The Research Council of Norway

Evaluation of the Norwegian Centres of Excellence (SFF) Funding Scheme

Self-assessment report from the Research Council of Norway

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Evaluation

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Preface

In its allocation letter to the Research Council of Norway (RCN) for 2019 the Norwegian Ministry of Education and Research states that the RCN is expected to conduct an evaluation of the Norwegian Centres of Excellence scheme (*Sentre for fremragende forskning* (SFF)). In response, the RCN has initiated an evaluation of the SFF scheme. The mandate for the evaluation can be found in the appendix.

As described in the mandate, the evaluation will be conducted by an international scientific evaluation committee. Based on background material commissioned specifically for the evaluation and other available material, the evaluation committee will write a report that describes their assessment of the SFF scheme. The evaluation by the committee will focus on the following questions:

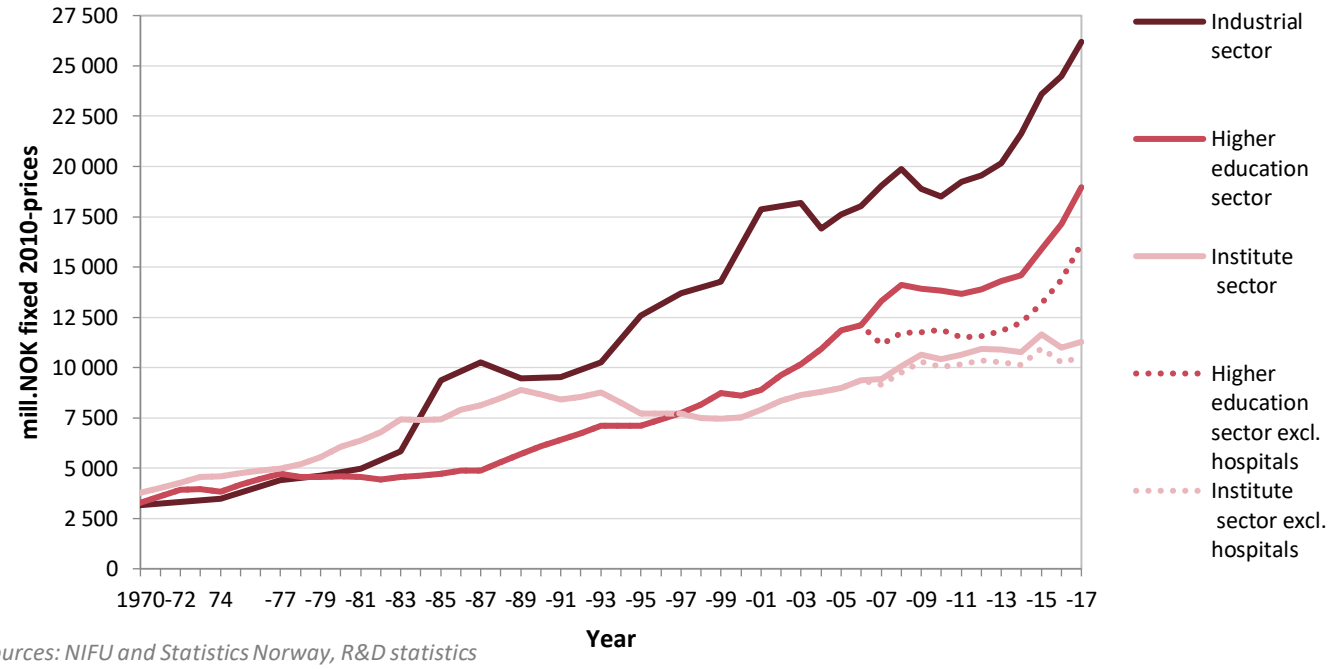
- Has the SFF scheme helped to enhance scientific quality?
- Has the SFF scheme had any impacts on the research system?
- Recommendations for further development of the scheme.

The following report is written by the RCN administration and serves as part of the background material for the evaluation performed by the evaluation committee.

1 The Norwegian research system

1.1 R&D expenditure in Norway

In 2017, R&D expenditure in Norway amounted to 2.09% of GDP.[1] This is slightly below the average for OECD countries (2.37%) and somewhat above EU 28 (1.96%). Norwegian R&D is characterised by a relatively high share of public funding (47%) and a lower intensity of private spending (40%). Funding from abroad accounts for 9% of R&D investments, whereas 4% is unspecified. The total R&D spending in Norway also appears modest in a Nordic context with NOK 13,211 spent per capita, compared to Sweden and Denmark, which spend NOK 17,223 and NOK 16,721, respectively. From a comparatively low level, the R&D spending has been on the rise both in terms of real spending (Figure 1[2]) and share of GDP. Over the last four years, the increase in funding has been particularly strong in the industrial and higher education sectors, while the institute sector shows a slower growth rate with relative stability in spending over the last eight years.



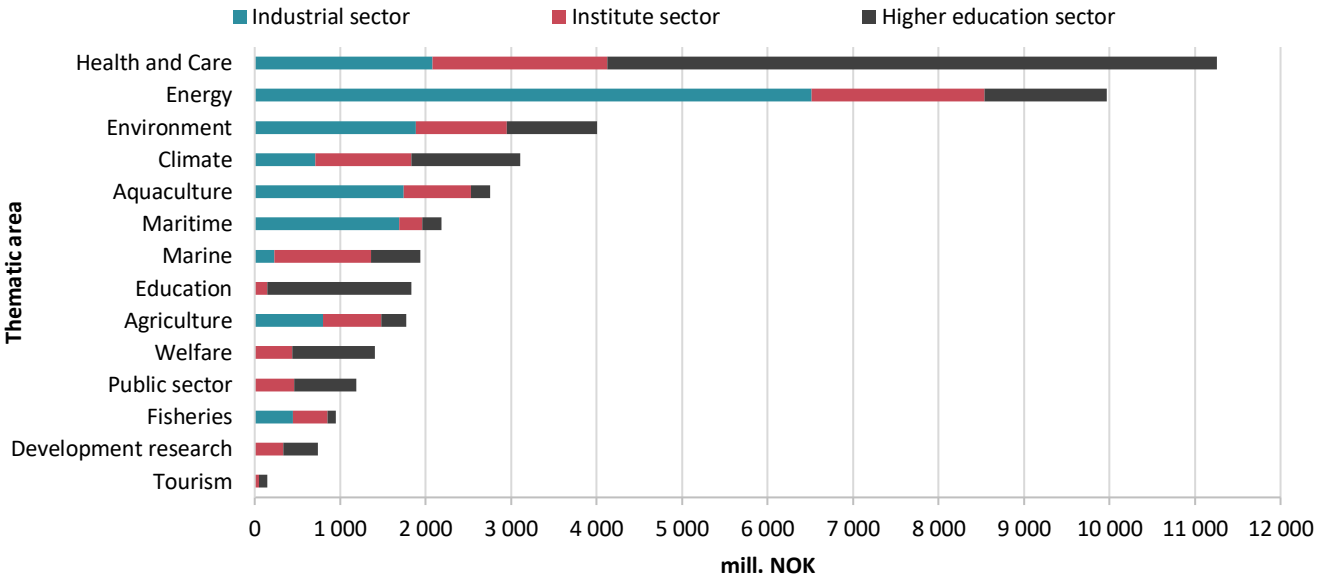
Sources: NIFU and Statistics Norway, R&D statistics

Figure 1 R&D expenditure by sector of performance. Total Norwegian R&D expenditure by performing sector in mill. NOK (fixed 2010 prices), in the period 1970-2017

By volume, the most important thematic areas of Norwegian research are health and care, and energy, each with an annual spending of around NOK 10 billion (2017). The areas environment and climate, aquaculture, maritime and marine also attract substantial investments in the range of NOK 4 to 2 billion (Figure 2).

The Research Council of Norway (RCN) channels funding from all ministries to all research sectors in Norway and has an annual budget of around NOK 10 billion.

[1] https://www.nifu.no/fou-statistiske/fou-statistikk/fou-lommefolder/
[2] https://nifu.brage.unit.no/nifu-xmlui/handle/11250/2600611



Source: NIFU and Statistics Norway, R&D statistics

Figure 2 R&D expenditure by thematic area and performing sector. Total R&D expenditure in Norway (mill. NOK) by thematic area and performing sector in 2017.

1.2 Public funding streams

As explained above, R&D financing is fairly equally distributed between public and private funds in Norway. In this chapter, we will mainly look at government funding. This is the most relevant source of funding for basic research as there are few private research funding organisations in Norway.

Government funding in Norway is provided by all ministries according to what is known as the 'sector principle', meaning that each ministry should take responsibility for research in its own sector. In its 2012 evaluation of the RCN, Technopolis Group provides an interesting discussion of the pros and cons of this system.[3] Based on interviews with both the RCN and the ministries, it finds that the general understanding of the sector principle is fairly uniform among the different actors in the system, even if there are different views on its consequences in terms of responsibility for financing basic research (p. 62):

> The general idea that each ministry should take responsibility for research in its sector is almost universally agreed in Norway. […] The alternative of centralising responsibility for research in a science ministry or something similar is unusual. While there is no clear proof, the argument that it is better to have 16 ministries supporting the idea of research than to have one fighting the other 15 to maximize the national research budget is attractive.
>
> We can think in terms of two kinds of sector principle for research. One is a 'narrow' principle that each ministry should pay for and secure or procure the knowledge it needs to run its daily business – of regulating and making policy. The other is a 'large' principle that gives each ministry in addition the responsibility to make sure Norway has research capacity (in terms of a lively community of applied and pure researchers) working in and for its sector. Without this, there is no guarantee that the small sector principle can be followed in future. Ministries varied in the

[3] Evaluation of the Research Council of Norway. Background Report No 3. Ministry Steering of the Research Council of Norway. Technopolis (2012)

extent to which they see the large principle as applying to them. Clarifying this would improve the steering of RCN and reduce ambiguity in negotiating ministries' research budgets.

In general, other ministries tended to feel that [the] responsibility [of the Ministry education and for research] for basic research implied that they themselves did not need to play a role in funding the growth of fundamental knowledge or research communities. The role of the state in governing the research and innovation system must involve providing both 'bottom up' basic research that is not thematically targeted and basic research relevant to national needs – in other words, both Bohr's and Pasteur's Quadrants in Stokes' terminology. Clearly, the ministries combined must spend enough on basic research to meet national needs – irrespective of whose budget is involved.

We will return to the discussion of the role of basic research in sectorially-oriented programmes later in this report. Let us now turn to the actual funding streams. The total public budget for research is distributed by various ministries (Figure 3). The Ministry of Education and Research (KD) is by far the greatest contributor to R&D activities, accounting for almost two thirds of the total with NOK 20 billion. The Ministry of Health and Care Services (HOD) and the Ministry of Trade, Industry and Fisheries (NFD) come next in funding volume, with around NOK 5 and 4 billion in annual spending, respectively. Other ministries with substantial contributions to research include the Ministry of Foreign Affairs (UD), the Ministry of Defence (FD), the Ministry of Local Government and Modernisation (KMD), the Ministry of Climate and Environment (KLD), the Ministry of Petroleum and Energy (OED), and the Ministry of Agriculture and Food (LMD).

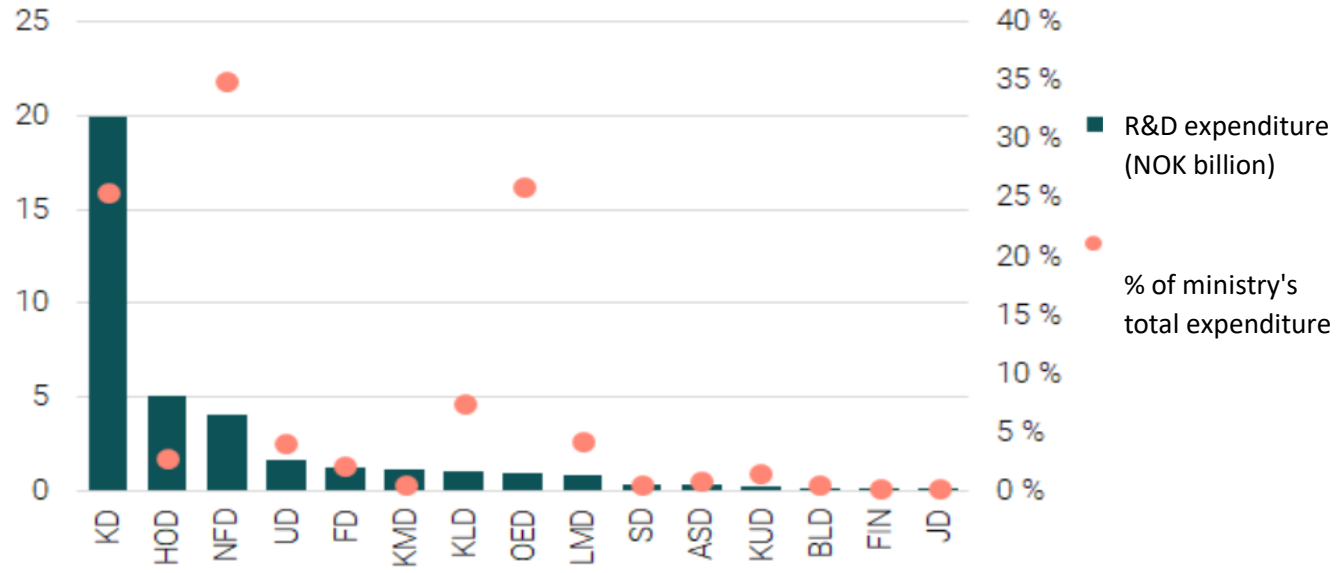


Figure 3 R&D budgets and share of total spending per ministry (2019 Public R&D budget (green bars, billion NOK) per ministry. Percentage of each ministry's total expenditure is superimposed (pink dots). Source: NIFU, Statsbudsjettanalysen.

As explained above, the RCN receives funding for R&D from close to all the ministries, amounting to 23% of the total public spending in 2017, excluding core funding to research institutes channelled through RCN (Figure 4). The RCN provides funding to all sectors with equal shares of 45% to the higher education sector and the independent research institute sector. Direct funding of projects in industry accounts for only 10% of RCN spending, but it should be noted that many of the projects funded by the RCN in the institute sector include industrial partners. The higher education sector is by far the greatest beneficiary receiving 66% of the public budget for research. The largest part of this funding is

channelled directly from the ministry to the higher education institutions (HEI) as core funding, amounting to around 70% of the total public contribution to this sector.

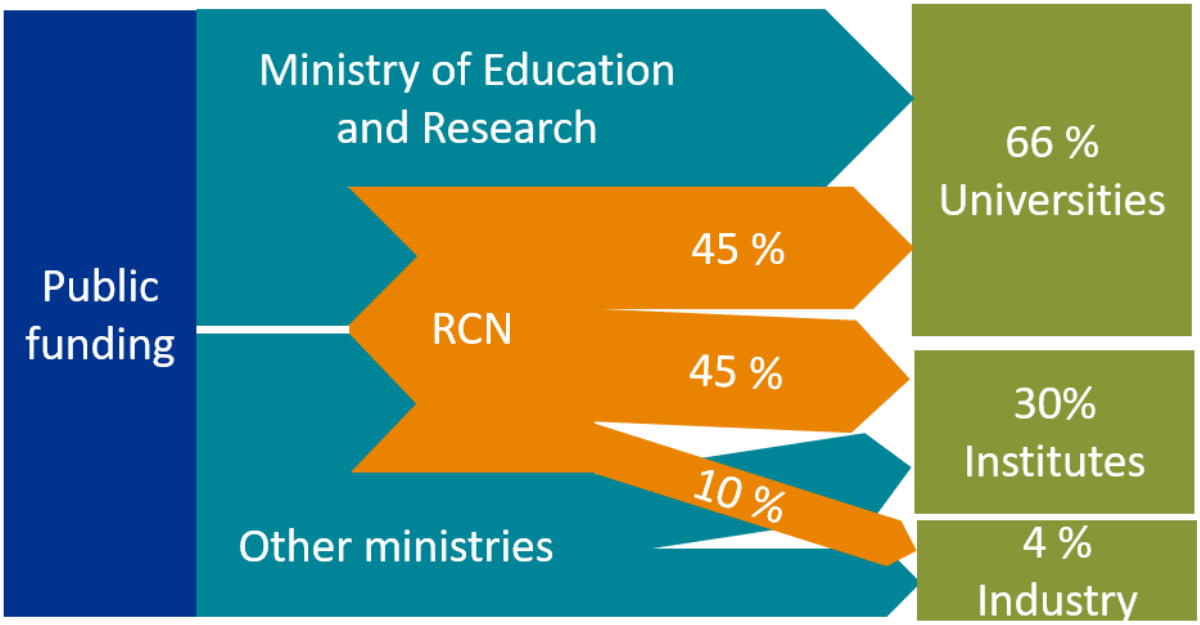


Figure 4 R&D funding streams for public budgets by channel and receiving sectors (2017). Schematic view of R&D funding streams channelled through Norwegian ministries and the RCN. Universities include university hospitals and Institutes include other health trusts and PNP hospitals.

