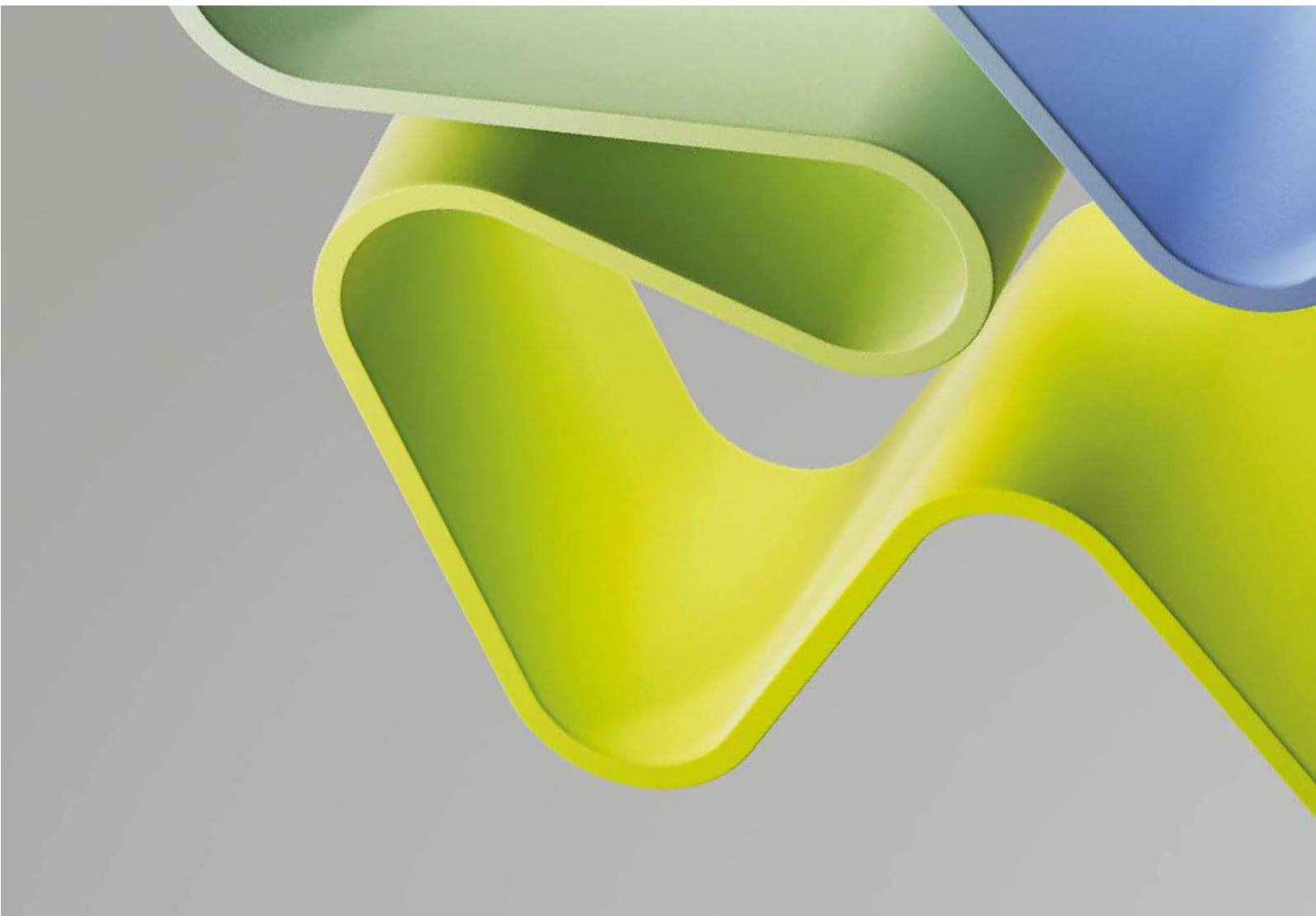


Evaluation of Life Sciences 2022-2024
Evaluation of Biosciences 2022-2023
Evaluation report – Administrative unit
University Museum
University of Oslo (UiO)

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:

	<p>Professor/dean Marianne Holmer (chair), University of Southern Denmark</p>	
<p>Professor/chair Alan Dobson, University College Cork</p>	<p>Research group leader Felicity Jones, The Friedrich Miescher Laboratory</p>	<p>Professor/section manager Jan Tind Sørensen, Aarhus University</p>
<p>Professor/ head Kjell Arne Johanson, The Swedish Museum of Natural History</p>	<p>Professor Martin Polz, University of Vienna</p>	<p>Ass. Professor/head Natasha Louise de Vere, University of Copenhagen</p>

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

Oslo, December 2023

Profile of the administrative unit

The Natural History Museum has a total of 88 employees out of which 27 are professors or associate professors, ten are researchers, 13 postdoctoral fellows, 17 PhD fellows, 17 engineers and four administrators. The share of women among professors and associate professors is low, 22%, while it is 45% among researchers and 59% among PhD fellows.

