **2.1.5 Accessibility to research infrastructures**

2.1.5.1 Describe the accessibility to research infrastructures for your researchers. Considering both physical and electronic infrastructure (200–1000 characters).

2.1.5.2 Describe what is done at the unit to fulfil the FAIR-principles<sup>4</sup> (200–1000 characters).

### **2.1.6 Research staff**

2.1.6.1 Describe the profile of research personnel at the unit in terms of position and gender (200–1000 characters).

## **Form 7 Administrative data on the division of staff resources for 2021**

2.1.6.2 Describe the structures and practices to foster researcher careers and help early-career researchers to make their way into the profession (200–1000 characters).

2.1.6.3 Describe how research time is distributed among staff including criteria for research leave (forskningsfri) (200–1000 characters).

2.1.6.4 Describe research mobility options (200–1000 characters).

## **2.2 Research production, quality, and integrity**

### **2.2.1 Research quality and integrity**

2.2.1.1 Describe the scientific focus areas of the research conducted at the administrative unit, including the unit's contribution to these areas (500–2000 characters).

2.2.1.2 Describe the unit's policy for research integrity, including preventative measures when integrity is at risk, or violated (200–1000 characters).<sup>5</sup>

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### **2.2.2 Open Science policies at the administrative unit**

2.2.2.1 Describe the institutional policies, approaches, and activities to the following Open Science areas (consider each area separately, 500–1000 characters in total):

- 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
- Skills and training for Open Science
- Citizen science and/or involvement of stakeholders / user groups

2.2.2.2 Describe the most important contributions and impact of the unit's researchers towards the different Open Science areas (consider each area separately, 500–1000 characters in total):

- 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
- Skills and training for Open Science
- Citizen science and/or involvement of stakeholders/user groups

2.2.2.3 Describe the institutional policy regarding ownership of research data, data management, and confidentiality (200–1000 characters). Is the use of data management plans implemented at the unit?

## 2.3 Diversity and equality

### 2.3.1 Diversity and equality practices

2.3.1.1 Describe the policy and practices to protect against any form of discrimination in the administrative unit (200–1000 characters).

## Form 8 Administrative unit's policies against discrimination

**Instructions:** 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. For each document use the following formatting: Name of document, Years active, Link to the document

**Example:** Norwegian University of Science and Technology Strategy, 2021–2025, [hyperlink to the document](#)

## 2.4 Relevance to institutional and sectorial purposes

### 2.4.1 Sector specific impact

2.4.1.1 Describe whether the administrative unit has activities aimed at achieving sector-specific objectives<sup>6</sup> or focused 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 (500–3000 characters).

- Alternatively, describe whether the activities of the 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.

### 2.4.2 Research innovation and commercialisation

2.4.2.1 Describe the administrative unit's practices for innovation and commercialisation (500–1500 characters).

- Describe the interest among the research staff in doing innovation and commercialisation activities
- Describe how innovation and commercialisation is supported at the unit

## **Form 9 Administrative unit's policies for research innovation**

**Instructions:** Describe up to 5 documents of the administrative unit's policies for research 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. For each document use the following formatting: Name of document, Years active, Link to the document

**Example:** Norwegian University of Science and Technology Strategy, 2021–2025, [hyperlink to the document](#)

2.4.2.2 Provide examples of successful innovation and commercialisation results, such as new patents, licenses, etc (500–1500 characters).

## **Form 10 Administrative description of successful innovation and commercialisation results**

**Instructions:** Please describe up to 10 successful innovation and commercialisation results at your administrative unit. For each result, please use the following formatting: Name of innovation and commercial results, Year, Links to relevant documents, articles, etc. that present the result, Description (100–500 characters) of successful innovation and commercialisation result.

### **2.4.3 Collaboration**

2.4.3.1 Describe the unit's policy towards regional, national and international collaboration, as well as how cross-sectorial collaboration and interdisciplinary collaboration is approached at the administrative unit (500–1500 characters). Please fill out the forms that match your institution: the institute sector fills out Form 11a and Form 11b; HEIs fill out Form 12.