1.2.1 Budget allocations from the Ministry of Education and Research

The Ministry of Education and Research holds a special responsibility for the development of high quality basic research in Norway. As mentioned above, the larger part of the ministry's funding of basic research is allocated directly to the higher education sector. The high level of basic funding allocated to universities can be seen as a guarantee of institutional autonomy and a prerequisite for high quality research-based education. The Ministry of Education and Research's budget allocation to the RCN can be classified into three categories on the basis of the ministry's different roles:

I. Funds for basic research (sectoral responsibility for research)
II. Funds for research on education (sectoral responsibility for education at all levels)
III. Funds for cross-sectoral strategic research (coordinating role for research policy)

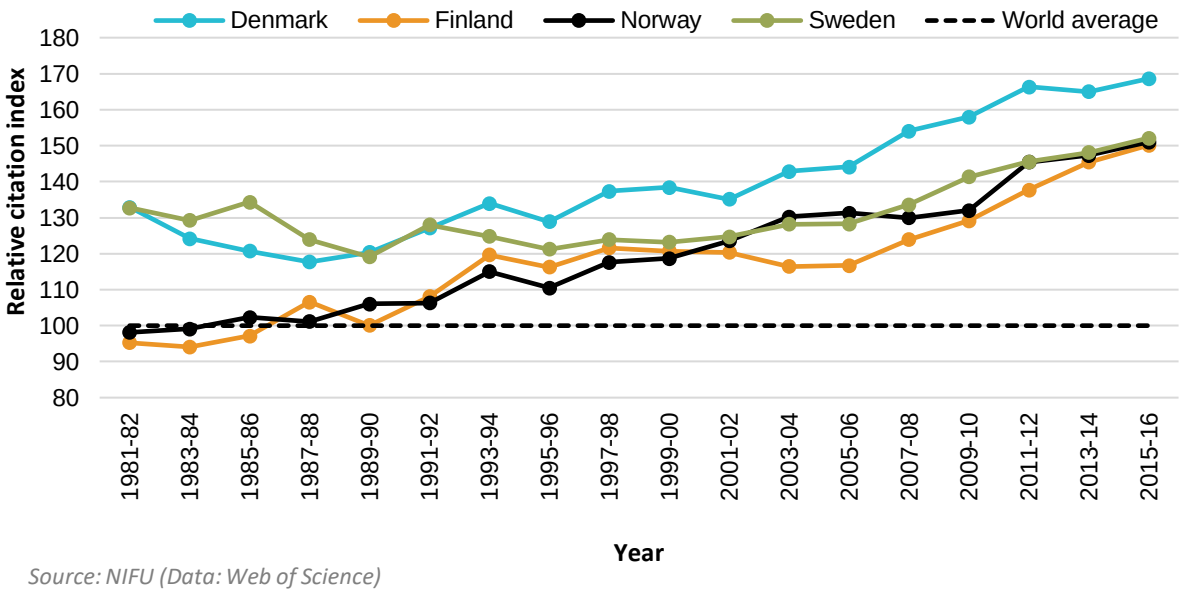
We will concentrate here on how the RCN makes use of the funding for basic research (post 52) and strategic research (post 53). These two budget lines have historically been of comparable size, now amounting to just above NOK 1.6 billion (2019). The larger part of the basic research funds is used for research projects in the open arena (FRIPRO, NOK 954 mill.) and the SFF scheme (NOK 352 mill.). The remaining NOK 3-400 million is used in a variety of policy instruments for enhancement of research quality, such as national research evaluation, targeted basic research programmes, and programmes for researcher training and mobility. Over the recent years, the allocation of funds within this budget line has prioritised the open arena and SFF scheme over other policy instruments for high quality research.

The funds for strategic research are used to support large-scale programmes addressing cross-sectorial challenges like climate change, research on renewable energy and Norway's strong engagement in polar and marine research. These large-scale programmes constitute important policy instruments for the follow-up of structural priorities set out in the Norwegian Long-Term Plan for Research and Higher

Education (LTP). Such programmes are mainly funded by ministries with responsibility for sectors affected by the societal challenge or strategic ambition defining the programme. Additional funding from the Ministry of Education and Research is attributed based on the following criteria: 1) contributes to the follow-up of the Long-Term Plan for Research and Higher Education, 2) provides the RCN flexibility in supporting long-term systematic and strategic changes, 3) supports research of high scientific quality.[4]

1.3 Research performance

Measured by citation impact, the performance of Norwegian research has developed from a position below the international average (normalised to 100) in the early 1980s to a citation impact of around 150 (Figure 5). The increase in relative citations is a common trend among most OECD countries due to the influx of new research nations with less citations in the international research system. It is still noteworthy that Norway, like Finland, is now at the same level as Sweden. Sweden, the former leader in research among the Nordic countries, was overtaken by the new rising star Denmark already in the early 1990s.



Source: NIFU (Data: Web of Science)

Figure 5 Relative citation index, Nordic countries. Relative citation indices for four Nordic countries (solid lines) plotted across years, spanning 1981-2016. World average = 100 (dashed line). The index is based on publication years and accumulated number of citations up to and including 2017. The index is weighted according to each country's relative field distribution of articles.

Despite the improved performance indicated by an increased citation impact, challenges remain at the systemic level that may more generally hamper the further development of a culture of excellence. These include the organisation and governance of the higher education sector, government policy for research and higher education, funding streams for basic research and the balance within the RCN of

[4] *Veileder for sektoransvaret for forskning* (Guidelines for the sectoral responsibility of research). Ministry of Education and Research 22.08.2017.
https://www.regjeringen.no/contentassets/8dc0dcdbbf1d4cbb833b09372cfa7dd1/veileder-for-sektoransvaret-for-forskning_nett.pdf

strategic top-down research programmes and bottom-up funding of investigator-initiated projects (FRIPRO).

The RCN has performed periodic evaluations of Norwegian research on a subject-by-subject basis since the late 1990s. Common observations described in these subject-specific evaluations (*fagevalueringer*) are that there are few outstanding groups, that the general level of funding is quite generous but with lower than expected output, and that a relatively high number of higher education institutions do not possess the critical mass of resources to produce research at a high international level. Nonetheless, there is a general sense of improvement from the first round of evaluations to the second round completed within the last decade.

Structural reforms in the Higher Education sector

The challenge of securing a high quality research base throughout a rather fragmented higher education sector has been on the political agenda in Norway since at least 2006, when the Government mandated a committee under the leadership of professor Steinar Stjernø to propose structural reforms of the higher education sector that, among other aims, would secure research of high quality in robust research environments at all institutions.[5] The recommendations of the committee were met with strong opposition from the sector, which saw its institutional autonomy challenged, and was later put aside by the government. A new attempt at addressing the need for structural reform was made under a new government in 2015, proposing a more incremental approach to the challenge of creating larger and more robust institutions. The starting signal of this reform process was given in a white paper named *Concentration for quality,*[6] which encouraged the institutions to take strategic leadership and made it clear that it was up to the institutions themselves to look for partners that would allow them to pass quantitative and qualitative thresholds defined by the government. This semi-voluntary approach was surprisingly efficient in transforming the higher education landscape in Norway, reducing the total number of public universities and university colleges from 33 to 21 through mergers. In a parallel process starting in 2005, many of the former university colleges have climbed up to university status, increasing the number of Norwegian universities from 4 to 10.

In the remainder of this chapter, we summarise the findings of two reports discussing the challenges associated with raising the quality of Norwegian research from different perspectives.

Preconditions for excellence in the Norwegian R&D system

In a 2014 report commissioned by the RCN,[7] Mats Benner and Gunnar Öquist investigated the preconditions for 'breakthrough research' in Norway. The authors start out with basic assumptions about the foundations of 'breakthrough research': It is dependent on a policy system which operates with clear-cut goals and consistent expectations of scientific quality, where the health and standing of the nation's research environments are central concerns across the political spectrum. A key concern in the report is how to strengthen the quality culture at the universities. The Norwegian higher education (HE) sector is compared to an ideal type of university that is 'led by strong academic scholars with visions and with the legitimacy to lead' and provides 'a "protected space" for faculty to pursue independent research lines under the aegis of resourceful environments' and pursue 'open recruitment strategies and place a premium on mobility and circulation of people and ideas'. The

[5] *Sett under ett – Ny struktur i høyere utdanning*. NOU 2008:3.
[6] Meld. St. 18 (2014-2015) *Konsentrasjon for kvalitet — Strukturreform i universitets- og høyskolesektoren.*
[7] Room for increased ambitions? Governing breakthrough research in Norway 1990 – 2013 (2014).

report portraits the Norwegian research system as being of a good average quality but with limited impact on the frontiers of knowledge (page 3).

The current state of the HE sector in Norway is characterised by well-funded universities receiving approximately 70% basic funding, supported by a similarly well-financed research council, and with attractive academic positions where working hours are in most cases in principle shared equally between research and teaching. However, the end result is less impressive and counters the examples of Denmark, the Netherlands and Switzerland. Given the relatively generous basic funding, Benner & Öquist would expect universities to be able to prioritise resources and take control of their quality development, including resource redeployments according to quality differences. They find very limited evidence of such reallocations: resources seemed more or less fixed, with the deans, department heads and rectors responding incrementally to the financial blockages (page 16).

Other weak aspects of Norwegian research quality include university organisation. Resources seem not to be deployed productively, with large fractions of research conducted in small environments, primarily aiding teaching rather than engaging in cutting-edge research. Changes in the structure of education have also played in. The 'quality reform' in 2002 aligned Norwegian undergraduate education with the Bologna process and transformed it into a 3+2+3 year model. It was widely feared that this would compromise the associate professor and professor positions, swamping university professors' time with educational tasks and turning research into an extra activity. While an evaluation concluded that the relationship had not been altogether altered, it also concluded that teaching is a major part of the tasks of Norwegian faculty.[8]

Universities, on their part, raise concerns over limited room for action, with resources locked in, ever growing educational demands, and a search for external support which is flexible and constantly transformed. This perceived lack of control may seem paradoxical given the share of resources controlled by the universities themselves, but is a reflection of the relative 'poverty' at the departmental level, where funding is primarily tied to positions and where only a fraction of university researchers receive substantial additional funding. This can be compared to the situation in Denmark, the Netherlands and in particular Switzerland, where a limited number of tenured faculty are embedded in resourceful environments where they can be relatively sure of receiving additional support from external funders. On the other hand, they are also embedded in a highly competitive environment where most if not all faculty are high-performers and where academic leaders take full responsibility for the academic standing of 'their' units (page 18).

One explanation for the relatively weak conditions for Norwegian research is thus that university growth has primarily been driven by educational expansion, circumscribing the available time for quality research. In addition, rising administrative burdens seem to limit the freedom of action of Norwegian faculty more generally.[9] Increases in research resources have primarily been earmarked and under-funded, among other things for paid PhD positions. The expansion of PhD training seems to have increased the productivity of Norwegian research, propelled the introduction of more structured PhD programmes, and in effect doubled the number of PhD exams over a decade. It has also, however, absorbed a lot of resources and has not been met with a concomitant increase in funding for supervision.[10] Summing up the situation for Norwegian universities, Benner and Öquist hold that

[8] Kvalitetsreformen mellom undervisning og forskning. Rokkan-Senteret & NIFU STEP (2006).
[9] Handlingsrom for kvalitet. Kunnskapsdepartementet (2010).
[10] PhD education in a knowledge society. An evaluation of PhD education in Norway. NIFU 2012.

'Policies in the last decade have elevated a small group of eminent scholars and environments, but universities overall "underperform". Resources seem not to be deployed productively with large fractions of research conducted in small circumstances, primarily aiding teaching and not engaging in cutting-edge issues' (page 22).

The authors consider some of these deficiencies to be an effect of Norwegian research and higher education policy. The political system lacks a consistent focus on research quality and renewal. Instead, sectoral priorities are abundant, constraining the creative powers of Norwegian research and creating a culture of political expectations rather than creative energy (page 3). However, in the period from 2000 to 2014, they observe an increased political will to confront the structural problems of Norwegian research, but note that the option of making more radical redeployments of resources was rejected. The related issue of basic funding for Norwegian universities, including its composition and connection to research activity and quality, has also been discussed in several circumstances. All of this activity notwithstanding, the authors find few examples of a consorted stance towards enhancing research quality, which leads to a rather sinister conclusion: 'While much knowledge and wisdom has been afforded various investigations, we find only scant evidence of a coherent practical approach to quality and renewal in Norwegian research' (page 15). This political stalemate in policies aimed at research excellence can be seen as being lifted, at least partially, by the new policy instrument the Long-Term Plan (LTP) for Research and Higher Education, introduced as a part of the state budget for 2015 with a ten-year planning horizon (see below).

The outcomes of university policies in the first decade of the third millennium can be seen as a compromise and an alignment of different interests: the universities expressed repeatedly that they had seen their freedom of action delimited,[11] while the perception outside the universities was that money had been spread too evenly and that external funding programmes could not substitute for internal strategies and resource transfers. Referring to the 2012 evaluation of the RCN by Technopolis,[12] Benner & Öquist make it clear that the RCN cannot supersede internal planning, quality control and risk-taking within the universities.

The role of external funding from the RCN and other sources in strengthening the quality culture at the universities receives special attention by Benner & Öquist, who hold that a funding agency cannot be a systemic manager but must rely on a well-endowed and functional university system. They see a considerable risk of 'over-stretching' and 'over-planning' by the RCN, where programmes are too many and too complex, and intended to serve too many purposes, entailing a risk of diluting quality demands. The authors recommend that the RCN focus its efforts on roles and functions that the universities cannot fulfil themselves, and on aligning societal demands with strict scientific goals.

While endorsing the recommendation found in a string of Norwegian research evaluations for an expansion of funding for investigator-initiated proposals (FRIPRO), the authors make it clear that this adjustment may not be a panacea to the system-wide quality slack that was identified as the key challenge for Norwegian research governance. Without universities taking control of their research systems based on a sufficient floor funding, there is a risk that Norway will follow the paths of Sweden and Finland, where projects function as the main unit of academic activity and universities are reduced to 'research hotels' for scientists, without any overarching significant measures of leadership or quality control.

[11] Handlingsrom for kvalitet. Kunnskapsdepartementet (2010).
[12] A Good Council? Evaluation of the Research Council of Norway. Technopolis (2012).

Benner and Öquist also point to the relative lack of private funding as a limiting factor for the development of the Norwegian research system. As such, Norwegian private fortunes have been invested in prestigious prizes and awards rather than in developing an infrastructure for high-risk research (in line with the Welcome Trust in the UK, Howard Hughes foundation in the US, Knut and Alice Wallenberg foundation in Sweden etc.). There are exceptions to this rule (such as the Trond Mohn stiftelse/Bergens forskningsstiftelse), but they are few and too limited in their scale and scope to enhance the pluralism of Norwegian research governance (page 13).

On the role of RCN in fostering excellence – a recent critical perspective

In 2014, the newly elected government set a new focus on economic productivity to secure continued economic growth and welfare development in Norway. A commission led by Professor of Economics Jørn Rattsø was mandated to investigate the causes of the slowing down in productivity gains and propose measures to increase productivity. The work of this 'commission on productivity' (*Produktivitetskommisjonen*) was divided into two parts. The first part was primarily a fact-finding mission describing the development of productivity in Norway over the last decades, while in the second part, the commission was asked to focus on specific problems and suggest appropriate measures. Research and innovation policy was chosen as the main focal point of the commission's second report presented in 2016: *At a turning point – From a resource-based to a knowledge-based economy*.[13] Not surprisingly, the commission emphasised the role of ground-breaking research as a driving force behind economic development, and therefore recommended the government to focus more sharply on measures to support and increase research quality.

The commission observed that quality seemed to be given little weight in the distribution of basic funding between and within the universities. It recommended that university management receive a stronger mandate to redistribute resources among staff based on quality assessments, and suggested that subject-specific evaluations performed by the RCN could be used more systematically as a basis for such redistribution, similar to the system used in the UK Research Excellence Framework. The commission also commented on the balance at the RCN between strategic top-down research programmes and bottom-up funding of investigator-initiated projects. The commission criticised what it perceived to be a watering down of standards of research quality in RCN-funded projects by the introduction of a myriad of other goals and policy concerns defined by the different funding ministries. In its response to the commission, the RCN put forward that a concern for relevance and the potential societal impact of research are legitimate aspects of research policy.

According to the commission, the tension between research quality as a goal and criteria for the selection of projects and other more societally-oriented goals in RCN programmes could be traced back to the sector principle of research funding in Norway (discussed above). Admitting that the system has its flaws, the RCN put forward that this principle helps to strengthen the engagement in, and use of, research in sectorial policies. The RCN nonetheless acknowledged that the sector principle could result in a fragmentation of research programmes, sometimes with narrowly specified calls entailing an unhealthy restriction of competition.

[13] Ved et vendepunkt – Fra ressursøkonomi til kunnskapsøkonomi. Produktivitetskommisjonen (2016).

1.4 Renewal of research policies and instruments

In 2015, the government introduced a Long-Term Plan for Research and Higher Education (LTP) with a ten-year planning horizon, including binding budget targets in several areas for the first four-year period. The idea of a long-term plan including multi-year budgeting was first launched by the government in a white paper concerning research from 2013.[14] After a change in the government in late 2013, the first actual long-term plan was presented in late 2014.[15] This plan included a clear ambition to increase the funding available to promote excellent research: 'Norway has many good academic environments, along with a highly developed business community in a number of areas, but we have the potential to be even better. In addition to a general commitment to quality in research and higher education, the Government will prioritise special efforts in world-class science. This is necessary to stimulate more breakthroughs and greater international visibility for Norwegian research, as well as to benefit from the knowledge found among the foremost international experts' (p. 5, English version).

A clear target was set to increase the share used on R&D in the state budget until the public R&D investments reached 1% of GDP. This target was met already in 2016, partly due to a slower growth curve of GDP. Nonetheless, the government followed through the ambition to increase the investment in world-leading academic groups, especially through the funding instruments of the RCN. The largest investments were made in PhD recruitment positions with an increase of more than 600 research fellowships, research infrastructure with an increase of NOK 400 mill., and incentives to take part in highly competitive EU framework programmes with NOK 400 mill. In the same period, programmes related to research excellence at the RCN (SFF and FRIPRO) saw a cumulative increase in annual budgets of more than NOK 300 mill. (2018 compared to 2013), representing a nominal growth of 33% compared to a 26% increase in the total RCN budget (excluding basic funding for research institutes).

As foreseen by the first LTP, the government presented a revised long-term plan in late 2018 with a rolling ten-year planning horizon that included binding budgetary targets for the first four years.[16] Unlike the first LTP, this revised version did not include world-leading academic groups as a strategic priority, but included the ambition to increase quality of research on the basis of three overarching objectives that concern Norwegian research and higher education as a whole:

- enhancing competitiveness and innovation capacity
- tackling major societal challenges
- developing academic and research communities of outstanding quality

In addition, the LTP identifies five long-term priorities that 'reflect areas where Norway has a competitive advantage or a special need for knowledge'. These thematic priorities are:

- Seas and oceans
- Climate, the environment and clean energy
- Public sector renewal and better public services
- Enabling and industrial technologies
- Societal security and social cohesion in a globalised world

The objectives and strategic priorities of the LTP are intended to inform priorities also within the existing budgets of organisations that perform and finance research. In relation to the RCN, the LTP's

[14] Meld. St. 18 (2012–2013). Lange linjer – kunnskap gir muligheter.
[15] Meld. St. 7 (2014-2015). Long-term plan for research and higher education 2015-2024.
[16] Meld. St. 4 (2018-2019) Long term plan for research and higher education 2019-2028

steering signals are translated into budget priorities in the RCN's yearly proposal to the government for the new state budget on research.

