Forskningsrådet

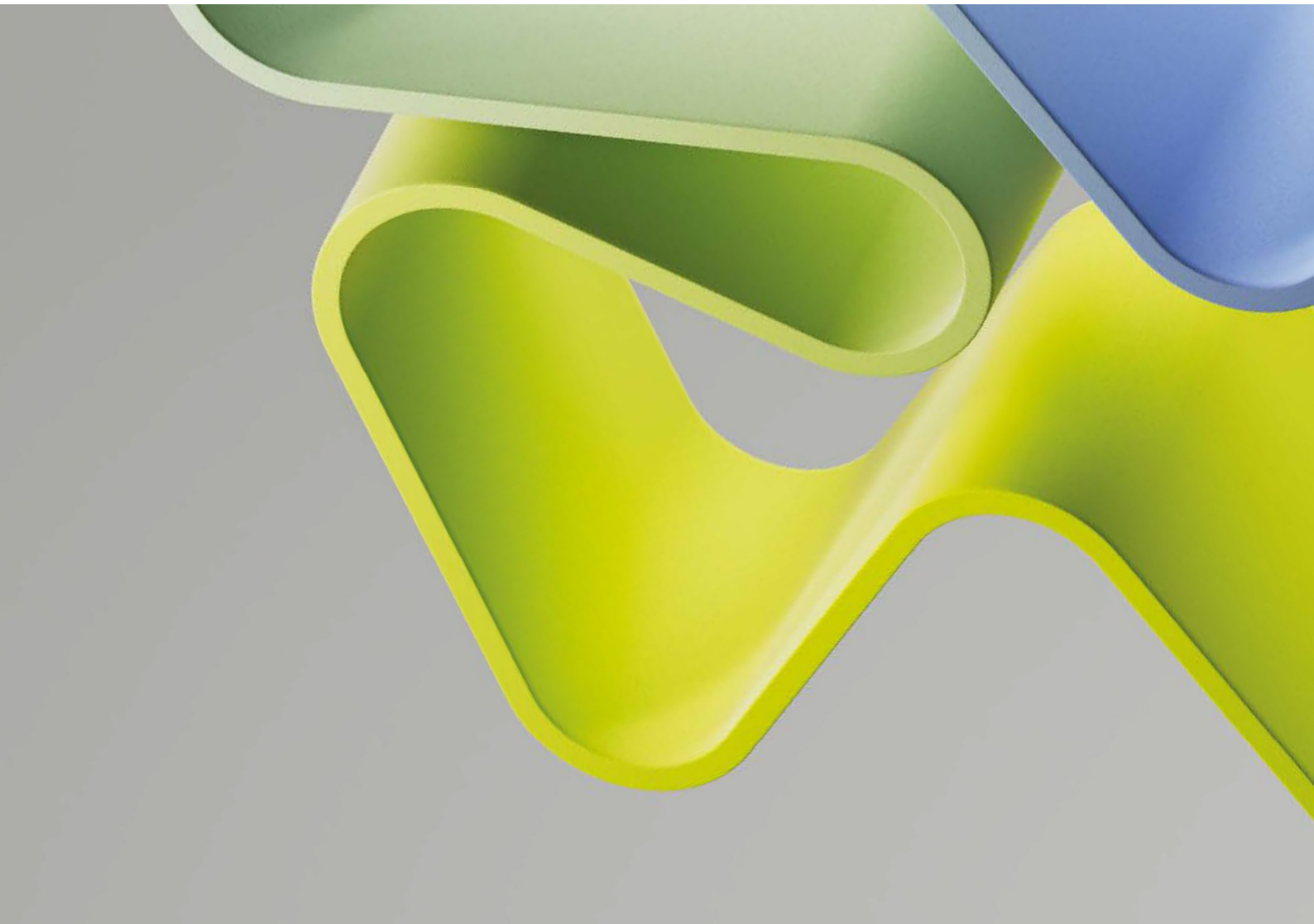
Evaluation of Natural Sciences 2022-2024

Evaluation report

Weather and Climate

Norwegian Meteorological Institute

January 2024



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Statement from Evaluation Committee – Institute II

The members of this Evaluation Committee have evaluated the following administrative units at the research institutes within natural sciences in 2022-2023 and submitted a report for each administrative units:

- CICERO Centre for Climate Research
- Norwegian Meteorological Institute – Weather and Climate (MET)
- Norwegian Institute for Sustainability Research (NORSUS)
- Norwegian Research Centre (NORCE) – Climate and Environment
- Norwegian Institute for Air Research (NILU) – Environmental Chemistry Department
- Norwegian Institute for Air Research (NILU) – Atmospheric and Climate Research Department
- Norwegian Water Resources and Energy Directorate (NVE)
- Nansen Environmental and Remote Sensing Centre (NERSC)

The members of the Evaluation Committee are in collective agreement with the assessments, conclusions and recommendations presented in this report. None of the committee members has declared any conflict of interest.

The Evaluation Committee has consisted of the following members:

Professor **Mat Collins**, (Chair)

University of Exeter, United Kingdom

Professor **Dorthe Dahl-Jensen**,

Niels Bohr Institute, Denmark

Professor **Hayley Fowler**,

Newcastle University, United Kingdom

Professor **Martin Siegert**,

Imperial College London, United Kingdom

Professor **Thomas Jung**,

Alfred Wegener Institut, Germany

Description of the administrative unit

The research and innovation activities at the Norwegian Meteorological Institute (MET) are mainly organised in two departments: the Development Centre for Weather Forecasting and the Research and Development Department. In 2021, MET Norway R&D had 156 employees, 39 of whom are Scientist 1, 84 are Scientist 2, and 33 are Scientist 3.

MET research can be divided into three main themes (1) Climate, (2) Sea and coast, sea ice and remote sensing and (3) Meteorology.

In the-self assessment forms, MET states that the main strategic goal is to facilitate innovation and the ability to adopt enabling technologies to achieve science for service. Moreover, MET states that they have always been a user-oriented organisation. To this end, they combine science and operational services through targeted research. MET focuses on the continuous connection between research, operations, and applications. In doing so, they focus on partnerships and division of work with leading academic communities, research institutes, mandates organisations and users, nationally and internationally. One of the stated goals is that both they and partners use joint modelling tools, and specifically that e.g. universities have access to part of their model systems so that students can use and further develop these. No strategic goals with regards to training were mentioned within the self-assessment.

In the-self assessment form, the main purpose of the research at MET is to transform science into operational services. To this end, research must be in the forefront of the fields and thereby contribute to the knowledge base in general. One example of the work that MET has done to achieve this strategic work is by hosting the national climate services and cooperating with NVE on the scientific basis for climate change adaptation. MET Norway R&D also contributes to the synthesis of the Euro-CORDEX data for future projections, for instance in the use of observational data for calibrating model results.

In their self-assessment, MET assesses what the present strengths are that will position them for the future. These strengths include: (1) Experts from various disciplines along the value chain working efficiently together on projects (2) A flat, flexible structure and delegated responsibility (3) Efficient support with dedicated economic/project controllers, which minimises external project bureaucracy and (4) international collaboration on global observing systems (in situ and satellite) as well as on large model systems for weather, ocean, and climate. However, weaknesses such as low internal staff funding may be a limitation for implementing the results from externally funded research in an efficient manner. In addition, internal collaboration between units can be improved to secure and strengthen METs position in the future.

Overall assessment

Research-based services and a short route from research to operations in the fields of operational meteorology, oceanography and climate are key elements of this unit’s strategy. This includes swift feedback from users to guide future research. The evaluation committee is fully supportive of this strategy, which is well suited to the unit’s mission and provides a unique selling point in the Norwegian research landscape. At the same time, however, it was felt that a truly cohesive strategy was lacking from the material presented to the evaluation committee, as was concrete and tangible evidence illustrating the impact that the value-chain has generated on actual decision-making.

Collaboration in the context of third-party funded projects and infrastructures is critical to the success of this unit. Overall, collaboration can be considered excellent. The unit is clearly contributing to and benefiting from the most relevant and important research networks and cooperation, nationally and especially internationally. Prominent examples include international organisations (ECMWF, EUMETSAT and WMO), research projects in Horizon Europe and services delivery endeavours such as Copernicus and Destination Earth.