The Natural History Museum (NHM) is comprised of 10 research groups, out of which eight are at focus for this evaluation: 1. Evolution, eDNA, Genomics and Ethnobotany (EDGE), 2. Evolution and Paleobiology (EPA), 3. Evolutionary Zoology (FEZ), 4. Geo-Ecology (GEco), 5. Integrative Systematics of Plant and Fungi (ISOP), 6. Norwegian Center for Mineralogy (NORMIN), 7. Norwegian Center for Paleontology (NORPAL), and 8. Sex and Evolution Research Group (SERG).

NHMs Strategy 2030 guides the NHMs work and direction, including its contributions to a sustainable world through research, education, collection management and dissemination of natural diversity knowledge. The unit's research strategy is centred around five goals: The collections as a foundation; Knowledge-building and research profile; Dissemination; Working and learning environment; Internal and external interaction. According to the NHM its small core of roughly 27 academic staff leads diverse and excellent research programs that study earth's biological and geological diversity through time and space, disseminate their findings through international peer-reviewed publications, and are responsible for collections. Teaching is key to building knowledge of nature's diversity, and all groups are involved in research-based teaching, through teaching courses and excursions at undergraduate and graduate level, as well as supervision of BSc interns, MSc students and PhD students. NHM also leads the national Research School in Biosystematics - ForBio.

As a higher education institution, The Natural History Museum strives to reach the four overall goals of Norwegian Higher Education Institutions. In relation to these goals NHM mentions that as a university museum, the sector-specific objectives that all research groups participate in include research, collections, outreach, and education, and some research groups additionally participate in innovation projects of wider industrial/commercial interest. Research: NHMs main research areas focus on understanding the earth's geological and biological diversity. Collections: NHM maps, collects and describes Norway's natural diversity and holds over 6.2 million unique objects and their corresponding metadata. Outreach: NHMs exhibitions are central to UiOs public outreach. Over the past 11 years the research groups have been involved in the creation of popular science presentations for the award-winning and widely lauded new Geological Museum. Education: NHM contributes towards both undergraduate level and graduate level education through its teaching and training activities and hosting of graduate students (currently 18 PhD students and 22 MSc projects).

Based on its self-assessment, NHM will seek to take advantage of holding the largest collection of Norwegian natural diversity in the world and that these are unique and irreplaceable. The expertise, collections and infrastructure of NHM are expected to also in the future make significant contributions to scientific baselines, empirical research and science-based decision-making to address and mitigate challenges such as unsustainable economic development and climate change.

Overall assessment

The Natural History Museum (NHM) has long and deep traditions in collection-based research and building up and caretaking of collections. The scientific collections include more than 6 million specimens and constitute an important basis for research in taxonomy, systematics, and evolution. They also form significant background references for research e.g. on past and present diversity estimates and conservation approaches. NHM is responsible for teaching at university levels as well as producing exhibitions in natural history, and other outreach activities. Due to the multidimensional activities executed by the many researchers (and students), the overall research output from NHM is considered by the evaluation committee to have great potential. Some of these possibilities are surely spotted and initiated, like by adopting many of the most recently developed techniques and testing new techniques, in DNA-based biology among all the relevant existing research groups. This focus is exemplified in the strategic plan through the establishment of student platforms that stimulate collaboration across the section, and that have the effect of opening discussions and creating new ideas.

The overall assessment considering the Terms of Reference provided by the administrative unit is that the administrative unit might benefit from a description of the motivation for applied strategies. The research integrity receives important focus and is in line with international and national standards. The museum staff can follow courses in research integrity and have established routines in various aspects of international legislation, routines, and principles, and NHM is active in innovation, e.g. by developing new techniques in DNA-based research.

The research at NHM is described as mostly collection-based, and the collections are usually expanded as part of sampling in ongoing research. A strategic plan on how to modernise collections for future research would be constructive. The museum has a responsibility to store reference material from ongoing and future research, and a strategy towards a better understanding of nature's diversity might be a more aggressive sampling strategy, that can potentially meet future research demands related to climate change *et cetera* both comprising a targeted geographical, temporal and taxonomic coverage. NHM has an organization developed for supporting student platforms that stimulate collaboration across the section, like social activities, journal clubs, various courses, and workshops.