In contrast to the first LTP period, the concrete budgetary targets for the upcoming four-year period (2020-2023) are concentrated around two ambitions: The development and use of new technologies (Teknologiløftet), and research for renewal of industries and adaptation to a post-carbon society (Næringsløftet).[17] These priorities are also reflected in the proposals by the RCN for the next state budget in 2021, which may leave less room for increased investments in ground-breaking research.

1.4.1 In search of increased leeway in RCN budgets

The report from the commission on productivity discussed above was later followed up by a government review (*områdegjennomgang*) of RCN activities conducted by a committee chaired by Siri Hatlen and with the lead author of the 2012 RCN evaluation included as one of its members.[18] The new committee was mandated to provide its assessment and recommendations on two main questions: 1) Whether funding possibilities for high-quality research projects at the RCN could be expanded by redirecting funding from thematic programmes to relevant high-quality projects submitted to the more competitive open arena for independent projects (FRIPRO), and 2) Whether the administration of RCN programmes was cost-effective. We will concentrate here on the answer to the first question.

The committee observed that the complexity of the RCN programme portfolio is high, with a multitude of calls for proposals containing varying requirements and assessment criteria. A simplification of this system is seen as a measure that could both reduce administrative costs and relax tensions between potentially conflicting programme goals and assessment criteria. In this process, the committee advised the RCN to focus on scientific quality as a more consistent criterion across all research programmes. More specifically, the committee suggested that the RCN could finance a larger number of the proposals submitted to the highly competitive open arena (FRIPRO) by moving relevant proposals to less competitive thematic programmes. This is seen as a measure to increase scientific quality in thematic programmes and give more room to other high-quality projects in the open arena.

Many of the organisational changes that have since been carried out in the RCN can be seen as a follow-up of the critical review of its funding practices conducted by the commission on productivity and its subsequent recommendations. A first reform was initiated at the end of the leadership of Arvid Hallén, reducing the number of thematic programmes and increasing the funding opportunities for basic research within them. In some cases, funding from programmes with a thematic focus, such as Information and Communication Technologies (ICT), was distributed through the open arena (FRIPRO).

Current CEO of the RCN John-Arne Røttingen introduced further reforms when he took over in 2017. This included a comprehensive change in the RCN's application process. All research-oriented projects (*forskerprosjekter*) were organised under one common process for both thematically-defined programmes and the open arena for curiosity-driven research. This united process was facilitated by a common set of criteria used in the assessment of all proposals. After the first assessment made by panels of experts (according to the criteria of excellence, impact and implementation), the proposals would in principle be candidates for funding from both thematic programmes and from the open arena, depending on their relevance. It is too early to assess the effects of this new assessment procedure since the first round of grants was distributed in December 2019.

[17] Meld. St. 4 (2018-2019). Long term plan for research and higher education 2019-2028
[18] Områdegjennomgang av Norges forskningsråd (2017)

The RCN's funding opportunities as they are today (2020), is depicted in **Feil! Fant ikke referansekilden.**Figure 6. These cover the spectrum from curiosity-driven open arenas to thematic or field-restricted arenas. There are two open arenas, one primarily geared towards researchers in the institute and higher education sectors (**Feil! Fant ikke referansekilden.**Figure 6, right-hand side), and the other for business-oriented research (**Feil! Fant ikke referansekilden.**Figure 6, left-hand side). The thematic portfolios (**Feil! Fant ikke referansekilden.**Figure 6, middle) cover research performed in all three sectors. These portfolios correspond to a large extent to the priorities set out in the government's LTP.

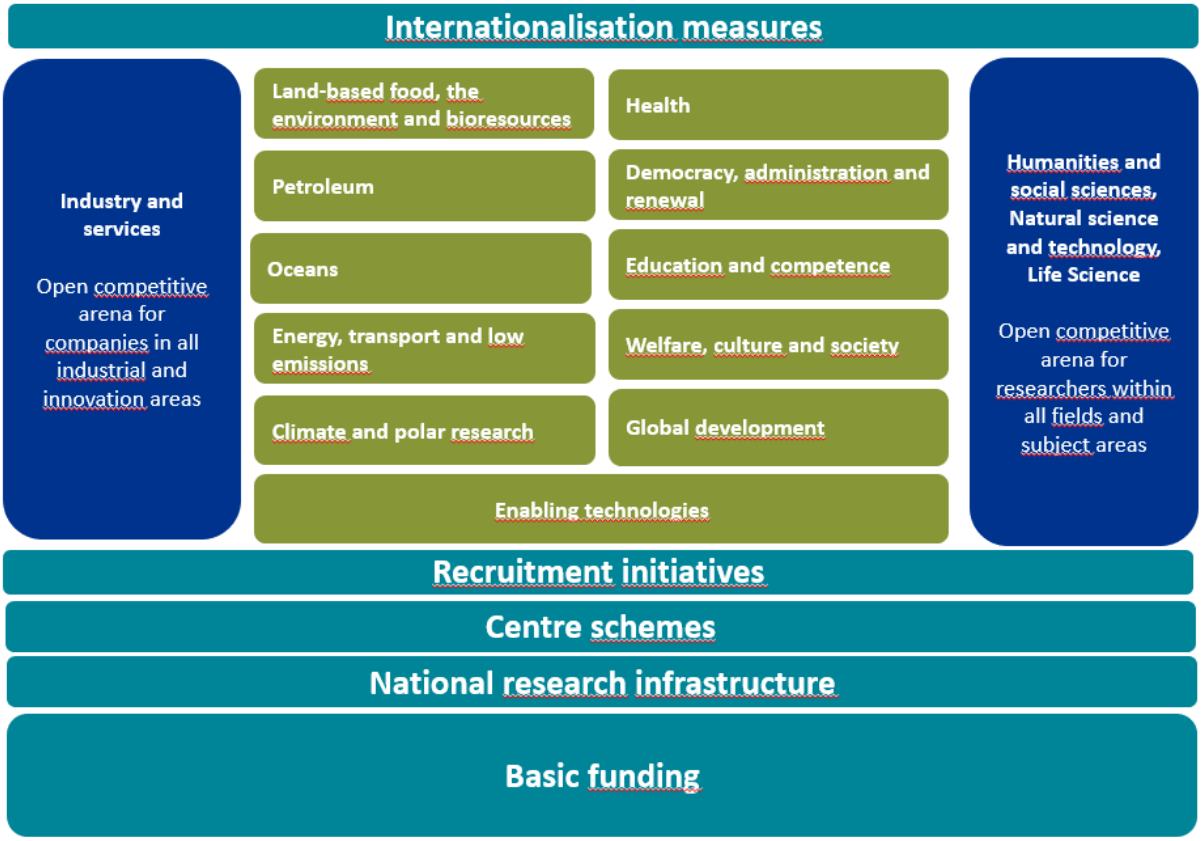


Figure 6 RCN funding programmes (2020).

2 SFF as a funding instrument

2.1 What is the SFF scheme?

The SFF scheme is a Norwegian Centre of Excellence (CoE) funding instrument established in 2000[19] to promote quality in Norwegian research. The SFF scheme's primary objective is to support Norway's leading research groups so that they can achieve research results that advance the international research front. Centres funded under the SFF scheme are also expected to educate top scientists for the future.

The SFF scheme is administered by the RCN and funded by allocations from the Ministry of Education and Research. Each SFF centre receives funding for a maximum of 10 years (an initial five-year period with the possibility of a five-year extension). This funding instrument offers generous, long-term and flexible framework financing to a relatively small number of centres. Thus far,[20] the SFF scheme has allocated approximately NOK 3.9 billion and is contractually obligated to allocate another NOK 2.1 billion, to 44 projects. This funding has been distributed across four generations of SFF centres (SFF-I, SFF-II, SFF-III and SFF-IV).

The SFF scheme gives Norway's foremost scientific circles the opportunity to organise their activities in centres that seek to achieve ambitious scientific objectives through collaboration and long-term basic funding.

The research conducted at the centres must be innovative and have major potential to generate ground-breaking results that advance the international research frontier.

The centres must work with ambitious ideas and complex problems that require coordinated, long-term research activities within or across disciplines to achieve their objectives.

- **SFF-I:** 13 centres started up in 2002/2003 and ended their activities in 2012/2013. SFF-I received a total of NOK 1.6 billion, and over their project periods, each of these centres received NOK 60–210 million from the RCN.
- **SFF-II**: Eight centres started up in 2007 and ended activities in 2017. SFF-II received a total of NOK 0.8 billion, and over their project periods, each of these centres received NOK 77–120 million from the RCN.
- **SFF-III:** 13 centres started up in 2013 and will end activities in 2023. SFF-III has been allocated a total of NOK 2.1 billion, and over their project periods, each of these centres will have received NOK 105–175 million from the RCN.
- **SFF-IV**: 10 centres started up in 2017. These centres will undergo mid-term evaluation in 2021/2022 and are scheduled to end their activities in 2027. SFF-IV has been allocated a total of NOK 1.5 billion, and over their project periods, these centres will each receive NOK 129–167 million from the RCN.

The next funding announcement (SFF-V) is planned to be issued in autumn 2020 for centres with start-up in 2022.

[19] The first centres started up in late 2002. The RCN Board made the formal decision to establish the scheme in November 2000.
[20] November 2019

2.2 Historical background

Several subject specific evaluations conducted in the 1990s pointed to a considerable fragmentation within the Norwegian research system. Although some cutting-edge research groups were highlighted, the evaluations commonly observed uneven quality of the research, a lack of strategic awareness and scientific leadership, a lack of long-term and stable funding, unused potential in international publishing, insufficient infrastructure/research equipment and recruitment problems.

Enhancing the quality of Norwegian research was the focus of the government's white paper *Forskning ved et veiskille* (St. Meld. 39 (1998-1999). The white paper discusses several policy actions to enhance and prioritise high quality in research. In order to elevate a larger number of researchers and research groups to a high international level, the white paper suggests establishing a Norwegian Centres of Excellence (CoE) scheme, based on positive experiences from other countries. It also states the following goals going forward: that a higher number of Norway's researchers, research groups and institutions will be attractive collaborators for foreign researchers, that a higher number of Norwegian researchers will get funding from international research programmes, and that Norwegian and international industry will find it suitable to conduct research in Norway.

The RCN was assigned the task of suggesting how a Norwegian CoE scheme could be set up, and the result was presented in the document *Sentre for fremragende forskning – Utredning av en norsk ordning* (2000). The proposed national budget bill for 2001 assigned the RCN the role of administering the SFF scheme, which was to be funded by yields from the newly established Fund for Research and Innovation.

2.2.1 Objective of the SFF scheme

The first SFF call was announced in 2001. The goal of the SFF scheme is described as follows in the call document: '*The scheme is intended to stimulate Norwegian research groups to establish centres dedicated to long-term, basic research at a high international level. The scheme's goal is to increase the quality of Norwegian research.*'[21] The idea was to concentrate resources around the best researchers to induce strategic and structural changes at the institutions that ultimately would increase scientific quality. The goal has largely remained the same over time and was formulated in subsequent calls in the following way: '*The SFF scheme gives Norway's foremost scientific circles the opportunity to organise their activities in centres that seek to achieve ambitious scientific objectives through collaboration and long-term basic funding. The research conducted at the centres must be innovative and have major potential to generate ground-breaking results that advance the international research frontier. The centres must work with ambitious ideas and complex problems that require coordinated, long-term research activities within or across disciplines to achieve its objectives*.' The expectation that researcher training would be an important aspect of the centres' activities has been explicit since the SFF-II call.

2.2.2 Priorities

The first SFF call (SFF-I) was open to applicants from all fields of research, but funding for at least one centre was reserved for each of the four thematic priorities in the white paper St. Meld. 39 (1998-1999); marine research, ICT, medicine and health, and research at the intersection between energy and environmental issues. The thematic priorities from SFF-I were removed in subsequent SFF calls

[21] Original call text: 'Ordningen skal stimulere norske forskningsmiljøer til å etablere sentre viet langsiktig, grunnleggende forskning på høyt internasjonalt nivå. Ordningen har som mål å heve kvaliteten på norsk forskning.'

(SFF-II, SFF-III, SFF-IV). Hence the last three SFF calls have been open to applicants from all fields and there have been no specific priorities given to any specific fields or themes.

In this connection, it is worth mentioning that in 2007, the RCN started up of the Centres for Research-based Innovation (SFI) funding scheme. This funding scheme gives long-term support to research conducted in close collaboration between prominent research institutions and R&D intensive companies with the objective of promoting innovation. The SFI scheme was partly modelled on the SFF scheme and is open to applicants from all fields of science, but it tends to draw applicants with more applied projects and closer ties to industry.

2.2.3 Development over time

Although there have been relatively small differences between the four SFF generations, some adjustments have been made to the scheme. These adjustments have come about as a result of general developments in research policy, both nationally and internationally, as well as experience with the scheme gained by both the RCN and the host institutions.

As mentioned above, SFF-I was open to applicants from all fields of research, but in addition, had thematic priorities related to commercial/societal impact. SFF-II was seen as an enlargement of the original CoE scheme, but at this point, the thematic priorities had been removed.

SFF-III marked a more significant change. At this stage, the decision was made that the funding scheme should become permanent and that the calls would be announced at five-year intervals. Adjustments made in this call were based on the evaluation of the SFF scheme from 2010, which gave input on the level of financing and confirmed the added value of the centres.

The evaluation of the SFF scheme from 2010 was performed by NIFU STEP and resulted in the report *Evaluation of Added Value and Financial Aspects – The Norwegian Centre of Excellence Scheme*. This evaluation focused in particular on the centres' added value for their host institutions, as well as financial aspects of the SFF scheme, but did not evaluate the centres' scientific merit.

Some of the SFF centres and/or the SFF scheme have also been mentioned in other evaluations of Norwegian research. The evaluation *Research in Earth Sciences in Norway* published in 2011 in particular mentions the effects of the SFF scheme on this field, and gives the SFF scheme credit for substantially raising the international profile of certain areas of Norwegian Earth Science research. As in the evaluation of the SFF scheme from 2010, this evaluation also points to challenges for the host institutions and predicts that re-integration after the end of the SFF period may pose further challenges. However, both these evaluations were conducted before the end of the first centre period.

Another important source of information has been the mid-term evaluations. Three generations of centres have so far been evaluated. While the mid-term evaluations formally serve to inform the RCN's decisions regarding funding for each centre's last five years of operation, these evaluations have also provided valuable advice of relevance to the scheme in general.

Over time, both the RCN and the host institutions have gained experience with the SFF scheme and made changes. Some of these adjustments have impacted how the centres are governed and organised within their host institutions, partly with a view to addressing re-integration.

2.3 RCN procedures for selection and follow-up

2.3.1 Selection of new centres

The selection process for new centres is performed in two phases. While the initial phase is open to all applicants, only the top ranked applicants are invited to apply in the second phase. Between 20 and 30% of the applicants in the initial phase have been invited to phase two. The number of applicants invited to phase two is roughly three times the number that can be funded.

One major challenge in the ranking of the SFF applications is that they describe research in many different scientific fields. The selection process must thus rely on both experts in the specific field of each application, as well as one or more committees with broad expertise to compare the applications.

Sharp competition ensures quality

SFF calls are open to all fields of research and the centre applications are developed through bottom-up processes led by the researchers themselves. However, the rectors/directors of each research organisation are ultimately responsible for the applications. Each SFF call has received many applications and only 7-10% of the proposed centres were funded by the RCN (Table 1). The large number of applications creates sharp competition, and this competition is the main factor that ensures the quality of the selected centres.

Table 1 Number of applications and centres funded in the four SFF calls

	Applications	**Funded**
SFF-I	129	13
SFF-II	98	8
SFF-III	139	13
SFF-IV	150	10

Assessment criteria emphasise scientific quality

Scientific quality has been the main selection criterion in all calls. In the SFF-I call, the main criterion was stated as '*scientific quality at a high level relative to international standards. This requirement pertains both to the proposed research in the centre as well as the centre's key scientific personnel*.' For SFF-I, a supplementary criterion on commercial and societal relevance was included, but this was explicitly removed in the subsequent call. This means that scientific quality has remained the main criterion through all calls.

However, the SFF scheme has adjusted to streamlining, rules and customs for formulating assessment criteria in the RCN. This has resulted in changes in the structure and wording of the assessment criteria between calls. For instance, in the calls for SFF-II and SFF-III, there were nine and seven different assessment criteria, respectively (see appendix for call documents). In addition, the SFF-III call described seven 'additional factors' of a more general nature.

In SFF-IV, four evaluation criteria were used, where two of them, 'Research' and 'Centre director', had wordings close to the corresponding ERC criteria where 'potential to achieve groundbreaking results' is central. Two additional criteria assessed the team of key scientists and the organisation of the centre.

From 2019 onwards all RCN calls must be streamlined to have the three assessment criteria named "Excellence", "Impact" and "Implementation". Under these three headings, the SFF scheme will have some freedom to formulate the points to consider. The new criteria will be used in the 2020 SFF-V call.

Selection is performed by peer review

Because scientific quality is the main selection criterion, the selection procedures depend on assessments made by scientists. All rankings are performed by peer review/scientific committees. Concomitantly, even though the RCN Board makes the formal funding decision, its predominant role has been to perform quality assurance of the assessment procedures. The only exception was in SFF-I, where the RCN board level was assigned a role related to the thematic priorities set out in the call.

The selection processes in SFF-I to SFF-III

In SFF-I, -II and -III, the applicants submitted full length applications for phase 1. These were sent out to three acknowledged experts in the field of each application. In SFF-II, the three experts wrote independent assessments and assigned grades between 1 and 7 to the applications. In SFF-III, the three experts collaborated on a common panel assessment and common grades. Based on recommendations from the first evaluation of the SFF scheme, the assessments in SFF-III were for the first time sent back to the applicants so that they could respond to criticism and potentially influence the outcome of the assessment.