Based on the available material, the research output is deemed to be very good. Yet, there is a scarcity of evidence indicating widespread excellence by international standards throughout the unit. This sentiment is echoed by some research group assessments. However, it is acknowledged that some of the research underpinning the value-chain approach – a central element of this unit's strategy – is difficult to publish in high-impacts journals. Given the prominence of the value-chain concept in the documents provides, it was not entirely clear to the evaluation committee where the research priorities were lying and what the main research contributions were during the past five years.

Overall, the unit is doing very good on diversity and equality, for example as exemplified by genderbalance, interdisciplinarity (the unit is composed of natural and social scientists) and an international workforce. The possibility of generating tangible impact through the value chain approach and the unit's proximity to operations, can be a distinct advantage when hiring staff.

The unit makes relevant contributions to institutional and sectoral purposes as well as society. The provision of operational weather and marine forecasts as well as climate services in support of adaptation are prominent examples. However, it is important for the unit to stay vigilant on providing the best products in support of decision-making, also given the emerging pressure from private sector players.

Recommendations

The evaluation committee recommends the following actions be taken by MET W&C:

1) Enhance their presentation in high-level assessments by prioritising clarity and depth, emphasising scientific achievements within the administrative unit. Elevate the impact of your accomplishments by incorporating concrete evidence and impactful success stories, addressing the perceived understatement of underpinning scientific endeavours. Refine your communication strategy continuously to effectively showcase your work and achievements, contributing to a positive perception of your efforts.
2) Illustrate progress toward strategic goals with compelling success stories, leveraging the existing impact cases as a valuable starting point.
3) In terms of collaboration, continuously explore opportunities to lead impactful initiatives, evaluate collaborations, and strategically position yourself among competitors.
4) Regularly reassess the management structure, considering concerns about the effectiveness of a flat hierarchy raised by some evaluation committee members. Explore alternative approaches that may align better with the unit's goals.
5) Give due consideration to Equity, Diversity, and Inclusion (EDI) and career development, and ensure sufficiently clear plans are in place.
6) Strategically lobby for increased core funding.
7) Foster closer collaboration across research units, exploring cross-cutting topics such as weather and environmental extremes in a warming world. This collaborative approach can

contribute significantly to the unit's overarching goals and be considered a unique selling point in the Norwegian research landscape.

8) Play an active role in shaping a comprehensive modelling strategy for Norway, addressing future priorities, achieving critical mass, and delineating responsibilities. Your input will be valuable in guiding the modelling landscape.

The table below presents the specific aspects of the evaluation the administrative unit requested the evaluation to explore and indicates where these are addressed in more detail in the subsequent report.

Specific Request from the Unit's Terms of Reference	**Where it is addressed in the report**
Quality and productivity of the research	Addressed in section 2
Impact of the research and adequacy of the research-tooperations (R2O) transformation	Addressed in Overall Assessment, and sections 1, 4, 5 and in description of use cases.
Adequacy of incorporation of feedback on operations and user experience into further research and development (O2R)	Addressed in Overall Assessment, and sections 1, 4, 5 and in description of use cases.
MET's contribution to and benefits from the most relevant / important research networks, and research cooperation nationally and internationally	Addressed in section 1, and specifically 1.5
MET's research alignment with, positioned for, benefit from and contribution to international research programs and service deliveries (particular emphasis on EU research programs and Copernicus)	Addressed in section 1 and specifically 1.5
MET's ability to attract, develop and retain research talents (national and international level)	Addressed in section 1.6, but hampered by limited information provided in the self-assessment
Extent to which research results were communicated to governmental authorities and general public	Addressed in section 4 and 5
Main research contributions from MET Norway over the past 5 years	Examples mentioned throughout the evaluation

1. Strategy, resources, and organisation of research

It is excellent to see that the administrative unit chose to focus on research-based services and value-chain approaches in their strategy. This reflects their strength, including their contribution to the delivery of operational services and an interdisciplinary work force. However, from the selfassessment alone it was difficult for the evaluation committee to identify a clear and cohesive strategy, and it was not always clear how research is prioritised to maximise impact.

The unit is composed of three different groups that have quite different profiles. Collaboration within the unit appears to be mostly on technical aspects such as provision of data and services. It is less obvious from the material presented to the evaluation committee how the three groups collaborate on cross-cutting research topics. National and international collaboration, particularly, is a key part of the unit's strategy that they pursue very successfully. This includes collaboration in the context of third-party funded projects (e.g., Copernicus and Horizon Europe) and international organisations such as WMO, EUMETSAT and ECMWF. The strong reliance on third-party funding is considered a risk by the evaluation committee, given that (i) the funding situation may change, (ii)

activities critical to the implementation of the unit's strategy may not be covered by calls, and (iii) rapid response to emerging developments can be hampered.