Recommendations

- Collections are an infrastructure and a requirement for the diversity of research outputs (thematic and level of impact). NHM should outline clear digitisation strategies of the collection. A strategy towards a better understanding of nature's diversity must imply a more aggressive sampling strategy, that can potentially meet future research demands related to climate change *et cetera* both comprising a targeted geographical, temporal, and taxonomic coverage.
- The role of the botanical garden and greenhouses must be strengthened in written strategic documentation.
- A careful evaluation of the effects and future potential and risks of organising the research groups based on methodologies and processes in different ways is requested for increased potential and output in the future and must involve all research groups.
- Networking in teaching at advanced levels is valuable, and engagement in NABIS could be evaluated.
- A more equal gender distribution is expected and requires a clear strategic plan on how to increase the number of women full professors and associate professors.
- To expand the potential research a more proactive strategy must take into consideration both existing resources and external support individually. A common research strategy among research groups is not specified but is recommended. A long-term priority and strategy in research are needed to secure competence over time. To increase and cover more of the

research that is potential at NHM a more proactive strategy is to be divided into different levels, based on existing resources, and based on more external support.

- The increased publication volume over the last few years possibly results from reorganisation the division and research groups. However, research publications are often measured a long time after the research is initiated and it is unclear if the publication number significantly reflects the organisation. A method for measuring this is requested.
- Consider stronger participation in international research organisations and infrastructures, for example ESRF (applications in paleobiology), EMBL (applications in DNA genome research and bioinformatics), VEGA (applications in biology), MAX4 (applications in paleontology and biology).
- The societal impact of NHM on society is not well articulated, and it is unclear which stakeholders are targeted by some of their outreach activities. Despite the obvious potential for the research groups to deliver societal impact directly, the panel found little background data to demonstrate how the groups' outputs influenced decision-making or public understanding of biodiversity and nature.
- The research groups are diversely successful in research production, research quality, and research integrity. There is space for development across these research parameters that will increase the research impact by NHM. The evaluation panel requests NHM to formulate a sharper research strategy to reach a more consistent output regarding quality and integrity.

1. Strategy, resources and organisation of research

NHM has developed a strategic plan for 2020-2030, which to a certain degree, is based on continuing to position the museum as the main national natural history museum node and acting as a natural gate to and from international institutions. The strategic plan has five main areas, of which the museum's identity as a collection-based research institution, is elevated and strongly related to teaching at the University of Oslo. The strategic plan is considered too vague by the evaluation committee. The museum aims and strives to become a centre of excellence in 2025, which the committee considers unrealistic due to the irregular research quality and output. Much of the research is categorised by natural processes and constitutes formal programmes. The research is primarily collection-based and the collections are continuously built up as a consequence of additional and complementary sampling. Internal funding includes fixed annular individual funding which secures a minimum level of research activities, which is especially important if external funding disappears. The internal funding of PhD students and master's students is particularly important for research production and development. External funding is from both private and public sources. The highest volume (NOK) obtained is from RCN closely followed by the EU (The European Research Council and The European Research Executive Agency), and The Norwegian Biodiversity Information Centre supports various initiatives at NHM.

The cohesiveness and adequacy of the administrative unit's strategy and organisation are actively prioritised in their strategy, particularly through the establishment of student platforms that stimulate collaboration across the section. These platforms also have the potential to stimulate collaboration among permanent staff in the section.

1.1 Research Strategy

NHM developed a strategy for 2020-2030, "Understanding Nature's Diversity" that comprises various aspects of the NHM activities, including research. The research profile lists plans as well as activities, many of which are already implemented at the institution. NHM might benefit from a more detailed description of strategies to be applied, from both a national and a global perspective, including strategies for collecting and collection handling, and the role of the DNA lab in future research.

Little background was given that concerns collaboration with international research institutes and what research areas need to be strengthened in the future, and we would like to see more concrete plans for how to reach a top-end research level.

The goals in the "Strategy for 2020-2030" could be broken down into more realistic monitorable segments within each area of relevance for research. The research strategy should also include a description of strategic collecting, important laboratory facility needs, etc. A clear strategy for enriching and modernizing the collections should be developed.

1.2 Organisation of research

The academic staff at NHM leading and building research programs comprises [2021] 27 professors and associate professors. The organisation is divided into 5 sections of which one section, the Section for Research and Collections, dominates the scientific output. All research groups of the section perform collection-based research, outreach, and research-based teaching like organising ForBio courses. The research staff has fixed institutional research:collection:teaching ratio of 50:40:10. This ratio appears effective and mirrors both needs of participating in academic development and increasing the quality of the scientific collections. One of the strategies of NHM includes a division of the organisation into research groups striving towards concentration of knowledge and technical equipment resources like methodology rather than strict organism boundaries, and stimulation to interdisciplinary research. The NHM research groups are thus divided based on processes instead of traditional organism taxonomy. A plan for critically following up on and eventually revising the criteria for the divisions is appropriate and a strategy affecting the boundaries of the research groups must be present to be able to follow up on the effects of this organisational structure. NHM should give improved information about its research ethics.