In a few cases, two applications were within the same field and could be assessed by the same experts, but the three experts generally only read one application, and were not able to compare with other applications before assigning grades. While some applications were within broad and highly competitive international fields, others pertained to narrower fields, as did, in some cases, the experts assigned to assessing them. This may at times have influenced the grade.

The proposals, final assessments from the three experts and the applicants' comments were sent to a *scientific committee*. In SFF-II, the scientific committee consisted of 11 international and acknowledged professors. In SFF-III, the selection committee was split in three smaller committees (comprising five members each), one for humanities/social sciences, one for life sciences and one for natural sciences and engineering. Each committee could recommend up to ten applications to be invited to phase two. The grade assigned by the three experts greatly influenced the selection of invited applicants: 82% of the grade 7s were invited to phase 2, while 20% of the grade 6s were invited.

In SFF-I, -II and -III, the applicants who were invited to phase 2 could amend their application, and some chose to improve the application based on criticism or advice from the phase 1 assessment. The refined applications were, when possible, sent back to the same three experts, who could choose to alter their assessment of the application. Finally, a *scientific committee* read all the applications, the refined assessments and, in SFF-III, interviewed all the centre directors. For SFF-I and SFF-II, the *scientific committee* was identical to that of phase 1, while for SFF-III, the *scientific committee* consisted of seven committee members, five from the phase 1 committees and two new ones, one of which served as the committee chair. The *scientific committee* ranked the applications and recommended which should be funded.

The selection process in SFF-IV

The phase 1 selection process in SFF-IV was changed somewhat from the previous calls. In SFF-IV, the applicants sent a shorter, five-page project description for phase 1. Rather than each application being assessed by three experts in the field, it was assessed by a large *scientific selection committee* comprising 27 professors/researchers with backgrounds spanning many fields of research. The committee's main task was to compare the applications and select the potential best, based on their own comparisons and own experience with groundbreaking research. The committee members' names were published on the RCN's website four months prior to the call deadline. Each committee member read 47-59 applications. The scientific quality and the potential for the centre to achieve

groundbreaking results, as well as the centre director's previous research results, were considered by the committee to be the most important assessment criteria.

Many of the committee discussions took place in one of the three field-specific subcommittees for social sciences and humanities, life sciences, or natural sciences and technology. The applicants themselves could choose the best subcommittee for their application and also indicate whether their application should be discussed in two different subcommittees, ensuring expertise also for interdisciplinary research (Table 2). The full committee decided which applications should be invited to phase 2.

Table 2 Number of SFF-IV applicants choosing each primary field-specific subcommittee + number of applicants choosing two field-specific subcommittees

Subcommittee	Phase 1	Phase 2	Funded
Social sciences and humanities	44 + 3	10 + 1	3 + 1
Life sciences	54 + 5	12 + 1	3
Natural sciences and engineering	52 + 7	12 + 2	4 + 1

Since the SFF-IV phase 1 selection differed substantially from the SFF-III selection, an invitation to phase 2 was not necessarily the same stamp of approval it had previously been seen as in SFF-III. In SFF-IV, there was a greater chance that the application could later fall through in phase 2, following the three experts' more thorough assessment. Another difference was that all applicants in SFF-IV received only a short feedback text from the committee containing limited advice on how to improve the quality of the applicant's research. This was because the focus was on selecting the potential best from among the applications rather than giving advice.

The applicants invited to phase 2 of SFF-IV wrote a full-length application that was subsequently assessed by three experts in the research field(s). The experts firstly wrote separate assessments and later collaborated on a common panel assessment in which non-census was to be highlighted. These assessments were sent to the applicants for rebuttal. The panels could refine their assessments before the applications, assessments and rebuttals were read by a final *scientific committee*. The scientific committee consisted of nine members who compared all the applications and interviewed centre leaders in order to rank the applications and recommend which should be funded.

In contrast to SFF-III, the experts and committees in the two phases of SFF-IV were entirely separate from each other. Hence, the top ranked applications had to be prioritised by two independent committees.

The selection process for SFF-V in 2020/2021 is expected to resemble that used in SFF-IV.

2.3.2 Follow-up of active centres

Mid-term evaluation

The funded SFFs are subject to a mid-term evaluation after 3.5-4 years. The scientific quality of the centres' output, the organisation of the centres and the plans for the second half of the centre period are assessed by international experts. Their evaluation report forms the basis for the RCN Executive Board's decision of whether to continue the funding of each of the individual centres for the remainder of the ten-year period, or to terminate the funding and SFF status after five years.

So far, the centres in the first three generations have had mid-term evaluations. Out of a total of 34 centres, as many as 24 were rated 'exceptional'. The remaining were assessed to be either 'very good to exceptional' or 'good to very good'. The most common negative comments for centres that were found to be less than exceptional were related to synergy, research integration or collaboration between the research groups. The research output itself was assessed as 'not outstanding' or just 'satisfactory' in only two of the centres (in SFF-I). Two other centres were criticised for weak succession planning for centre directors retiring during the project period.

The ten centres not evaluated as 'exceptional' were asked to amend their strategies or to make changes in the organisation in order to address the recommendations. These amendments were assessed either administratively or by aid of the evaluation committee and finally approved by the RCN Board. So far, all of the centres have, in the end, had their funding continued for the full ten-year period.

All three mid-term evaluations have involved both experts in the individual centres' field of research and experienced professors with general expertise who were able to compare the centres. In the first two evaluations, three experts in the centre's field of research read background material prepared by the centre and wrote an assessment. A committee comprising nine (SFF-I) or five (SFF-II) generalists then interviewed the centre directors and representatives from the host institutions. In the third mid-term evaluation (SFF-III), two experts and two generalists visited each centre. The site visits required more resources than the interviews, but also gave the committee a more thorough insight into the centre and made it possible to talk in person to the PhD students and young researchers there.

The midterm evaluators who were also experts in the research field of the centre have, with very few exceptions, been very impressed by the centre's research results. They describe the research results as being of very high quality and importance, and praise the international visibility of the centres. The generalists, on the other hand, can mostly comment on the organisation of the centres and compare them. Since the main objective of the SFF funding scheme is to promote scientific quality, the quality of the research performed at the centres must be the main criterion for the evaluation. It is for this reason very difficult to terminate a centre that is considered by the peer reviewers to be excellent, even if the organisation is sub-optimal. However, the RCN can demand changes to the organisation of the centre for the last half of the centre period.

Site visits

The mid-term evaluation is the RCN's most thorough procedure for centre follow-up. However, site visits by the RCN have of late been arranged once before the mid-term evaluation and once after. Both the original assessment criteria and the contract between the RCN and the host institution define specific points for the RCN to follow up.

Important agenda points include scientific collaboration within the centre, organisation of the centre, and meetings between the centre and its scientific advisory committee (SAC). In addition to the centre

personnel, representatives of the host institution are present during site visits and participate in discussions on co-localisation of centre personnel, provision of office space as the centre grows, administrative support and the host institution's strategy for the centre's research both during and after the centre's period of operation. For centres that have gender imbalance among junior or senior researchers, another important topic is the centres' actions to improve this.

A very important part of the site visits is a discussion with students, PhD students and young researchers. Topics for discussion include their supervision, opportunities to discuss their work with senior researchers and international visitors, opportunities to work for shorter or longer periods abroad, the portfolio of courses that are offered to create a common platform for students from different fields, common meeting places, participation in centre meetings and international conferences, and whether they are offered advice on career planning.

SFF forum

SFF forum is an arena organised by the RCN, primarily for SFF centre directors, that takes place approximately once a year. In general, the centre directors have given presentations on solutions they have developed for their own centres, followed by discussions in groups. Some topics that have been discussed are how to prioritise the most promising research, how to nurture collaboration between researchers/research groups, how to develop a fertile environment for students and young researchers, the establishment of female role models in a centre, and experience with writing ERC applications.

In addition, the RCN has arranged meetings for the centres' administrative leaders, again including presentations and discussions. Instructions for annual reporting to the RCN are always presented.

Annual reporting

Every year, the centres report on achievements from the previous year. The statistics presented later in this report regarding centre personnel, additional funding, publications and popular dissemination are collected from these progress reports. In addition, all centres create an annual brochure or 'glossy' report.

2.4 Funding of the SFF scheme

The SFF scheme was originally funded by yield from the Fund for Research and Innovation and is today funded by the Ministry of Education and Research. The scheme first received funding in 2002, concomitant with the start of the SFF-I centres. The funding was then expanded in 2007-2009 to give room for a second generation of centres (SFF-II). Since then, the SFF scheme has provided funding for two parallel centre generations, and today, it is generations three (SFF-III) and four (SFF-IV) that are active. Since the funding increase that accommodated two generations of centres, the funding of the SFF scheme has approximately kept pace with the observed increase in the full-time equivalent (FTE) cost in the Norwegian R&D sector (Figure 7). The FRIPRO budget is shown for comparison. SFF funding relative to the RCN's total R&D expenditure[22] has also remained more or less constant, at almost 4%.

[22] RCN total ex. base funding to institutes.

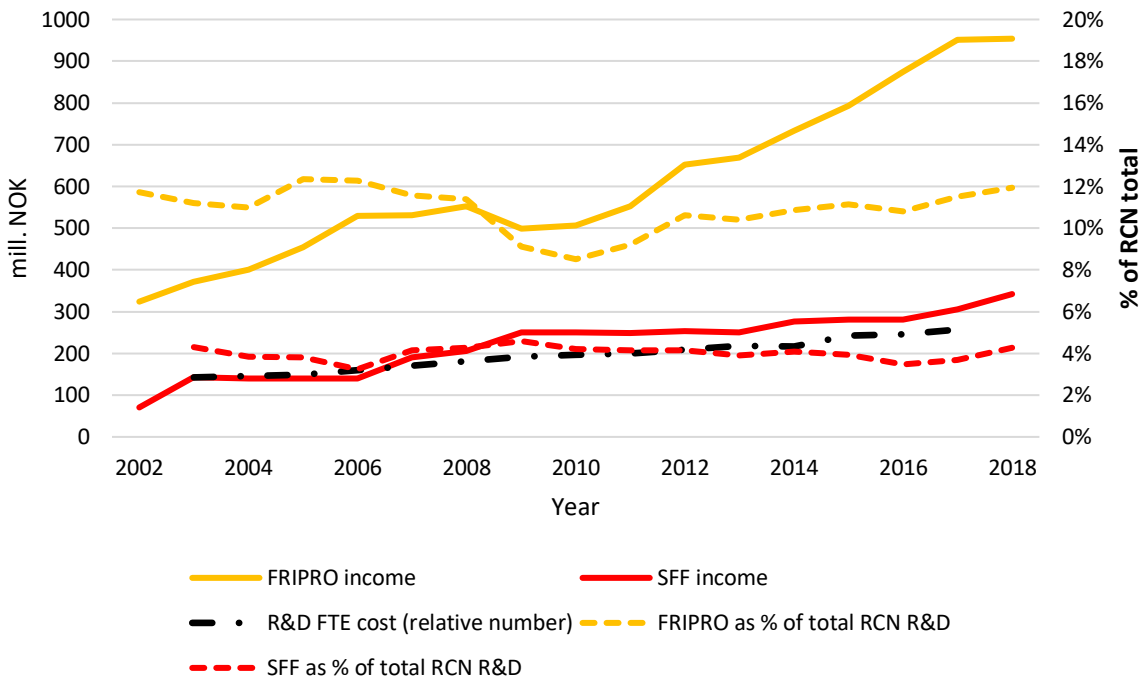


Figure 7 SFF income. SFF income (mill. NOK) per year is shown as a solid red line. The red dashed line shows SFF income as a percentage of total RCN R&D expenditure (excluding base funding for institutes). Comparable numbers for FRIPRO (the RCN's main researcher-initiated programme) are shown in yellow (solid and dashed lines, respectively). FRIPRO income includes Storforsk and YFF but excludes *Fellesløft.* The black dashed line shows the development of Norwegian R&D full-time equivalent (FTE) costs since 2003. R&D FTE costs are relative and calculated on the basis of data from NIFU Statistikkbanken.[23]

Over time, the SFF scheme's expenditures have roughly mirrored its income (Figure 8). However, there is some variability in expenditure between years. Some of this variability has been caused by delays in centre spending, typically due to delayed hiring. However, the largest deviation (in 2012-2013) was due to a delay in the selection process in conjunction with SFF-III. The SFF scheme in 2018 had an accumulated surplus of NOK 32 mill. that was transferred to 2019. This was due to delays in centre spending in 2018.

The RCN's administrative costs related to the SFF scheme shown in Figure 8 include an estimate of salary expenses (except in 2018[24]). The total administrative costs over the last five years have been on average 2% of the scheme's annual income, but have varied between 1.0 and 3.5% over the period the scheme has been in operation. For comparison, the RCN's total administrative costs in 2018 made up 7.6% of its total income for the year.[25] Since the SFF scheme has infrequent calls and awards few and large grants, administrative costs would be expected to be lower than for many other RCN

[23] R&D FTE cost is calculated on the basis of NIFU Statistikkbanken's data on R&D cost>labour cost>HEI, and R&D personnel (FTE)>total R&D personnel, HEI. Graph shows increase relative to 2003 and is normalised to the SFF income the same year.

[24] Due to changes in the RCN's budgeting system

[25] The RCN's accounted operating budget vs. total income (Forskningsrådets årsrapport for 2018)

programmes.

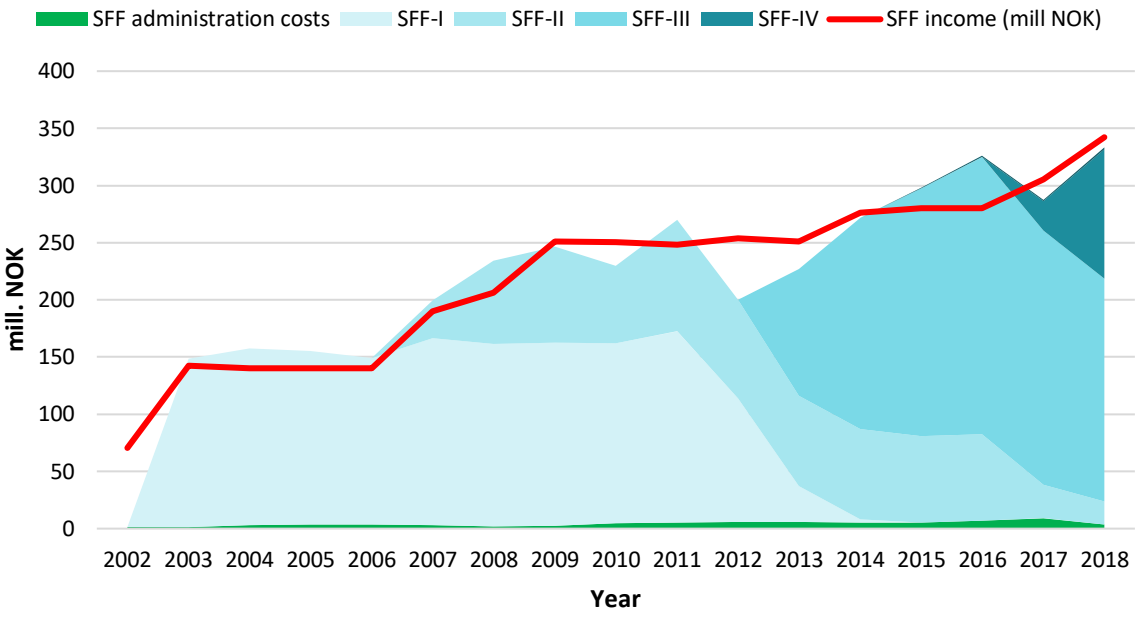


Figure 8 SFF expenditure (stacked area chart) vs. income. The SFF scheme's expenditures in each SFF generation are plotted, for the period 2002-2018. Blue shading corresponds to different SFF generations. SFF income is shown in red (solid line). RCN administrative costs related to the SFF scheme are shown in green and include an estimate of salary expenses (except for in 2018).

Figure 9 shows the RCN administration's direct expenses. These are primarily related to peer review and committees involved in selection processes or evaluations. Hence, there is a clear five-year cycle that is also reflected in the number of administrative hours used. This cycle is caused by the five-year gap between calls and the fact that the mid-term evaluations also occur in a five-year cycle.

Figure 9 RCN administrative costs related to the SFF scheme. The RCN administration's SFF-related direct expenses (i.e. excluding salaries) are shown in orange (solid line) for the period 2001-2018. Administrative hours are plotted in green (solid line) from 2011 and onwards.

2.5 Research fields funded by the SFF scheme

The SFF scheme has funded a total of 44 centres (see appendix). As of 2020, 23 centres are in operation (SFF-III and SFF-IV). Of the 23 active centres, 22 are located at a host institution in the higher education sector (21 at the five oldest universities and one at the Norwegian School of Economics (NHH), a specialised university college) and only one at a research institute. However, the proportion of centres within the institute sector has previously been higher, particularly in SFF-I. The following analyses nevertheless uses higher education institutions (HEI) for the purpose of comparison.