- Reflect on how successful the unit have been in meeting its aspirations for collaborations

### **Form 11a (institute sector) Administrative unit's partnerships ('faktisk samarbeid')**

**Instructions:** For each of the administrative unit's tender and project-based cooperation (which are not tax deducted) please present up to 5 examples under each category (Collaboration with national public institutions; Collaboration with national private institutions; Collaboration with international public institutions; Collaboration with international private institutions). Please use 100– 500 characters to describe the impacts and relevance of collaboration.

### **Form 11b (institute sector) Administrative unit's collaboration**

**Instructions:** For each of the administrative unit's tender and project-based cooperation please present up to 5 examples under each category (Collaboration with academic partners nationally; Collaboration with non-academic partners nationally; Collaboration with academic partners internationally; Collaboration with non-academic partners internationally). Please use 100–500 characters to describe the impacts and relevance of collaboration.

2.4.3.2 Reflect on the importance of different types of collaboration for the administrative unit (200–1000 characters).

- Regional, national and international collaborations  
Collaborations with different sectors, including public, private and third sector

### **Form 12 (HEIs) Administrative unit's partnerships" ('faktisk samarbeid')**

**Instructions:** For each of the administrative unit's tender and project-based cooperation (which are not tax deducted) please present up to 5 examples under each category (Collaboration with national public institutions; Collaboration with national private institutions; Collaboration with international public institutions; Collaboration with international private institutions). Please use 100– 500 characters to describe the impacts and relevance of collaboration.

2.4.3.3 Reflect on the importance of different types of collaboration for the administrative unit, the added value of these collaborations to the administrative unit and Norwegian research system (500–1500 characters).

#### **2.4.4 ONLY for higher education institutions**

- 2.4.4.1 Reflect on how research at the unit contributes towards master and PhD-level education provision, at your institutions and beyond (200–1000 characters).<sup>7</sup>
- 2.4.4.2 Describe the opportunities for master and bachelor students to become involved in research activities at the unit (200–1000 characters).

#### **2.4.5 ONLY for research institutes**

- 2.4.5.1 Describe how the research activities at the administrative unit contribute to the knowledge base for policy development, sustainable development, and societal and industrial transformations more generally (500–1500 characters).<sup>8</sup>
- 2.4.5.2 Describe the most important research activities including those with partners outside of research organisations (500–1500 characters).

### **2.5 Relevance to society**

#### **2.5.1 Administrative unit's societal impact**

- 2.5.1.1 Reflect on the unit's contribution towards the Norwegian Long-term plan for research and higher education, societal challenges more widely, and the UN Sustainable Development Goals (500–1500 characters).
- 2.5.1.2 Describe how the administrative unit's research and innovation has contributed to economic, societal and cultural development by submitting one to five impact cases depending on the size of the 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. Please use the attached template for impact cases. Each impact case will be submitted as an attachment to the self-evaluation. Institutions that submit impact cases do not have to fill in the box below.

Case no. 1

Thank you for completing the self-assessment.

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<sup>7</sup> Please note: RCN will provide data from the national student survey (Studiebarometeret) on students' experience with research methods and exposure to research activities. The data will most probably be on an aggregate level but including the unit under assessment.

<sup>8</sup> Strategi for helhetlig instituttpolitikk, Kunnskapsdepartementet, p.4): «Instituttsektoren skal utvikle kunnskapsgrunnlag for politikktutforming og bidra til bærekraftig utvikling og omstilling, gjennom forskning av høy kvalitet og relevans.» ([The government's strategy for an independent institute sector](#)).



## Scales for research group assessment

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### 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<br>Groups were invited to refer to the Contributor Roles Taxonomy in their description <a href="https://credit.niso.org/">https://credit.niso.org/</a>   |
|-------|--|-------|--|
| 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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