1.3 Research funding

Internal funding at NHM includes fixed annular individual funding, including the funding of PhD students and master students. For NHM the EU/NBIC provides a 30% funding rate while RCN provides a 15% funding rate. But the highest volume (NOK) obtained is from RCN followed by the EU, and The Norwegian Biodiversity Information Centre supports various initiatives at a national level. These four sources together account for approximately 75% of the total external funding volume. There is a variation in the level of support over the years, and the variation in volume should be highlighted. Many of the research groups at NHM have a substantial part of the budget from external funds and are therefore sensitive to changes in the flux of external funds. There is a global problem with opportunities for external funding of basic research at natural history museums, but there are also opportunities if research projects are aligned more toward e.g., applied research. Detailed examples of such applied research areas might be related to areas comprising effects on biodiversity from climate change, nature exploitation and utilisation, global diversity loss, and the use of genomic data. This should have been presented in a research funding strategy.

Due to the basic internal funding opportunities, there is a potential for NHM to maintain a basic research quality level despite the lack of external funding.

1.4 Use of infrastructures

NHM is part of several RCN-financed international infrastructures. NHM is also part of the preparatory phase of DiSSCo and lead of the Norwegian network of the EU DiSSCo consortium. NHM is leadbehind national infrastructures NORBINA and NIBIGEN. The collection and database infrastructures are thus involved strongly towards the distribution of own collection data, having access to global scale collection data, and determination of objects/specimens using DNA barcodes. The museum does not house organised international infrastructures but is part of such.

The basic research carried out at NHM is strongly centred around its scientific collections as well as collections at other museums and is considered an important infrastructure. NHM also uses its laboratory facilities for DNA gathering and analyses, and these labs are, together with various databases, as well as field station facilities, of high relevance for NHM and its collaborators. NHM has access to an Ancient DNA lab, which is important in research on young fossils, sub-fossil objects, and museomics.

The administration takes adequate action to fulfil the FAIR principles through the distribution of data through databases, like GBIF and GRSciColl, that follow international standards.

1.5 National and international collaboration

Scientific collections are one of the core infrastructures that also form a platform for NHM collaboration nationally and internationally, and the museum is thus considered by the evaluation committee as an important Norwegian representative in international initiatives, like GBIF, CETAF, DiSSCo, and BioDT. As the collections are suitable for cross-sectorial and interdisciplinary collaboration, it would be highly relevant to see in-house examples of such research collaborations, and their effects. The taxonomic expertise should have been stressed as an important complement to the collections regarding collaboration with partners. References to collaboration with international research institutes and research areas should be strengthened and follow a strategic plan. NHM listed existing international collaboration organisations and network partners. A strategy for catching up with these initiatives should have been presented as concrete ongoing activities or advanced plans. Material exchange with other museums would be highly beneficial for NHM.

1.6 Research staff

The number of full professors [2021] is 15, almost double the number of associate professors (nine). The number of PhD students in the same year was 15. Whether the bias towards more full professors vs. associate professors is due to a promotion system or not is uncertain. NHM has a gender issue regarding higher research positions. Women exceed 50% in the category of Ph.D. students, indicating that the basic interest in research among Ph.D. students is about equal between men and women. The number drops to below one-fourth among full and associate professors. It was not demonstrated that more professors than associate professors are beneficial for the institution's research, and the strategic plan does not mention that this situation is advantageous, requested, or needs to be changed. Data presented by NHM did not show that more professors generate more external funding. A high number of full professors generates higher salary costs for the institution, and the balance between salary costs and success in external funding or research productivity should have been evaluated.

A monetary reward system exists for female associate professors seeking promotion to full professors. Despite this, less than one-quarter of the professors are women, and NHM has not presented a strategy to manage the challenges of inequality in higher positions.

2. Research production, quality and integrity

The general trend of the number of publications in Norway forms a growing curve of about 25% from 2017-2021, which is also the trend for NHM. The trends of author shares are also the same between NHM and Norway as a whole. Female researchers at NHM have the highest level of author shares among all evaluated Norwegian institutions, indicating that female authors at NHM are attractive collaborators. There is a strong positive tendency to change “not Open Access” to “Open Access” from 2012 to 2021. The citation indicators of published papers show that NHM is around mid-strong compared with similar institutions in Norway. Also, the share of publications with national, and international collaborators is around the middle when compared with similar Norwegian institutions.

The three most frequently used journals during 2017-2021 were taxonomically oriented. This picture is similar to other museums in Norway and in other countries. As for the rest of Norway, the collaboration institutions are mainly international. NHM has a (non-linear) increased international collaboration from 2012 to 2021, at the same time, the national collaboration was relatively stable.

The evaluation committee finds that the research groups are diversely successful in research production, research quality, and research integrity. There is space for development across these research parameters that will increase the research impact by NHM in the future. NHM should formulate a sharper research strategy to reach a more consistent output regarding quality and integrity.