The RCN classifies all funded projects according to a field classification system developed by Universities Norway (UHR). These classifications are reminiscent of OECD's classifications,[26] but differ in some respects that are important to our analyses. Most notably, the RCN system does not use the broad level category Life Science but uses a category called Medicine and Health.[27] Many aspects of biology are therefore classified as Natural Sciences.[28]

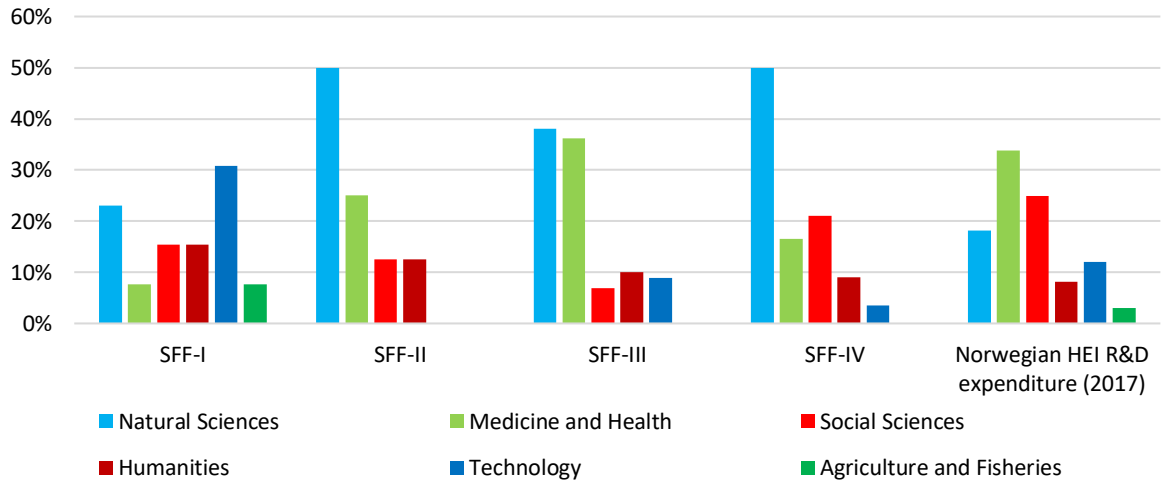


Figure 10 Percentage of centres per broad level R&D field. Percentage of centres in each SFF generation within each scientific field based on a field classification system developed by Universities Norway (UHR). 2017 Norwegian R&D expenditure in the HEIs is plotted to the right, for comparison.

There is a wide distribution and generational differences[29] in the centres' broad level R&D field classifications (Figure 10 and Figure 11). For comparison, the 2017 Norwegian R&D expenditure in HEIs is shown to the right in Figure 10**.** It is clear from this comparison that a relatively large proportion of the centres have been within the Natural Sciences category (which, as noted above, includes biology).

[26] Described in the Frascati Manual, 2015.
[27] E code.
[28] The RCN classification system also differs from the classification system used by NIFU in their sub-report *Bibliometric analysis and career mapping of the SFF scheme*.
[29] Starting with SFF-III, it has been possible to use fractional classifications.

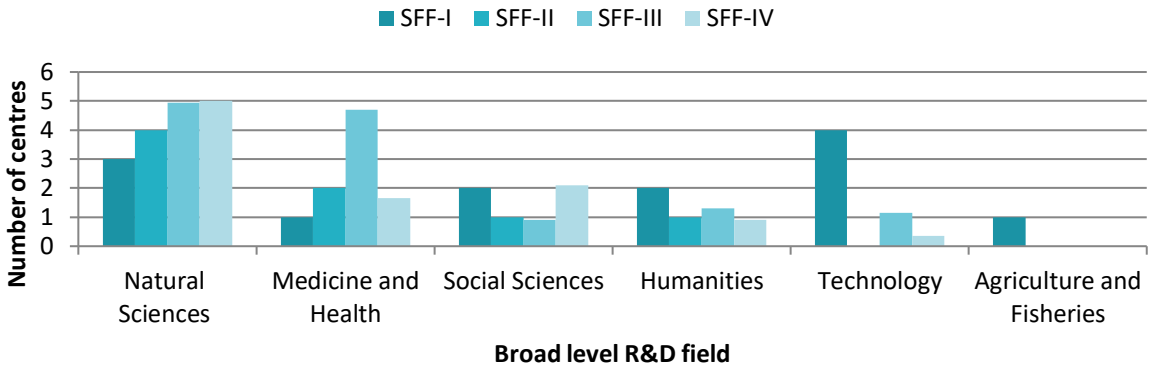


Figure 11 SFF centres per broad level R&D field. The number of SFF centres per broad level R&D field (UHR) within each SFF generation (shades of blue represent different SFF generations ranging from dark blue (SFF-I) to light blue (SFF-IV). Since SFF-III, it has been possible to use fractional classifications. This explains why the number of centres per field are not necessarily whole numbers. Graph is based on the same data as in **Figure 10**.

In SFF-I, there were quite a few centres in the field of technology (Figure 10 and Figure 11). This has since decreased, perhaps related to the start-up of the SFI funding scheme, which draws applicants with more applied projects and closer ties to industry.

A closer look at the second-level R&D field classifications[30] reveals that many of the SFF centres fall under geological sciences (Figure 12).

[30] U codes.

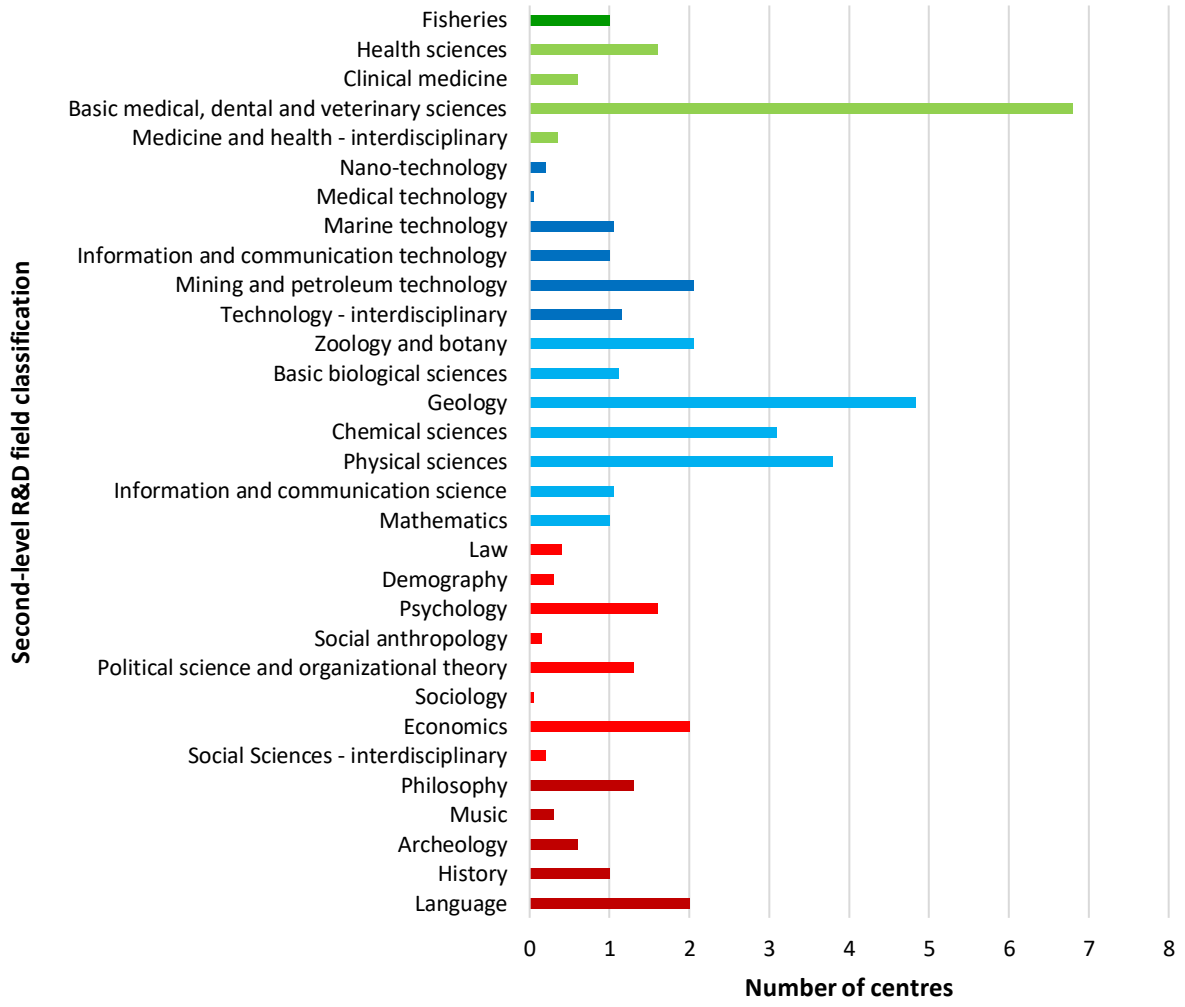


Figure 12 Number of centres per second-level R&D field classification. SFF centres are plotted based on second-level R&D field classification. Since SFF-III, SFF centres can be classified in multiple fields, adding up to 100%. The colours represent broad-level R&D classification, as in **Figure 10**.

The RCN classification system also contains calculations of expenditure relevant to each of the priorities in the government's long-term plan (LTP). These calculations are based on field designations and yearly expenditures and therefore reflect financial input into fields that may be relevant to prioritised areas (and not output/results). The thematic priorities in the LTP were recently revised somewhat to clarify the difference between overall objectives and areas of thematic priority, but the RCN's classification system still relates to the previous LTP's thematic areas. We therefore have data for two of the three LTP objectives and four of the five current LTP thematic areas. Funds invested through the SFF scheme are naturally considered to contribute greatly to the objective of developing academic and research communities of outstanding quality, and less so to enhancing competitiveness and innovation capacity (Figure 13).

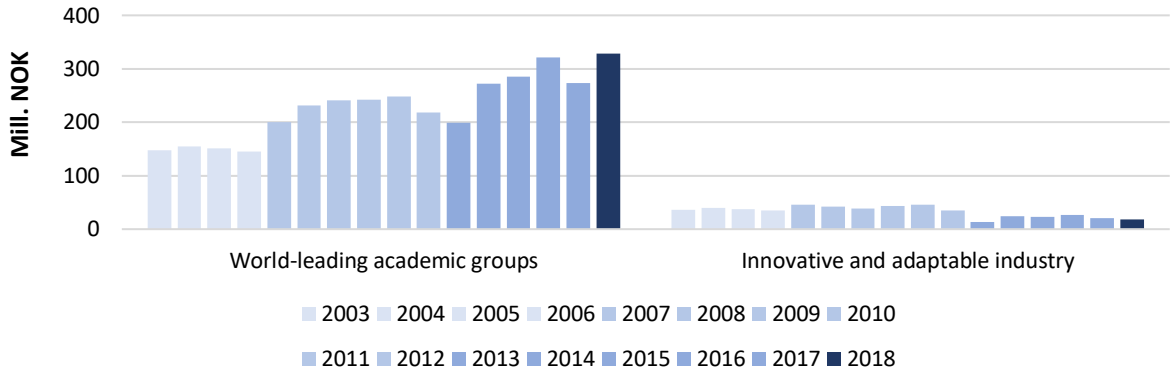


Figure 13 The SFF's contribution to two of the government's long-term plan (LTP) objectives. Funds (mill. NOK) invested through the SFF scheme to develop world-leading academic groups (left) and innovative and adaptable industry (right). Colour shading represents different SFF generations (light blue – SFF-I, medium light blue – SFF-I and SFF-II, medium dark blue – SFF-II and SFF-III, dark blue – SFF-III and SFF-IV).

The SFF scheme contributes as a whole to the four LTP areas of thematic priority we have data on (Figure 14). As expected, there are differences between SFF generations. In particular, there is a noticeable increase in the thematic area public sector renewal, better and more effective welfare, health and care services, starting in 2013. This is due to the large proportion of SFF-III centres that have relevance for health research.

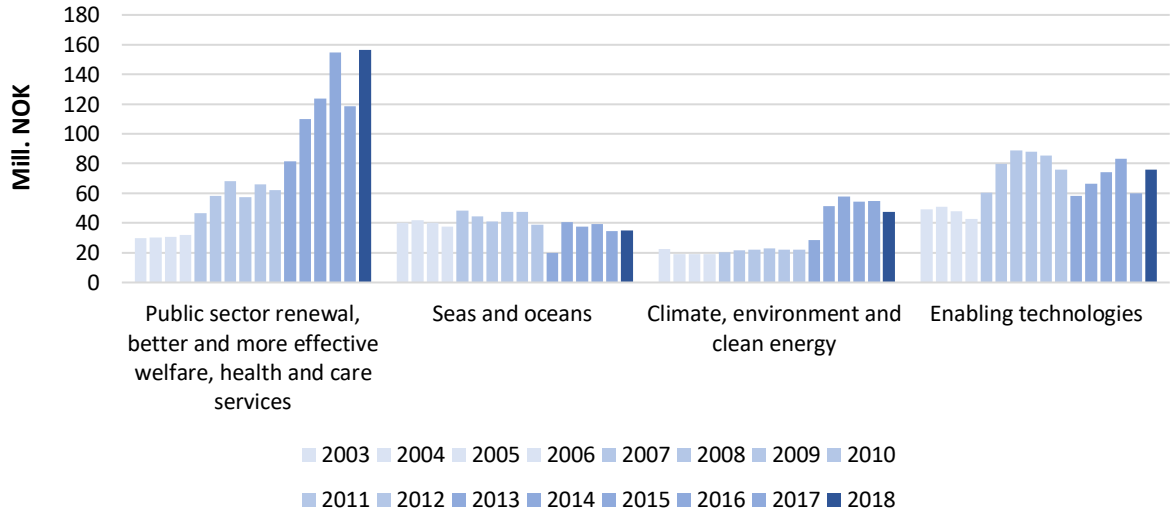


Figure 14 The SFF's contribution to the long-term plan's prioritised thematic areas. The contribution of the SFF scheme (mill. NOK) to four prioritised thematic areas of the LTP. The colour shading represents different SFF generations (light blue – SFF-I, medium light blue – SFF-I and SFF-II, medium dark blue – SFF-II and SFF-III, dark blue – SFF-III and SFF-IV).

Since 2011, the RCN has classified projects according to the Health Research Classification System's (HRCS) categories. The increase in health-related research in SFF-III is also noticeable when looking at these categories (Figure 15). The SFF scheme has contributed substantial amounts of funding (NOK 147 mill. in 2018) to research relating to health. The centres tend to work predominantly on more fundamental issues, and hence the HRCS research activities *Underpinning Research*, *Aetiology* and *Detection and diagnosis* dominate.

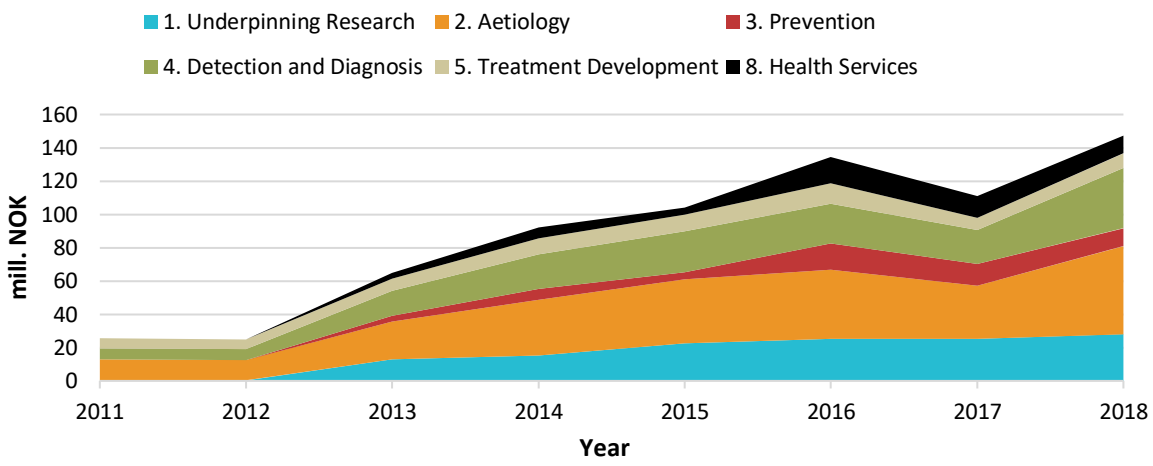


Figure 15 SFF funding per Health Research Classification System (HRCS) research activity (stacked area chart). SFF funding (mill. NOK) in the period 2011-2018 in health-related research categorised according to the HRCS (shown in different colours).

Research in the SFF centres has been relevant for several HRCS health categories – *Cancer*, *Neurological*, *Mental Health*, *Reproductive Health And Childbirth*, *Inflammatory and Immune System* and *Generic Health Relevance* (Figure 16).

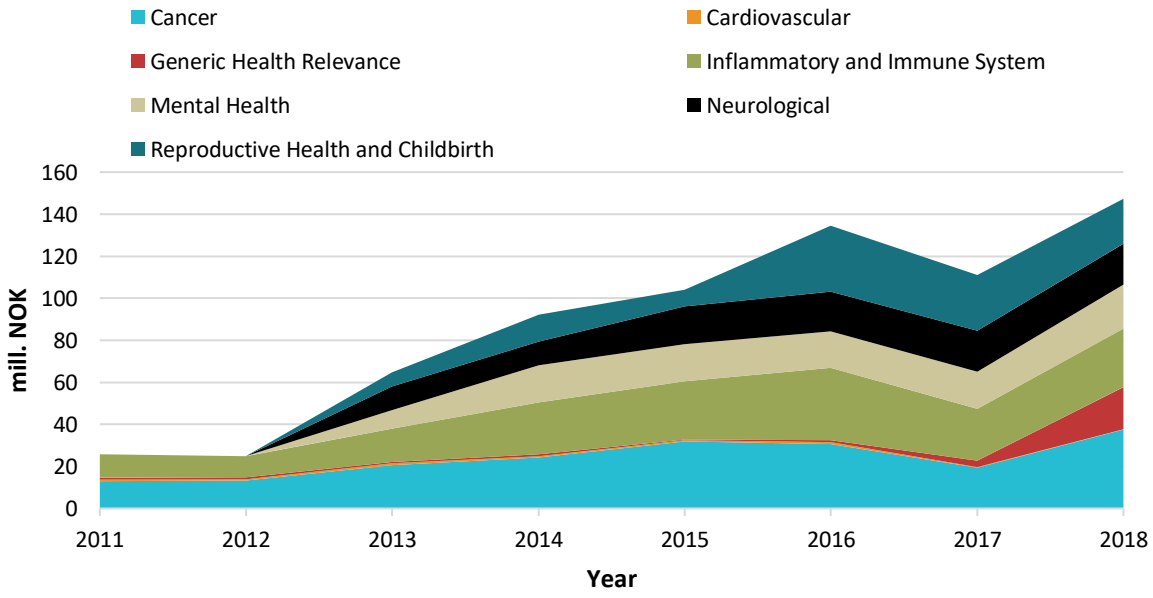


Figure 16 SFF funding per HRCS health category (stacked area chart). SFF funding (mill. NOK) in the period 2011-2018 per HRCS health category (shown in different colours).