Reviewing the effectiveness of the management approaches taken by the unit should be given a high priority as part of the further development of the strategy.

The unit is a strong contributor to major national and international infrastructures, which they also use effectively to accomplish their strategic goals. Prominent examples include NorESM for the modelling part and SIOS as an observational infrastructure.

The lack of detailed information on research staff was an issue for the evaluation. However, from the material presented and further clarifications there is evidence for a diverse and interdisciplinary workforce. The possibility of generating tangible impact beyond scientific publications, fostered through the focus on value-chain approaches, is a unique selling point of this unit, which should also increase its attractiveness as an employer.

1.1 Research Strategy

The self-assessment mentions several important strategic areas such as research-based services, value-chain approaches, and strategic partnerships. However, the self-assessment lacks some clarity in outlining a cohesive strategy. The unit's 10-year strategy, accessible on the website, on the other hand provides a more comprehensive description that can be used for guiding the organisation. The implementation of the strategy in form of annual work plans can be considered positive and allows sufficient flexibility for adjustments, if needed.

The degree to which actual activities are aligned with the strategic goals is challenging to ascertain from the self-assessment. Some of the research group reports suggest potential issues, including a lack of clarity in the strategy.

The unit exploits some promising technological developments, most obviously in the NWP group, such as Machine Learning (ML) and Digital Twins. For example, the unit is incorporating more datadriven approaches into forecasting, and the unit takes a leading role in developing the Extreme Digital Twin as part of the Destination Earth Initiative. However, there appears to be scope for more thoroughly exploring the disruptive potential of emerging technologies on topics related to climate and operational coastal oceanography.

Perhaps somewhat surprisingly, not much is mentioned in the SWOT analysis on opportunities that the ongoing technological transformation brings. In fact, future SWOT analyses may benefit from a generally more forward-looking approach.

1.2 Organisation of research

The research and innovation activities in the administrative unit are mainly organised in two departments, Development Centre for Weather Forecasting and the Research and Development Department, which for this evaluation are broken down into three research groups. While the different departments have their own specific profiles there are joint activities such as the provision of data, products, and services.
From the self-assessment it is not entirely clear how the different research groups are managed. However, the NWP group seems to work with flat hierarchies. While this can be a successful

management model, the research group assessments have raised some concerns about the effectiveness of the flat hierarchy. It is recommended to constantly monitor its efficiency and adjust if needed.

From the self-assessment it is not clear how resources are allocated for conducting research, contributing to the operational core, expanding capabilities, and providing consulting services.

It is very promising to see that social scientists work alongside natural scientists in some part of the administrative unit. However, from the material presented it is not that obvious how this has made a difference. It is recommended to document and report success stories emerging from such collaborations, more thoroughly in the future.

The different research groups within the administrative unit seem to operate relatively independently, and a coherent strategy, in the organisational sense, is not clearly discernible from the information provided to the panels. Considering joint activities, that cut across the different groups of this administrative unit, such as extreme weather in a warming world, may be worth pursuing.

The success of this unit depends crucially on cooperation with national, European, and international partners. The members of unit are aware of this fact, and promising collaborations have been presented to the evaluation committee.

1.3 Research funding

The administrative unit demonstrates overall success in securing third-party funding, with a substantial portion of its budget sourced competitively from research grants and industry funding. Key funding contributors include the Research Council of Norway, Horizon Europe, Copernicus, and the European Space Agency (ESA).

The distribution of success in generating third-party funding among the research groups remains unclear. This as an area requiring further clarification, potentially through the identification of specific indicators.

The unit actively participates at all levels in international projects, exemplified by its leadership roles in some projects (e.g., Extreme Twin in Destination Earth), showcasing both quality and leadership skills.

The self-assessment acknowledges the challenge of relying heavily on external funding, considering it a significant threat that may limit the full exploitation of certain opportunities in areas with high societal impact for which external funding is not readily available.