2.1 Research quality and integrity

Research group EDGE – Environmental DNA, Genomics and Ethnobotanics, overall assessment

The EDGE group has strong expertise in plant genomics, covering both basic scientific questions (determinants of speciation rates, adaptation to extreme environments in the arctic) and more applied topics. Their main recognized expertise, which attracts most funding and interest from society, is on species identification by DNA barcoding. This involves projects with potential economic applications (authentication of herbal food supplements), but no such development is mentioned in the report, so this aspect of contribution to society could be further developed. The group’s organization could be simplified (currently 4 subgroups and 3 scientific objectives for only 4 permanent staff) and made more scientifically coherent by having joint scientific meetings.

Research group EPA – Evolution and Paleobiology Group, overall assessment

EPA appears to be a new, dynamic, open, sharing research group with an international research profile and network with a real potential to shape palaeobiology and evolution using new software tools combined with the backup of the museum. The group is very international and is at risk due to its success, small size, and funding portfolio, which grants which are not tied to Norway.

It is placed in the museum (NMHO), uses museum resources and contributes to collections, but how the research group articulates with the curation/conservation role of the museum and fits within the museum's research framework is not well articulated. The group demonstrates the value of integration with a museum, but the evidence from the documentation suggests that this may be a little superficial.

Their specialists work in small research areas on taxonomic groups which research councils do not prioritise. Furthermore, their inability to articulate a strong societal contribution is a concern and may put them at risk as political pressures on funding overwhelm them. A young, strong group that is working well, but will have to work out how to age together.

Research group FEZ – Frontiers in Evolutionary Biology, overall assessment

The structure of the FEZ group, owing notably to its recent origin and its small size, currently limits its stability and overall scientific dynamics, making FEZ very dependent on outside international partners. On the other hand, the group is young and still developing, and the efforts they invest into constructing scientific coherence (via joint seminars and collaborative grants) is likely to be beneficial, if coupled with targeted recruitments.

Research group GEco – Geo-Ecology Research Group, overall assessment

The group appears strong and has a clear focus on biodiversity informatics. Their strengths lie in data collection, provision and spatial analysis. They are good at securing competitive grants from RCN and EU, and using that money to drive their own research, and funding junior researchers. The group has strong national and international collaborations. Members provide leadership to nationally and internationally important biodiversity informatics programmes (GBIF, Natur i Norge). The Group's resources are directly tied to these programmes; therefore, their sustainability is dependent on long-term external funding, which is risky. They have demonstrated expertise in biodiversity informatics, mapping of species distributions and ecosystem states. While the Group identity is described as linking ecology and geosciences, there was less clear evidence of the latter in the project and output descriptions. The GeoEcology Group has a clear purpose in supporting international data infrastructure programmes. However, the self-assessment lacked a clear research vision or coherent strategy for building on their key strengths in data collection, provision and spatial analysis to lead new areas of research with international funding. The self-assessment also failed to describe how the Group is managed as a whole, how junior researchers are trained and mentored, how the monthly meetings are used to facilitate Group cohesion or plans for future recruitment. Despite the obvious potential for the Group to deliver societal impact directly, there was little in the self-assessment to demonstrate how the Group's outputs influenced decision making or public understanding of biodiversity and nature.

Research group ISOP - Integrative Systematics of Plants and Fungi, overall assessment

The ISOP group presents work that provides the underlying basis of more applied work that addresses important topics related to the biodiversity crisis. Such applied research is not possible without the biosystematics knowledge and curation of collections. Specifically, the group is doing very good research related to the taxonomy of plants and fungi.

The group has a clear strategy in line with the Natural History Museum, and there is a good level of support for the work from the wider institute. The role of the unit to maintain this field, and the knowledge and expertise available in this group, is essential and expressed by the educational role. Societal impact is mostly indirect. While the group cannot be compared with the reputation of the UK Royal Botanical Gardens given the smaller size, it is comparable with similar other groups in Europe in this field. The group is important nationally, but the research outputs are unlikely to attract broad international attention given the focus on publishing in very specific journals and the relatively modest levels of originality in the research. Nevertheless, the rigor applied in the work is good to excellent.

Research group NORMIN – Norwegian Center for Mineralogy, overall assessment

NORMIN is unique in Norway and on par with other research-oriented mineral collections in Europe (e.g., Berlin and Freiberg in Germany), but not yet up to the world-class standard (e.g., London, Paris, or New York). The organisational environment is adequate for producing internationally recognized work and their contribution to the economic, societal, and cultural development of Norway is very considerable relative to similar groups internationally.

The expert panel sees an overall need for more external grants, an improved gender balance, and an increase in the number of PhD students/graduates. One way to immediately address these concerns is to hire new (female) staff, who might be successful in obtaining external funds that also support a PhD student. Overall, such improvements will further strengthen the group's standing.