Projects funded by the RCN are also routinely classified according to whether the projects are considered to primarily be basic or applied research. Over the time span of the scheme, the SFF scheme has mostly funded basic science. Only 11% (on average, with a range of 9-17% per year) of the funding has been spent on applied science. A slight increase can be observed in the last five or six years and this coincides with the start of SFF-III.

The RCN classification system is not particularly well suited to assess the level of interdisciplinarity in the centres, but this topic is covered in NIFU's sub-reports *Bibliometric analysis and career mapping of the SFF scheme* and *Impacts of the SFF scheme on the Norwegian research system*.

2.6 Centre financing

The RCN grant awarded to SFF centres is part of the centre's 'basic funding'. In general, host institutions also contribute their own financing (*egenfinansiering*) to their centres. Contributions from other parties, such as foundations and private and public organisations, may also be included in the basic funding. The centre's overall basic funding serves as the basis for the contract with the RCN.[31] In addition, the RCN requires the host institution and any collaborating partners to obtain and include 'supplementary funding' (*tilleggsfinansering*) of the centre, which stems from competition-based research commissions that support the centre's research objectives. Supplementary funding for the centre is not part of the contract with the RCN. The basic and supplementary funding together make up each centre's 'total funding'.

The RCN's SFF contribution per centre has varied somewhat between generations (Figure 17). In SFF-I, the average was NOK 119 mill. over the ten-year project period, but the funding per centre varied widely. The variation was greatly reduced in SFF-II, where the average SFF contribution was NOK 100 mill.. The amount of funding per centre that could be sought in the SFF-II call was smaller than in both the previous and subsequent calls. In SFF-III, the average increased substantially to NOK 159 mill. per centre, and in SFF-IV, it was NOK 150 mill. Interestingly, the variation between centres has remained low since SFF-II, and the most noticeable trend is that the smallest SFF contributions have increased over time.

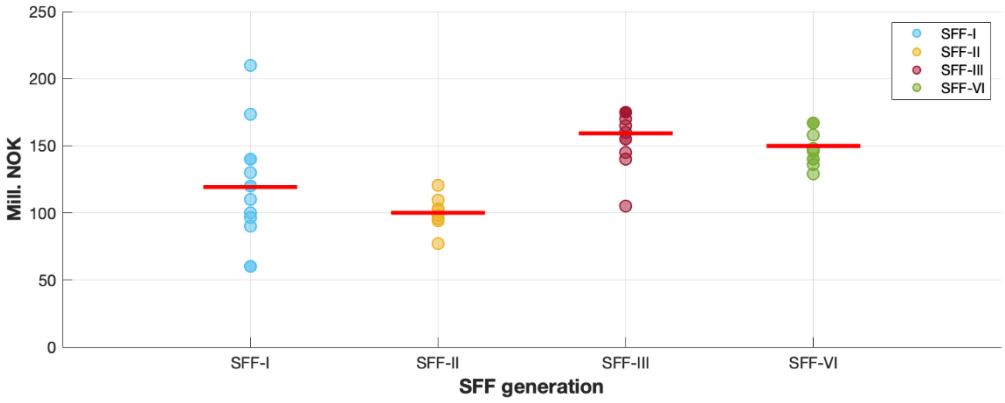


Figure 17 The RCN's SFF contribution per centre. The RCN's financial SFF contribution (mill. NOK) to each centre is plotted per SFF generation (SFF-I: blue, SFF-II: orange, SFF-III: red, SFF-IV: green). Red line: Average RCN contribution (mill. NOK) per SFF generation.

Over the last five years, the average RCN contribution to the centres' total financing has been 42%, of which 23% has been channelled through the SFF scheme (denoted as SFF contributions above) and 19% through other RCN funding programmes.[32] The host institutions' own financing has, over the same

[31] See Requirements and guidelines for SFF-IV in the appendix for further details.

[32] Most important among other RCN programmes, as seen from the SFF perspective, are FRIPRO, INFRASTRUKTUR, STORE PROGRAMMER and HANDLINGSRETTEDE PROGRAMMER. Over the period of existence of the INFRASTRUKTUR programme (2009-), approximately 20% of its project leaders have had some form of affiliation, either before, during or after, to the SFFs.

period, amounted to 27% of the centres' total funding, and international funding, predominantly from the EU, amounted to 7% (Figure 18).

In 2018, the first full year of operation of the SFF-IV centres, the average total annual funding per centre was NOK 53 mill. The funding per centre was higher for SFF-III (average NOK 64 mill.) than for SFF-IV (average NOK 37 mill.).[33]

Total centre funding last five years

- SFF funding from RCN – 23%
- Own financing – 27%
- Other RCN funding – 19%
- Other sources – 31%

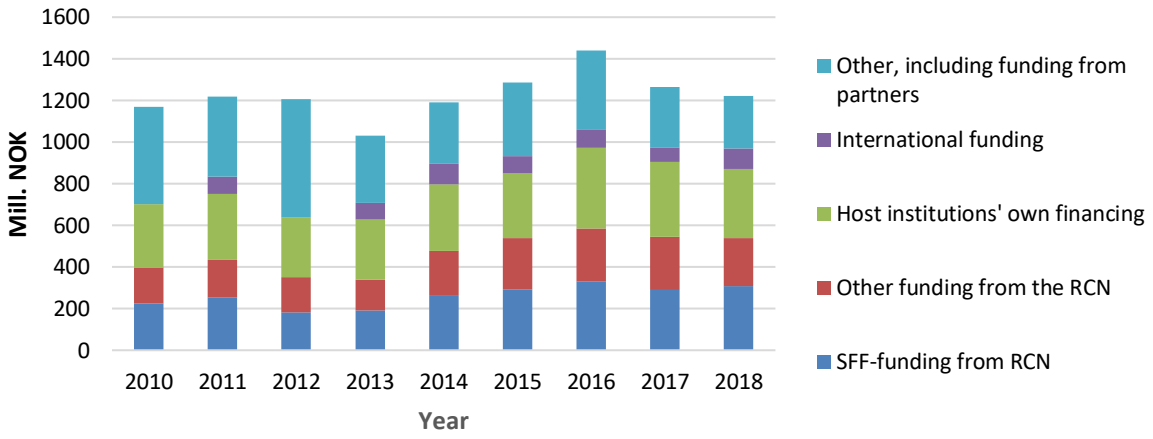


Figure 18 Total annual SFF funding – all centres. Cumulative total SFF funding in the period 2010-2018 from different sources (colour coded).

The 23 centres that were active in 2018 reported a cumulative total funding of NOK 1,222 mill. (Figure 18). This figure fluctuates somewhat depending on when the last generation of centres was started. In 2018, the cumulative total funding of the centres nevertheless corresponded to approximately 1.8% of the total annual R&D expenditure in Norway and about 5% of the total R&D expenditure of HEIs.[34]

Based on the numbers presented here, it seems reasonable to say that the centres concentrate a fair amount of funding around their activities in addition to the RCN's SFF contribution.

While data on the total *income* of the centres is relatively good, the data we have about how the money is spent at the centres pertains only to the ~75% that belong to the centres' *basic* funding. In 2018, the active centres had NOK 916 mill. in basic funding, and 70% of this was spent on 'personnel and indirect expenses', 9% on 'procurement of R&D services', 3% on 'equipment' and 18% on 'other operating expenses'.

[33] SFF scheme annual report 2018.
[34] NIFU statistikkbanken, total R&D expenditure 2017 was NOK 69,176 mill. and in HEIs, NOK 23,322 mill.

2.7 Centre organisation[35]

2.7.1 Centre management

The centres are led by a centre director. This person must be employed by the host institution and serves as the project leader with both scientific and financial authority over the centre. Most centres in addition have a vice/co-director and a management group consisting of some of the senior scientists/professors at the centre.

The RCN requires centres to have a board if they have formal partner organisations, and it is also recommended if the centres have personnel from different departments. Most, but not all, centres therefore have a board. The RCN does not decide who sits on the board, except that it is a requirement that all partner organisations are represented.

In addition, all centres are required to have a scientific advisory committee (SAC). The SAC members are chosen by the centre and are generally international experts in the scientific field of the centre. Their role is to give scientific advice to the centres. In order to be independent, SAC members should not be involved in the centre in other capacities. The requirement to appoint an SAC came about after advice that emanated from the mid-term evaluation of SFF-II. Hence, not all SFF-I centres had an SAC.

2.8 Centre personnel

2.8.1 Centre directors

In general, the same person remains the centre director for the duration of the project period. However, some centres plan from the start to have two directors that take turns, or there is a transfer of leadership during the centre period. Also, some centre directors decide to step aside at some point during the centre period even though this was not planned in the original application. The latter kind of leadership transfer requires RCN approval but is generally accepted as long as the centre finds a new qualified director. So far, the 44 centres have had a total of 56 directors. In addition, three of the SFF-IV centres plan to transfer leadership after five years (in 2022).

The average age of the (first) centre directors at the start of each project period has been 49-51 years in SFF-I, -II and -III, but increased to 58 years in SFF-IV (Figure 19). By comparison, the average age of Norwegian professors was 57 in 2019.[36]

[35] The RCN's requirements regarding centre organisation are described in the document 'Requirements and guidelines', which is part of the project contract. There are different versions of this document for each generation of centres (see appendix).

[36] DBH (NSDs Database for Statistikk om Høgre Utdanning).

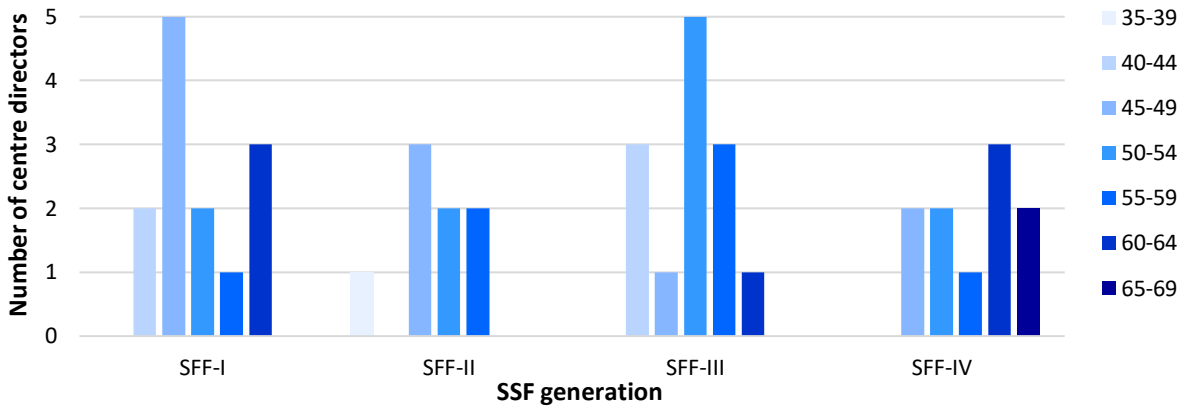


Figure 19 Age distribution among centre directors at centre's start-up. Colour shading denotes age range.

2.8.2 Other centre personnel

In 2018, the centres reported that a total of 1,756 people were employed by the centres. Of these, 274 were employed as technical or administrative assistants, whereas 1,482 were employed as scientific personnel, i.e. as professors, researchers, postdocs or PhD students. Our reporting does not collect information about the number of master or bachelor level students that are associated with the centres. The scientific personnel performed 859 FTE in 2018. The fact that not everyone contributes a full FTE per year is expected, since many students and postdocs start and leave during the year and some senior scientific personnel have part-time positions in the centres. The number of scientific personnel in the centres corresponds to 2.6% of all Norwegian researchers and 5% of researchers in the Norwegian HEIs.[37] The centres perform 7% of the HEI researcher FTEs. This share corresponds well to the share of total HEI R&D income that the centres control, totalling approximately 5%.

When the SFF scheme was started, one intention was to counteract the scientific fragmentation observed in the Norwegian research system. In 2018, the active centres had between 23 and 151 (recruitment and senior) scientific employees. However, since the SFF-IV centres had only recently been started up, it is perhaps more informative that the total number of scientific personnel in the SFF-III centres ranged from 32 to 151 (Figure 20). The range for senior scientific personnel (professors and researchers) was from 16 to 68, for postdocs from 3 to 31, and for PhD students from 7 to 77.

Interestingly, at least in SFF-III, there is no obvious correlation between the total number of employees and field of research, although the very largest centres are not in the humanities and social sciences. Clearly, the centres vary a fair amount in size, but there is nonetheless a clear concentration of research personnel and research effort around the centres.

[37] NIFU statistikkbanken 2017, 'researchers' includes PhD students and postdocs (*forskere/faglig personell*)

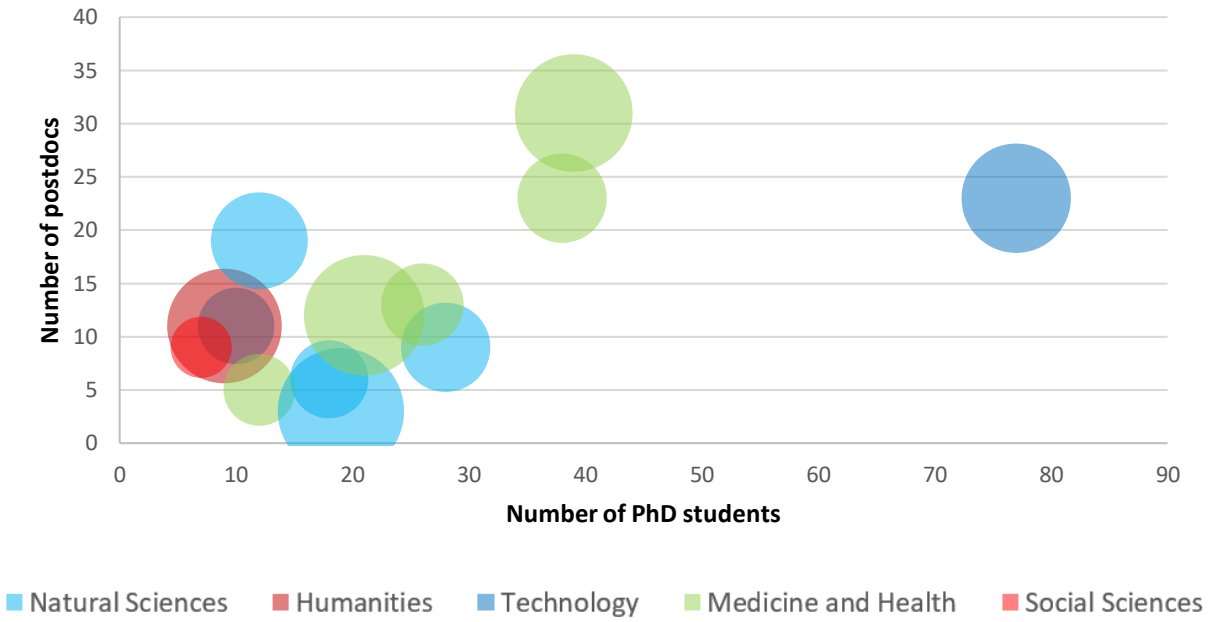


Figure 20 Number of scientific staff per centre, SFF-III (2018). Each circle represents one centre. The size of the circle corresponds to the number of senior scientific personnel (not PhD students and postdocs) in the centre. The placement of the circle along the x-axis shows the number of PhD students in the centre and the placement along the y-axis shows the number of postdocs in the centre. Colour coding denotes the centre's main scientific field.

Researcher training is an important component of the centres' activities and PhD students and postdocs perform a significant portion of the research at the centres. The centres employed 456 PhD students in 2018, which corresponds to 8% of all PhDs in Norway (Figure 21). This share has varied between 6 and 10%. The dip seen in 2013 coincides with the end of the SFF-I generation and the slightly delayed start of SFF-III. A similar generational switch took place in 2017, but with a slight overlay rather than a gap between generations. In 2018, the centres also employed 274 postdocs (Figure 22), corresponding to approximately 14% of all postdocs in Norway.[38] This share has since 2007 varied between 14 and 25%, but has lately been somewhat lower due to an increase in the total number of postdocs in Norway. Given that the centres' total funding represents approximately 5% of the R&D funding in Norwegian HEIs, they contribute at least as much as expected to Norwegian education at the graduate level. It is also not surprising that a large share of postdocs are employed at the centres, but that the share is as high as it has been is still interesting. Many centres report that they prefer to hire postdocs since they can choose among good candidates that have already shown their potential.

[38] National figure is from 2017 (last available).

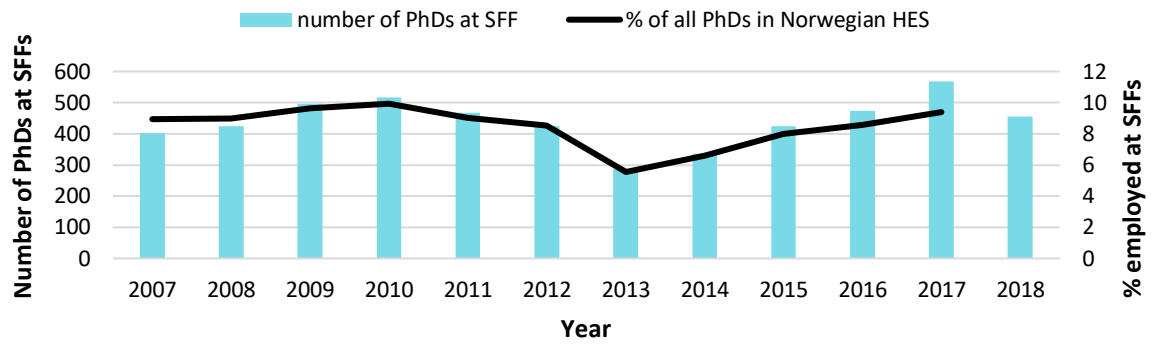


Figure 21 PhDs employed at SFF centres. Distribution of total number of PhD positions at SFF centres (blue bars) and percentage (black, solid line) of PhD positions in Norwegian HEIs employed at SFF centres, for the years 2007-2018.