The unit's operational centre status is acknowledged as a considerable advantage, facilitating invitations to projects due to efficient outcome delivery and integration into operational production chains. However, effective engagement with diverse partners, including research universities, remains a challenge (be considered for active scientific participation rather than more technical involvement). The evaluation committee is supportive of the unit’s ambition to partner in consortia not only for technical and operational reasons, but also as an active scientific partner adding excellence in research.

1.4 Use of infrastructures

The unit plays a significant role in contributing to various infrastructures. The unit also uses these infrastructures extensively for its own research.

INES (Infrastructure for Norwegian Earth System Modelling) is led by MET Norway in collaboration with NORCE. This initiative aims to facilitate the maintenance and advancement of NorESM, ensuring that Norwegian scientists, including scientists within the unit, have access to a state-ofthe-art earth system model. The evaluation committee recommends that the contributions of the different Norwegian partners of this important software infrastructure (along with its use in CMIP) are explained more clearly. Furthermore, it is recommended to constantly review the availability and more generally developments (e.g., cloud computing) of high-performance computing resources, both in Norway and beyond. The involvement on the development and use of Digital Twins is seen very positively by the evaluation committee.

Important observational infrastructures that this unit uses and to which it successfully contributes include NorDataNet, SIOS, and NorSOOP.

In addition, the unit hosts and makes substantial contributions to critical infrastructures in the context of international organisations such as WMO, EUMETSAT and ECMWF. These collaborations have the potential to generate widespread impact.

1.5 National and international collaboration

Collaboration is a key strength of the unit, evident at the national level with a growing presence, and notably strong at the European and international levels, driving its strategic objectives and fostering high-quality research. Particularly at the European level, the unit demonstrates strong connectivity. The description of the Norwegian research ecosystem is somewhat limited in the text. There is a more explicit focus at the European level.

The unit actively participates in numerous European projects and maintains robust engagement with international organisations such as ECMWF, EUMETSAT, and WMO.

The NorESM collaboration involves multiple Norwegian universities and institutes, with this administrative unit playing a pivotal role in this endeavour. They oversee the hosting and management of the modelling system, contributing to the infrastructure. During the evaluative period, there was an ongoing effort to secure funding through a Research Council application for the further development of NorESM. Running this infrastructure is envisioned as a central contribution to benefit other scientists and the broader university sector.

1.6 Research staff

The self-assessment lacks specific details on research personnel (in this part of the self-assessment FAIR principles are mentioned). Therefore, it was difficult for the evaluation committee to assess the extent to which this unit can attract, develop and keep excellent national and international research talents. In addition, the approach to EDI issues, as specified in the self-evaluation, seems somewhat vague. Some of these topics were clarified during the interview stage of the evaluation.

The unit has forged partnerships with various Norwegian universities—four in Oslo, two in Belgium, and at least one in Tromsø—resulting in the establishment of adjunct professorships. These collaborations entail the provision of courses aligned with their research, attracting students who subsequently contribute to extended projects. Furthermore, the unit actively involves Ph.D. students, fostering connections beyond the scope of these adjunct professors, encompassing collaboration with private and other universities. The ability of the unit to provide operational services is certainly attracting scientists who are willing to generate tangible impacts.

2. Research production, quality and integrity

From the bibliometrics provided to the evaluation committee, an upward trajectory since 2015 in the number of publications in discernible, with the impact of these publications slightly surpassing the average obtained for similar institutes in Norway. For publications in high-impact journals, scientists from the unit primarily contribute as co-authors within larger collaborations. This was observed for many other institutes evaluated by the evaluation committee.

According to the research group assessment, there is variability in scientific quality among the research groups.

The extent to which the unit advances the state of the art is not clearly discernible from the provided information. As indicated by the research group assessments, certain segments of the unit perform at an average level, while others exhibit higher performance. Overall, there is limited evidence of true leadership by international standards. Concerns arise regarding the potential underperformance of certain unit segments, judging from the presented information.

The unit maintains research integrity by implementing well-established practices at the Norwegian level, indicating a very good approach.

2.1 Research quality and integrity

Research group Centre for Weather Forecasting overall assessment

Grades reflect a department that is not realising its full potential. Or at least the evaluation committee did not find the information required to judge properly if they are. Strengths include a novel approach of mixing scientists and social scientists and their connection to operational services. Weaknesses include lack of evidence of high-quality scientific outputs and lack of evidence of quality in research-to-operations.