Research group NORPAL – Norwegian Center for Paleontology, overall assessment

The following strengths were listed:

The group has published a good number of peer-reviewed articles on a diversity of topics. With respect to Svalbard's geology, the group has a unique competence for the protection and conservation of Svalbard's geoheritage. The group has a large collection of specimens and data sets that are made available to researchers from abroad and result in international collaboration and publications. There is notable use of a range of national funding sources, including trusts and charitable funds. NORPAL is very active in outreach and promotes Svalbard's geology and palaeontology and Norway's geoheritage. And there is clear evidence for enthusiasm and delivery of a national resource.

The following weaknesses were listed:

The group's strategic goals are ambitious, but no clear information is given on how these goals will be achieved and how they will result in high-quality research. Documentation regarding the Holocene line of research is missing. The small group is vulnerable to changes and information on succession planning, including on how to address the current gender imbalance, has not been provided. Mentoring and training of PhD students and postdoctoral researchers and mobility of permanent staff should be considered. Research income is dominantly provided by national sources, and it may be worth considering how to diversify to include more international funding. Internal collaboration and collaborations focus on NHM's fossil collections, but it is not outlined how these will lead to high-quality research. It is not clear how users /non-academic partners are involved in the research process and what the societal impact of the group's research is.

Research group SERG – Sex and Evolution Research Group, overall assessment

The SERG group is well placed to lead the research agenda in evolutionary reproductive biology, and their activities are in harmony with the institutional goals. Good productivity for such a focused and small group. The outputs are strong and representative of their research field. They lack critical mass and the fact that they are engaged in a generational change might imply difficulties maintaining their productivity. They rely on internal funding; it is convenient to diversify their external funding support. Although their research has a clear connection with prominent issues for society, their self-report lacks specifics on this issue.

Two more Research groups are part of the NHM research organisation, but not evaluated.

2.2. Open Science

As a research and higher education organisation, UiO has established wide-ranging policies and guidelines ensuring that the research at NHM follows relevant national and international standards. The staff at NHM is given an open course on research integrity and the university provides a document “Standard for Research Integrity” that clarifies the sets of norms for research integrity also relevant to the staff at NHM. Sampling biological specimens is regulated by international rules, which the museum is fully aligned with, like the staff are expected to follow the Convention on Biological Diversity (CBD), the Nagoya Protocol on Access and Benefit-sharing (ABS), and the Convention on International Trade in Endangered Species (CITES).

The UiO contributes to NHM with a wide spectrum of policies and guidelines on open access. The NHM staff is committed to follow the guidelines provided by the university UiO in a variety of categories. Examples are given for Open-source software and tools, Open access to educational resources, and Open access to research data and implementation of FAIR data principles. One example involves leading the development of the Viking Garden; physical information about plants used by Vikings. Research dissemination at the botanical garden is about making results available, but also understandable, applicable, and relevant to society. However, the evaluation committee expected more detailed examples of research at the botanical garden .

NHM aims to publish in Open Access journals and make data openly available. All software is available for Open Access. Citizen Science at NHM is an established platform for communicating research with stakeholders/the public. Examples of how stakeholders are involved in NHM research and projects through citizen science and scientific co-production are, however, few. The institutional policy regarding ownership of research data, data management, and confidentiality is fulfilled at various levels.

Several training programmes have been developed by NHM in the form of online courses. NHM follows the routines at UiO in aspects of handling research data, data management, and confidentiality.

3. Diversity and equality

UiO has plans, strategies, and policies for Diversity, Gender equality, and Inclusion, as well as methods for measuring ambitions vs outcomes. UiO has established systems for students and employees for notifying and reporting observed misbehaviour, as well as interpreting and training employees in suitable responses. Specifically, in 2018, NHM established an action plan for gender balance and diversity and is a partner in the RCN-funded FRONT project with a focus on gender equality in academia. NHM has also recently hired an HR adviser dedicated to working on diversity and equality who is planning a seminar on sexual harassment. Little was mentioned about gender diversity in research, but in most research groups there is a strong bias towards males. Women make up less than a quarter of the volume of full and associate professors, indicating that the action plan is not working quickly and/or must be better adapted to NHM.

The evaluation committee would have liked to receive information on how NHM and its research groups aim to advance the careers of the staff members and how the administrative unit's strategic plan will result in high-quality research, gender diversity, and societal relevance. NHM should have focused more on international inequality in their report.

4. Relevance to institutional and sectorial purposes

NHM contributes to society through reports to organisations, as well as scientific publications. However, the evaluation committee would have liked to see more specific examples of contributions. The collections' relevance to institutional and sectorial purposes usually increases after being digitised, and more than 50% of NHM collections are digitized and made publicly available through

webpages, Artsportalen, and GBIF. The relevance of the data is high and available for initiatives by other organisations.