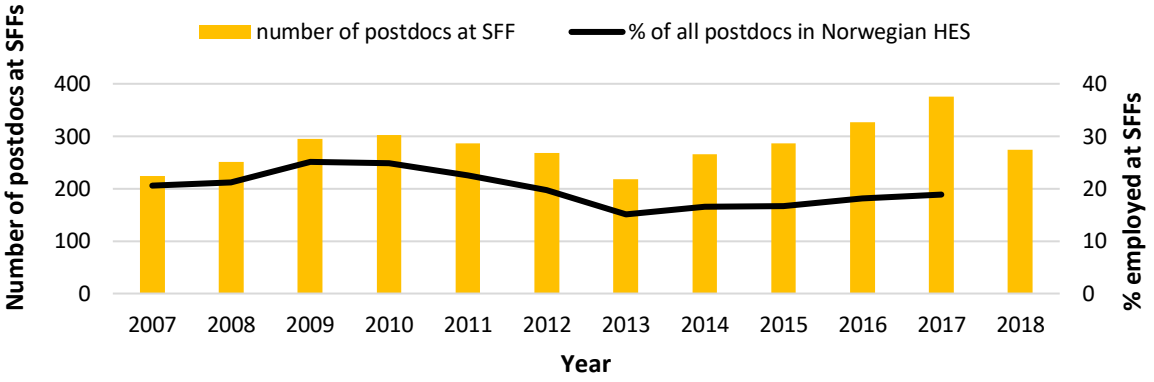


Figure 22 Postdocs employed at SFF centres. Distribution of total number of postdocs at SFF centres (yellow bars) and percentage (black, solid line) of postdocs in Norwegian HEIs employed at SFF centres, for the years 2007-2018.

At the SFFs, the vast majority of people reported as senior scientific personnel are employed either as an associate professor (*førsteamanuensis*), professor or researcher. While the centres' host institution is the main and permanent employer for many of the associate professors/professors, some have their primary affiliation elsewhere and are only employed at the centre part time. Many of these are employed as Professor II in a temporary - typically 20% - position. Employees who hold positions as researchers are often employed on the basis of external funds, in effect in temporary positions. In our data, all of these people are reported as senior scientific staff, and we have very limited data about the proportion of people employed in each kind of position.

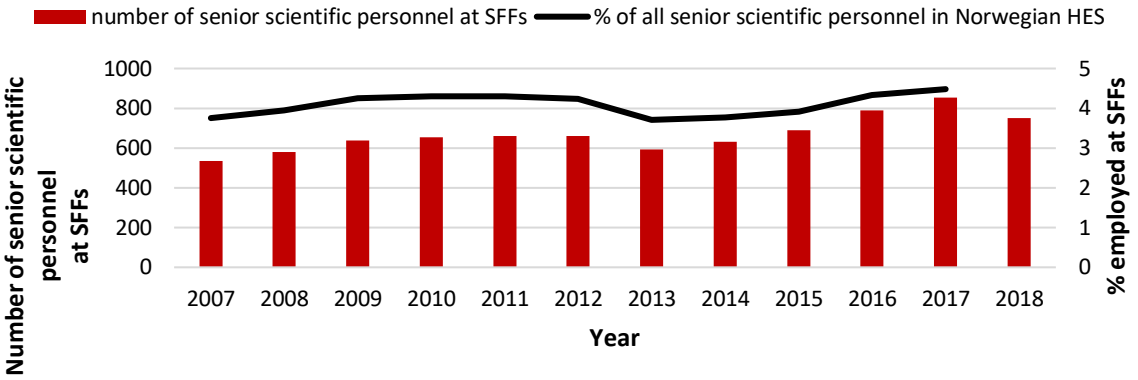


Figure 23 Senior scientific personnel (not postdocs and PhD students) employed at SFF centres. Distribution of total numbers of senior scientific personnel, excluding postdocs and PhD students, at SFF centres (red bars) and percentage (black, solid line) of senior scientific personnel in Norwegian HEIs employed at SFF centres, for the years 2007-2018.

Assessing the share of senior scientific personnel in relation to national numbers is a somewhat complicated matter. The available comparable data at the national level includes a fair share of personnel who are mostly involved in teaching (*lektor*). These positions are rarely found in the centres. However, a comparison between the number of senior scientific staff at the SFFs with all HEI-employed Norwegian R&D personnel, excluding only PhD students and postdocs, suggests that the centres employ approximately 4% of Norwegian senior R&D personnel. This number has been relatively stable over time (Figure 23).

The SFFs employ approximately 5% of all scientific personnel in the Norwegian higher education sector, but have a higher number of recruitment positions and fewer senior scientific staff

Technical and administrative staff are not included in the data for SFF scientific personnel in figures Figure **20** -**22**Figure **23**. The centres typically have very competent administrative support personnel who are dedicated to, and often paid by, the centres. In 2018, 274 people were employed as technical or administrative staff within the centres (Figure 24). It is worth noting that most centres also receive some administrative services from the host institution that are not reflected in the reporting.

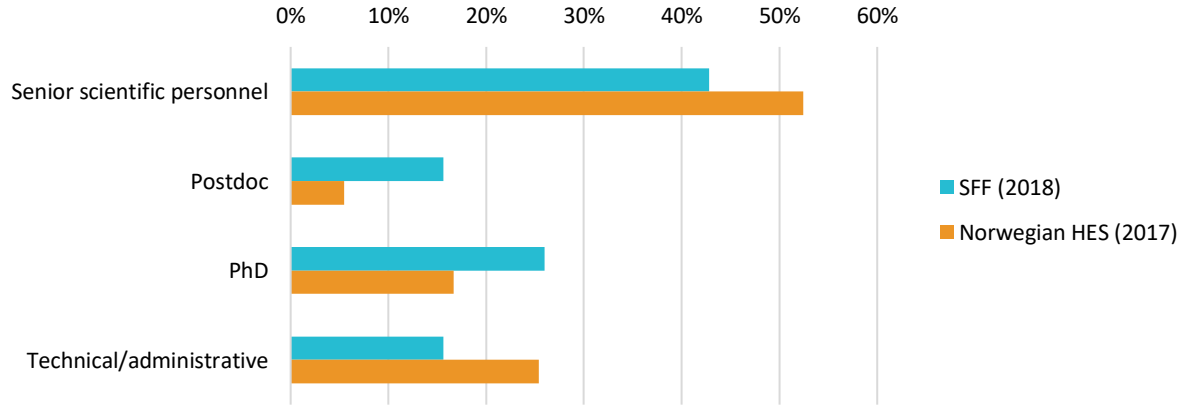


Figure 24 Fraction of employees per position category in the SFF scheme. Fraction of employees per position category in the SFF scheme (blue bars) and in Norwegian HEIs (2017) (orange bars), for comparison.

Moreover, the centres have many guest researchers who visit to collaborate, lecture and advise PhD students. They contribute greatly to the centres and numbered 352 in 2018.

2.8.3 International recruitment

The centres attract many good candidates from abroad. In their reporting, the centres are asked to provide information about where their employees had their previous employment. This is intended to give information about inbound mobility in the workforce.[39]

The share of foreign employees dropped in all categories between 2007 and 2012 (Figure 25). Our data seems to suggest that this is mostly due to an influx of employees reported as Norwegian (Feil! Ukjent bryterargument. - Feil! Ukjent bryterargument.). In 2013, there is a shift in the trends for all employee categories. This coincides with the end of SFF-I and start of SFF-III. The shift is particularly striking for postdocs. Between 2012 and 2015, the share of postdocs reported as foreign increased from 19 to 57% and has remained relatively stable since. Similarly, although a bit less dramatically, the share of foreign PhD students has increased from 21% in 2012 to 43% in 2016. Among more senior scientific staff, the increase has been from 13% in 2012 to almost 30% in 2016. In all three categories, the increased share of foreign employees since 2013 seems to stem from an increased number of foreign employees rather than from a drop in the number of Norwegian employees.

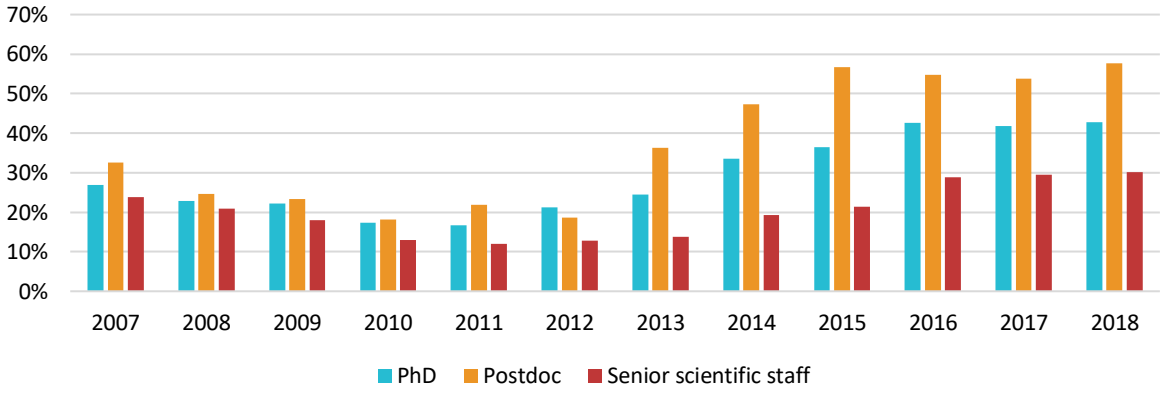


Figure 25 Share of SFF employees with foreign employment background. Percentage of SFF employees with foreign employment background (PhD: blue, Postdoc: orange, senior scientific staff: red) in the period 2007-2018.

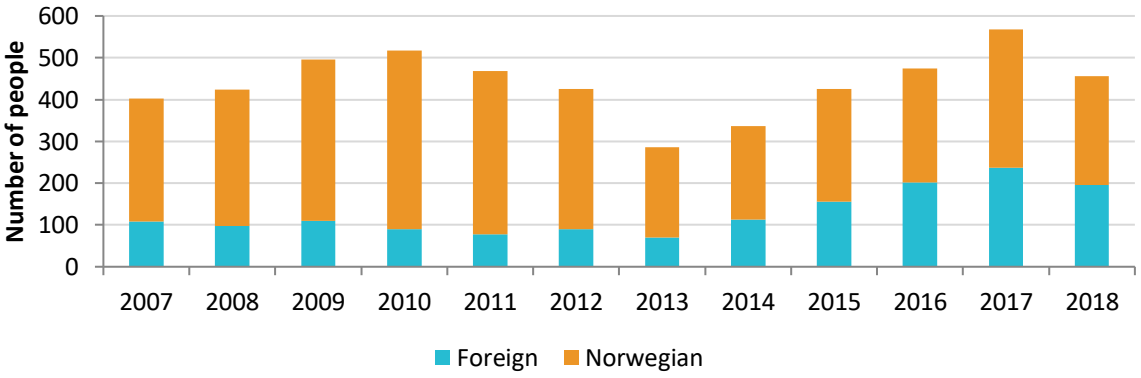


Figure 26 SFF PhD students. Total number of foreign (blue) and Norwegian (orange) PhD students in the SFF scheme in the period 2007-2018.

[39] The data that is actually reported seems to be a mix of previous workplace and citizenship/nationality, but in this context, we will describe those reported as not coming from Norway as 'foreign/foreigners'. Also, in connection with the reporting for the year 2013, the RCN administration gave a more in-depth explanation to the centres on how to report. This may have affected the quality of the reporting from 2013 onwards.

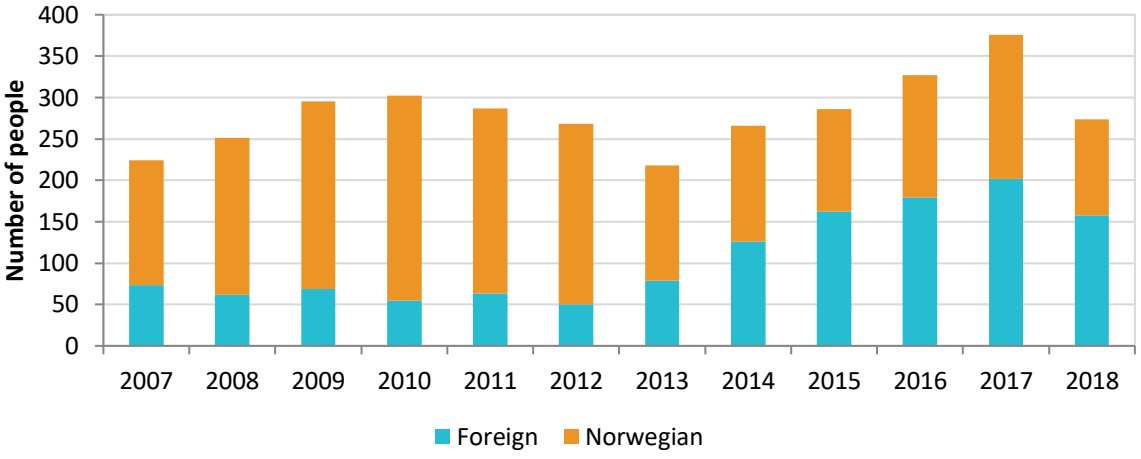


Figure 27 SFF postdocs. Total number of foreign (blue) and Norwegian (orange) postdocs in the SFF scheme in the period 2007-2018.

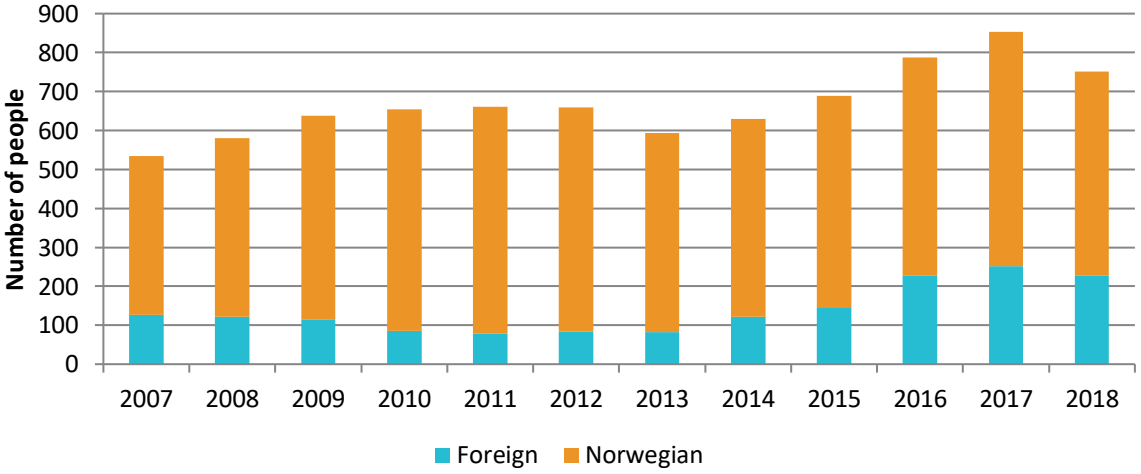


Figure 28 SFF senior scientific staff. Total number of foreign (blue) and Norwegian (orange) senior scientific staff in the SFF scheme in the period 2007-2018.

Directly comparable national numbers are not readily available, but it is well known that foreign citizens make up an increasingly large share of Norwegian PhD graduates. While about 10% of PhD graduates had foreign citizenship in 1999, the share in 2018 was 42%. This matches well with the proportion of foreign PhD students in the SFFs in the last few years. However, there is no dramatic shift in the national trend[40] in 2012-2013. It is therefore necessary to keep in mind that the quality of our data could be questioned, perhaps particularly before 2013. Another national diversity statistic categorises PhD students, postdocs and professors according to whether they are 'immigrants and descendants of immigrants' and 'other'. In 2014 (the last year for which there is data available), 39% of Norwegian PhD students, 59% of postdocs and 23% of professors were categorised as immigrants or descendants of immigrants.[41] This is, of course, a different classification than both citizenship and

[40] NIFU Indikatorrapport, 2018, Figure 3.5.
[41] NIFU statistikkbanken 2014, HEI, *mangfoldsstatistikk.*

country of previous employment, but the proportions are nevertheless quite similar to the proportions seen among employees in the SFF centres.

2.8.4 Gender balance

The gender balance among the centre employees has been a point of interest for quite some time.[42] Over time, the share of females has increased in all the scientific staff categories that the centres report on (PhD, postdoc and senior scientific staff) (Figure 29). The increase has been particularly large among senior scientific staff. In 2004, 17% of the senior scientific staff were female while the comparable number in 2018 was 37%. As mentioned earlier, the senior scientific staff at the SFFs are mostly employed as associate professors, professors or researchers. To compare these numbers to Norwegian HEIs, one must keep in mind that the staff categories are not identical in the two datasets. It is also important to note that the gender balance varies considerably among fields in the Norwegian research system (30 **-** **31**). The research fields in which the SFFs operate are neither identical between centre generations, nor do the SFFs accurately mirror the field distribution in Norway (see Figure 10 for comparison).

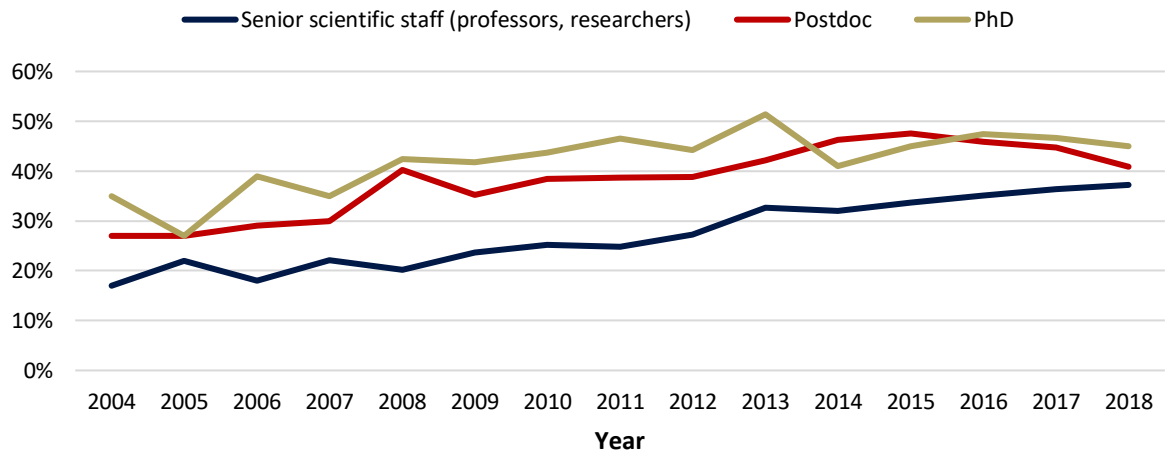


Figure 29 Percentage of females in scientific positions (SFF). Percentage distribution of females in senior scientific (black), postdoc (red) and PhD positions (brown) in the period 2004-2018.