Research group Model and Climate analysis & Climate and Air-quality Research and Development Department overall assessment

The group is doing good work in several areas, most notably the areas of downscaling for future climate projections and statistical approaches to ensemble modelling. For its size the group produces good output, although it was very difficult to assess their contribution because of the limited information provided in the self-assessment. The lack of information on climate services was particularly disappointing as there is good scope here for demonstrating value to society.

Research group Ocean-coast Remote Sensing Research and Development Department overall assessment

The group generates excellent research and makes outstanding contributions to society and stakeholders. It is well known internationally for its competence in marine forecasts and wave dynamics. However, it is a large group and without a clear strategy or the vague description of the benchmarks it is impossible to say what parts of the group contribute to which goal.

2.2. Open Science

The unit is a pioneer in open data and takes a leading role in establishing FAIR principles. It prioritises open access and open source, aligning with a free and open data policy. Upholding IT principles, the unit emphasises free and open-source software development. The preference for open-source solutions is maintained unless proprietary options demonstrate significant documented benefits. It also values open peer review to foster scientific transparency, regularly utilised by its scientists when appropriate. The commitment to these principles ensures data and contributions remain accessible and beneficial to society as a digital common good.

While the unit is fully aware of the potential of open software, from the bibliometrics presented to the evaluation committee there is room for further increasing the number of open publications.

3. Diversity and equality

The gender balance varies among the different research groups, with some demonstrating excellent diversity, while others have opportunities for improvement, particularly at the most senior research level (e.g. NWP).

The workforce is highly international and interdisciplinary. Notably, the unit boasts a relatively large number of social scientists.

To enhance diversity and equality, the unit has implemented measures and reports relevant statistics in its annual reports. Positive discrimination practices are in place for certain groups, including the routine invitation of at least one qualified applicant from each group. Additionally, the unit has a policy requiring a minimum of two qualified female candidates for interviews. Overall, it is evident that there has been a significant number of female hires in recent years. It is not clear to the evaluation committee, however, whether the unit has an external board that is regularly presented with these indicators. If not, then the unit may consider reporting developments in diversity and equality to external advisors.

4. Relevance to institutional and sectorial purposes

Overall, the unit makes a very good contribution to institutional and sectorial purposes.

The unit broadly categorises its focus into the sectors of operational meteorology, oceanography, and climate, with a strong emphasis on operational services, especially in forecast provision. While

climate service products, such as intensity duration frequency (IDF), are highlighted as an example of sectorial impacts, more compelling instances are elaborated in the impact cases.

Acknowledging the need for high-quality innovation to realise ambitious goals in services and products, the unit prioritises research and development activities. The primary thrust is directed towards the public sector, emphasising free services, while research and development efforts in the commercial field are relatively limited. An exception lies in the extensive project portfolio contributing to Copernicus services, organised under commercial regulations by the European Commission.

Despite having the potential to contribute to "policy development", in the corresponding section in the self-assessment the unit primarily summarises information already presented in the document. Tangible success stories are lacking, representing a missed opportunity given the unit's significant potential.

5. Relevance to society

The unit possesses significant potential for societal contributions, particularly due to its emphasis on value chains and the proximity to operations and climate services. Providing information across various time scales, from daily to centennial, is potentially a distinctive advantage that could be further strengthened.

The unit's expertise in carrying out research that results in enhanced weather and environmental forecasts is crucial for society, underscoring the unit’s relevance within the value chain framework. However, the evaluation committee raised a concern that there is a lack of evidence of research leading to impact both societal and commercialisation.

Through modelling endeavours, the unit actively contributes to IPCC reports (e.g., CMIP6 and CORDEX). While the extent to which critical decisions rely on the climate services offered remains somewhat unclear, the inherent potential for substantial impact is evident. In this context, the unit is invited to critically assess the impact of these modelling activities since their impact might be perceived more as enabling science rather than directly influencing outcomes.

Comments to impact case 1: YR.no

Yr.no has been remarkably successful since its inception in 2007, gaining global recognition and numerous accolades. Notably, it received two prestigious WeatherApp awards from WMO in December 2020: the “Award for originality and innovation” and the “Award for submissions from public service NMHSs” (shared with MeteoSwiss).