Research groups at NHM actively use public outreach as a research method, but what this means and how they do it should have been explained. The administrative unit's reflections for further developing knowledge transfer are merely shaped as a list of what could be done in theory, rather than what will be done or intended to be done, for instance by providing examples. More evidence of interaction with end users as part of the research process and of the societal impact of their research (i.e. how the information they produce translates to society and policy) is requested by the evaluation committee. The evaluation committee found that user-oriented contributions should be higher and that users /non-academic partners must be more strongly involved in the research processes.

NHM is engaged in education at various levels, of importance for different institutes and sectors in society, like ForBio that is organised by NHM. NHM has tight support from relevant units at UiO on innovation and commercialization initiatives and has access to seed money and student internships. NHM is a national and international node and agency in several aspects as a member (not leader), like Artsdatabanken, Norwegian Polar Institute, the International Whaling Commission (IWC), the North Atlantic Marine Mammal Commission (Nammco), the Norwegian Scientific Committee for Food and Environment (VKM), and Convention on International Trade in Endangered Species (CITES). Several research groups at NHM mention joining projects with commercial partners, but the scope of these is not clearly explained nor documented with examples.

5. Relevance to society

The research groups at NHM have various social impacts and influences. Social deliveries are for example maintenance of the scientific collection and a permanent exhibition at the NHM's botanical garden, aircraft safety collaborations, training biology in aspects of biodiversity and climate change, serving with taxonomic expertise through determinations of species, and leadership resources to nationally and internationally biodiversity informatics programs like GBIF and NiN. In general, NHM staff are actively engaged with the public *via* citizen science activities and exhibitions. However, several of the research groups provided little information regarding user-oriented contributions. A general picture is that societal contributions by many research groups are not well articulated, and it is unclear which stakeholders are targeted by some of their outreach activities. Despite the obvious potential for the research groups to deliver societal impact directly, the panel found little background data to demonstrate how the groups' outputs influenced decision-making or public understanding of biodiversity and nature. The evaluation committee would have liked to see information on how NHM research groups aim to advance the careers of the staff members and plan how the group's strategic plan will result in high-quality societal relevance, and also more specific examples of citizen science.

Comments to impact case 1

NiN is a Norwegian system for typification, description, and mapping of Norway's nature, including terrestrial, aquatic, and marine ecosystems, landscape types, and geomorphological landforms. It was initiated in 2005 by the Norwegian Biodiversity Information Centre (Artsdatabanken). NHM is responsible for the scientific content of NiN, including most of the documentation of the system. The system is a pioneer work globally, at least when regarding the very high resolution, large geographical area, and level of complexity covered. The underpinned research rests mainly on NHM's research tradition in systematics, ecology, and biogeography. Currently, NiN is the backbone of several national mapping programs, and the references to the research on NiN included at least one of the key researchers, indicating an accepted level of collaboration. The references were to journals with mainly median- to moderately high-impact. Information on the impact of the system included only a few details, and the description was at a general level.

Comments to impact case 2

NHM houses a project aiming at developing tools for the identification of specimens, various tissues, and objects to species level as a support for authorities to prevent illegal wildlife trades. The initiative is financed by EU H2020 and RCN. The underpinning research is voluminous. The research group is very large and has economic support and manpower to test a vast number of approaches for

identification by using DNA. The references of their research are with one to three in-house authors and a number of co-authors outside the research groups, indicating wide collaboration. The journals had mainly high-impact factors. The project has a large-scale impact, both thematically by developing new and modifying existing methodologies in the determination of plant and animal species using molecular data, but also institutional by members of the research group also being active in national and international settings of high societal interest and with political impact.

Appendices

List of research groups

Institution	Administrative unit	Research group
University of Oslo	Natural History Museum (NHM)	<i>Geo-Ecology Research Group (GEco)</i> <i>Integrative Systematics Of Plants and Fungi (ISOP)</i> <i>EDGE</i> <i>Evolution and Paleobiology Group (EPA)</i> <i>Sex and Evolution Research Group (SERG)</i> <i>Frontiers in Evolutionary Zoology (FEZ)</i> <i>Norwegian Center for Minerology (NORMIN)</i> <i>Norwegian Center for Paleontology (NORPAL)</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

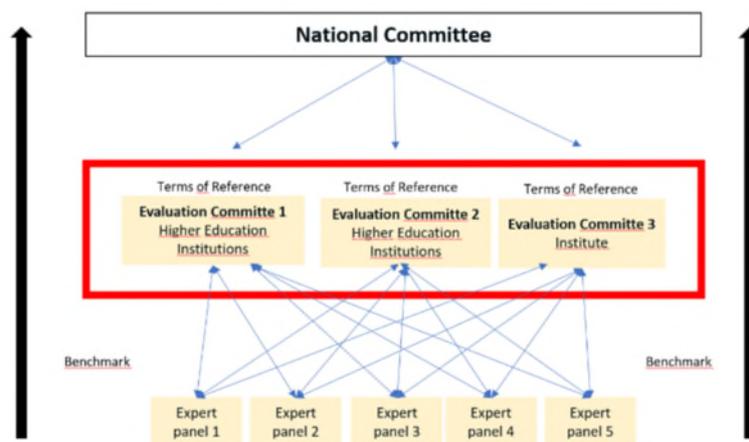
By evaluating Norwegian research and higher education we aim to enhance the quality, relevance, and efficiency. In accordance with the statutes of the Research Council of Norway (RCN), the RCN evaluates Norwegian professional environments to create a solid and up-to-date knowledge base about Norwegian 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 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 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 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 enheten¹ 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.