This weather service has been widely utilised, boasting over 10 million unique users weekly. The data it provides is instrumental in daily decision-making processes. Yr.no stands out for its researchdriven approach, aligning its focus with the needs of its diverse user base.

Acknowledging its impact, Yr.no has been honoured with the trust of the Norwegian population, as evidenced by a yearly user survey. In 2022, the service reached an impressive 70% trust rating among a representative group of the Norwegian population.

Despite its success, there must be constant awareness that provision of weather information is a fast-changing and competitive field.

Comments to impact case 2: Satellite-based monitoring of the global sea ice cover

The system, developed for EUMETSAT, is generally deemed very good. MET Norway operates this service as a continuous 24/7 monitoring system for global sea ice cover using satellite data. The climate information derived from this monitoring plays a role in influencing IPCC and WMO climate assessments, informing European policy makers, supporting climate services, and reaching the wider public.

This work is specifically highlighted for its four key impacts: contributing to IPCC assessments, enriching WMO annual climate reports, aiding operational climate services, and engaging with the broader public. Notably, sea-ice indicators are disseminated to the public through MET Norway's web pages, monthly weather reports, and various social media platforms.

However, amid similar offerings from other sources, there arises a question about the unique selling point of this system, prompting a consideration for future enhancements.

Comments to impact case 3: Climate Future Assessment

Contributing to CMIP6 and hence IPCC has proven valuable, particularly through the involvement of NorESM (Norwegian Earth System Model) simulations. The insights gained from NorESM have significantly enhanced our understanding of climate change, providing added confidence in predicting future climate patterns, especially the regional aspects like Arctic amplification. This heightened confidence serves as a foundation for strategic planning in transitioning the global energy system away from fossil fuels and informs climate adaptation reports.

Currently, NorESM's climate simulations are instrumental in downscaling global scenarios to predict future local conditions in Norway. This is part of the European CORDEX initiative and aligns with the preparation of this unit's renewed Klima i Norge 2100 report.

The extensive impact of NorESM is evident in numerous scientific publications, with over 600 peerreviewed articles utilising NorESM results for climate analysis and scenario assessments by the end of 2022. However, the specific roles of various Norwegian partners in the IPCC contribution using NorESM remain unclear.

For the future, the unit should deliberate the prospect of contributing to CMIP7. Such a decision would necessitate significant enhancements in the new modelling system, surpassing what was available for CMIP6 to ensure the endeavour’s worthiness.

Comments to impact case 4: Coastal ocean forecasting, Norkyst

In collaboration with IMR and NIVA, the unit developed the high-resolution coastal ocean circulation model, "Norkyst," which became operational in 2011. Serving as the national counterpart to the Copernicus Marine Service, Norkyst is integral to various contingency models, including search-and-rescue operations, oil spill response, and monitoring ship drift. Additionally, it underpins the "trafikklyssystemet," a tool regulating the salmon aquaculture industry's growth. The model's output data, available for free, play a crucial role in diverse applications such as R&D, ecosystem assessments, ship routing, and sound speed profile analyses.

The unit assumes responsibility for operational ocean forecasting along the Norwegian coast and adjacent seas. Three of Norkyst's primary applications encompass managing the salmon aquaculture industry, conducting drift simulations for scenarios like oil spills, and supporting search-and-rescue operations. Furthermore, it provides ocean and coastal forecasts to the general public, including storm surge warnings.

List of research groups at the Administrative Unit

Institution	Administrative Unit	Research Groups
Norwegian Meteorological Institute	Weather and Climate	Centre for Weather Forecasting
		Model and Climate analysis & Climate and Air-quality Research and Development Department
		Ocean-coast Remote Sensing Research and Development Department

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 (see appendix 3 Evaluation Protocol) that guided the process
- Terms of Reference
- Administrative Unit's self-assessment report
- Administrative Unit's impact cases
- Administrative Unit's research groups evaluation reports
- Bibliometric data
- Personnel and funding data
- Data from Norwegian student and teacher surveys

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 hourlong 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 virtually without adjustments.

Limitations

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

Appendices (link to website)

1. Description of the evaluation of EVALNAT
2. Invitation to the evaluation including address list
3. Evaluation protocol
4. Self-assessment administrative units
5. Grading scale for research groups

Website: https://www.forskningsradet.no/tall-analyse/evalueringer/fag-tema/naturvitenskap/

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