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 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/>.

¹ 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 eller ved å kontakte Hilde Dorthea Grindvik Nielsen på epost 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

LIVSEVAL protocol version 1.0

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

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Oslo, 5 April 2022

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1 Introduction

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

1.1 Evaluation units

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

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

<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 Reference¹ for the assessment of RPOs and a national-level assessment in life sciences
- appoint members to evaluation committees and expert panels
- provide secretarial services
- commission reports on research personnel and publications based on data in national registries
- take responsibility for following up assessments and recommendations at the national level.

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

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

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

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

1.4 Target groups

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

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

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

2 Assessment criteria

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

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

2.1 Strategy, resources and organisation

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

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

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

2.2 Research production, quality and integrity

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

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

2.3 Diversity and equality

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

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

2.4 Relevance to institutional and sectoral purposes

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

Higher Education Institutions

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

The purposes of Norwegian HEIs are defined as follows in the Act relating to universities and university colleges²

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

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

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

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

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

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

Research institutes (the institute sector)

Norway's large institute sector reflects a practical orientation of state R&D funding that has long historical roots. The Government's strategy for the institute sector³ 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.⁴ 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,

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

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

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

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

2.5 Relevance to society

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

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

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

3 Evaluation process and organisation

The RCN will organise the assessment process as follows:

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

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

3.1 Division of tasks between the committee and panel levels

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

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

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

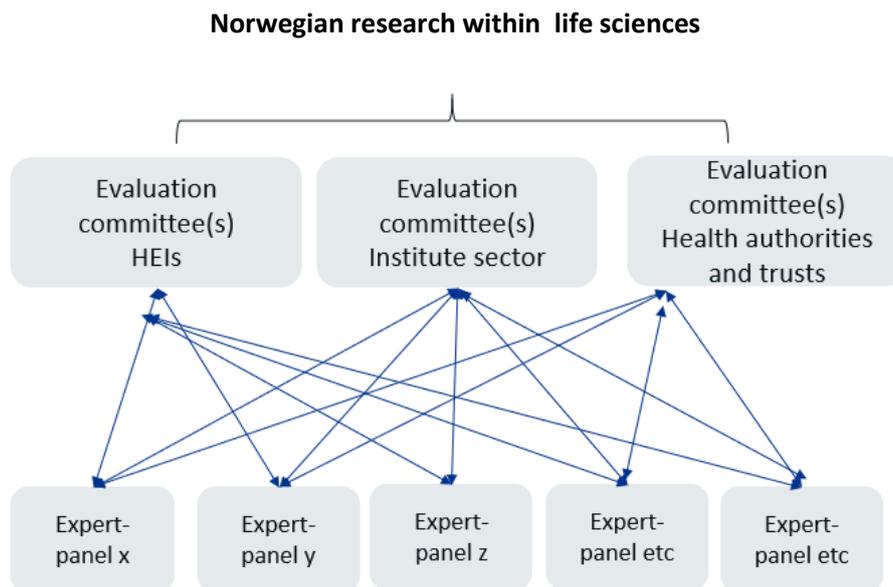


Figure 1. Evaluation committees and expert panels

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

3.2 Accuracy of factual information

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

3.3 National level report

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

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

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

Appendix A: Terms of References (ToR)

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

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

Assessment

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

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

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

1. ...
2. ...
3. ...
4. ...
- ...

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

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

Documentation

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

The documents will include the following:

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

Interviews with representatives from the evaluated units

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

Statement on impartiality and confidence

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

Assessment report

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

Appendix B: Data sources

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

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

National registers

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

Self-assessments

1) Administrative units

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

2) Research groups

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

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

Table 1. Types of evaluation data per criterion

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



**The Research Council
of Norway**

EVALBIOVIT

Self-assessment for administrative
units

Version 1.2

Overview

Institution (name and short name):

Administrative unit (name and short name):

Date:

Contact person:

Contact details (email):

1 Introduction

The primary aim of the evaluation is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), 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 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.

Many thanks in advance!

¹ 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

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).

² Excluding basic funding.

³ 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-principles⁴ (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).⁵

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 objectives⁶ 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).⁷
- 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).⁸
- 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.

⁷ 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.

⁸ 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

Organisational dimension

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

Quality dimension

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

Societal impact dimension

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

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