[42] *Likestilling i forskning – hva fungerer* (2009).

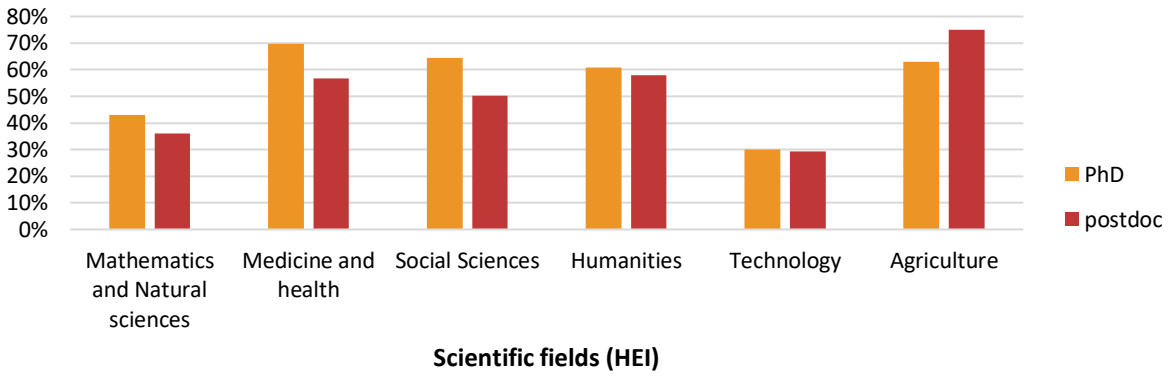


Figure 30 Percentage of females in recruitment positions per scientific field, Norway (HEI, 2017). Percentage of female employees in postdoc (red bars) and PhD positions (orange bars), in Norwegian HEIs. The data and field classifications are from NIFU statistikkbanken.

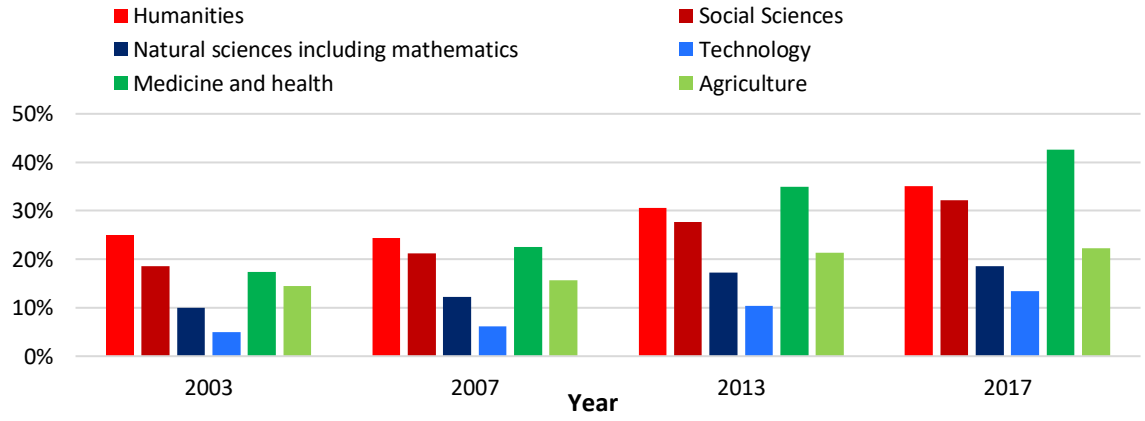


Figure 31 Percentage of female professors per scientific field, Norway (HEI). Percentage of female professors, per scientific field, in the Norwegian HEIs in the period 2003-2017. The data and field classifications are from NIFU statistikkbanken.

The percentage of female professors in Norway as a whole has increased from 16% in 2003 to 30% in 2017[43] (Figure 32). The dashed line in the same figure shows the share of females in a category that combines all Norwegian associate professors, full professors (prof I) and researchers. This category may be more comparable to the SFF senior scientific staff category, but the share of people in the different positions is not necessarily the same. At the national level, the share of females in this combined category has increased from 25 to 41% between 2003 and 2017. It seems therefore that the increase in the percentage of females in the SFF senior scientific staff category is in line with a similar national trend, but the share of females in all categories is somewhat lower among SFF employees compared to the national average.

[43] NIFU statstikkbanken, HEI 2017, R&D personnel in professor positions: 1,199 female and 2,843 male.

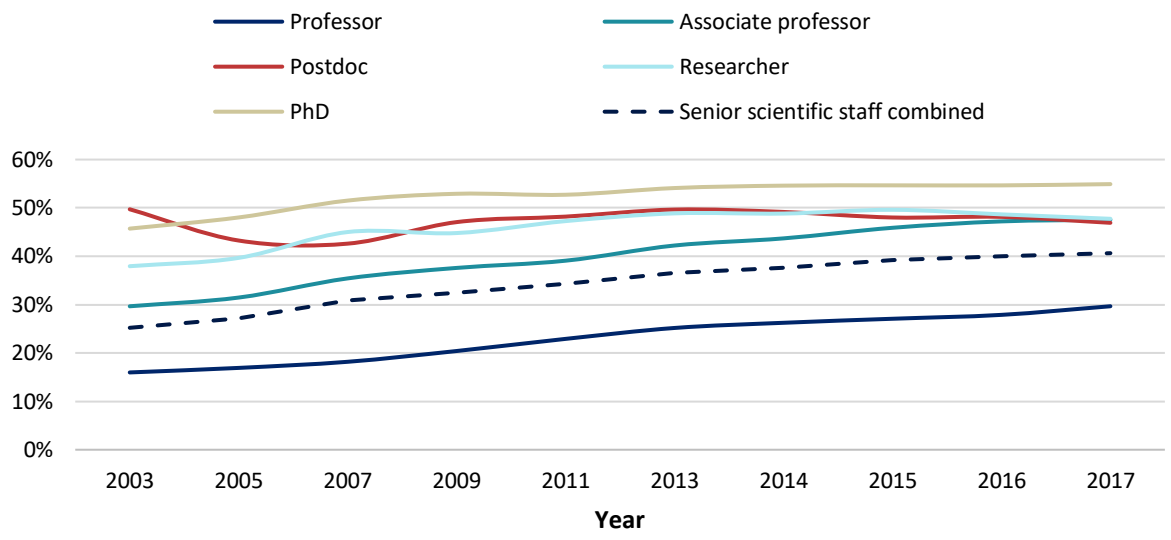


Figure 32 Percentage of females per position category, all scientific fields, Norway (HEI). Percentage of females per position category (solid lines) in all scientific fields in Norwegian HEIs, spanning 2003-2017. Percentage of females in senior scientific positions combined is plotted in black (dashed line).

For SFF-II, the RCN set aside NOK 30 mill. for two special calls for proposals for measures to promote gender equality in the centres (in 2008 and 2012). As a result, the centres became more aware of the issue, and introduced different programmes to increase the number of female researchers. For example, one centre introduced a yearly conference aimed at female researchers and has made efforts to show younger women, as well as the general public, that a career as a researcher is equally open to women.

Of particular interest has been the gender balance among centre directors.[44] In the selection process, the scientific merit of the proposed centre director is an important criterion. For an application to be competitive, the director needs to be at a scientific level similar to a well-established full professor. As mentioned earlier, over the time that the SFF scheme has been in operation, the share of female Norwegian professors has increased from 16 to 30% (Figure 32), but this figure varies between fields (Figure 31). Another sign of the scientific merit required to succeed in the application process is that the directors of half of the centres funded in SFF-IV have previously been awarded an ERC Advanced Grant. The gender distribution among Norwegian ERC winners is very uneven, particularly at the most advanced level (Figure 33). Only two of the 31 ERC Advanced Grants at a Norwegian host institution have a female principal investigator, and one of them is already a centre director.

[44] An overview of the number of female centre directors in applications and funded centres can be found in the appendix (this data shows only the first centre director, not planned transfers). Gender balance among SFF centre directors is also discussed in the report from RCN *Likestilling i forskning – hva fungerer* from 2009.

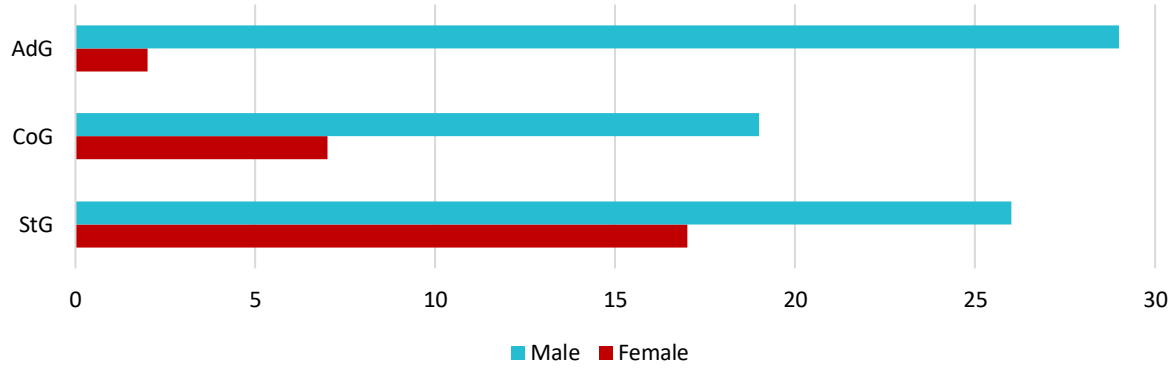


Figure 33 Norwegian ERC grantees by gender. Norwegian recipients (female: red, male: blue) of ERC grants (AdG: Advanced Grants, CoG: Consolidator Grants, StG: Starting Grants).

At present, 26% of the active centres (SFF-III and -IV) have female directors. This is partly due to transfers of leadership during the project periods (Figure 34).

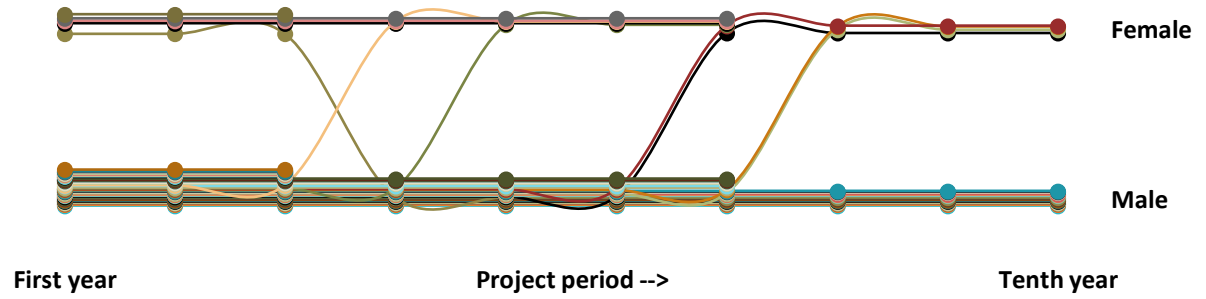


Figure 34 Effect of leadership transfer on gender balance among centre leaders. Leadership and leadership transfers from SFF project start until SFF end of period, between male and female centre directors. Each line represents an SFF centre. Lines that do not reach the tenth year are still active SFF projects.

In the first generation of SFFs, a female centre director was behind 3% of the applications, while none of the centres that were funded had a female director. In SFF-II, efforts were made in the call to improve gender balance. Institutions were '*invited to encourage the research communities to nominate women as CoE directors and leading researchers. All factors otherwise being equal in terms of scientific quality*', priority would be given '*to applications with female centre directors and centres with a strong percentage of women in leading positions*' (*moderat kjønnkvotering*). The applicants were also asked to specify target figures for gender balance that were to be evaluated in the mid-term evaluation, and in the selection of SFF-II centres, the assessment of scientific quality listed the criterion '*The environment, ethics and equal opportunity*'. In the end, 14% of the applications and 1 of 8 (13%) of the funded SFF-II projects were led by a female. In SFF-III, similar efforts were made to promote gender equality, except that there were no separate calls for gender equality measures. The funding for gender equality measures had anyway been rather limited, and there was a perception that in the 5-year period that had lapsed since the SFF-II call, societal focus on gender issues had increased. The percentage of female centre directors increased to 24% in the applications and was 23% among the funded SFF-III centres.

In SFF-IV, the selection procedures also gave priority to female centre directors, all else being equal, and included an assessment criterion to evaluate the appropriateness of '*plans to support development of research talents of the under-represented gender towards qualification to more senior-level positions*' in scientific fields characterised by a gender imbalance. Among the SFF-IV applications, 21% were led by a female director and 1 of 10 (10%) of the funded projects had a female director. Given the low number of centres that are funded in each call, the statistic is acutely sensitive to small deviations. Nevertheless, the share of female directors in SFF-IV was seen as disappointing. In response, the 2018 RCN *Policy for gender balance and gender perspectives* now contains a requirement that all host institutions that submit more than four applications must make sure that at least 40% of all applications from their institution propose a female centre director. This gender policy will be implemented in the SFF-V call.

2.9 Publications

For an in-depth analysis of the centres' scientific results, we refer to NIFU's sub-report *Bibliometric analysis and career mapping of the SFF scheme,* specifically commissioned for this evaluation. However, the centres' annual progress reports cover a number of key performance indicators (KPIs) and other information that is to some degree complementary to the information found in NIFU's sub-reports. We therefore provide a summary of this information here. Please note that this reporting reflects the activity of the entire centre - i.e. the activity funded by the centres' 'total funding'.[45]

2.9.1 Scientific publications

Scientific publications are important outputs from the centres. Although the RCN views quality as more important than the number of publications, the centres are nonetheless asked to report on the number of peer reviewed publications they have published each year. This figure is variable from year to year, but in 2018, the centres reported 1,172 such publications (Figure 35). This is 7.4% of all Norwegian publications in 2018.[46]

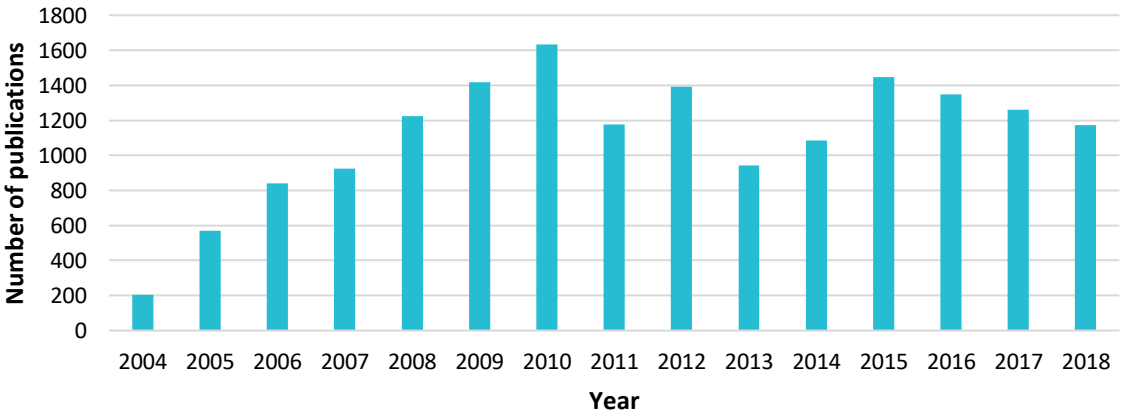


Figure 35 Total number of scientific publications reported per year, all active centres. Frequency distribution of publications from all active SFF centres, for the period 2004-2018.

[45] See 2.6. for an explanation of the term total funding.
[46] NIFU's Indikatorrapport 2018: 'Norwegian researchers published 15,900 articles in 2018'.

When calculated according to SFF generation (and normalised by the number of centres per generation), a lag in publication rate becomes evident during the first couple of years of each generation (Figure 36). After this initial start-up period, the number of publications per centre is on average 60-70 per year.

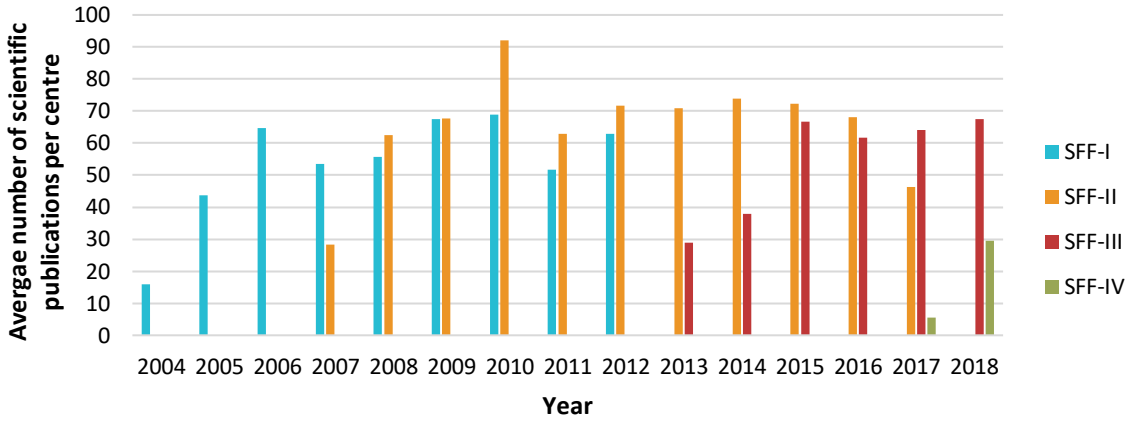


Figure 36 Average number of scientific publications per centre per year (2004-2018). Average number of publications per SFF centre, normalised by the number of SFF centres per SFF generation, spanning 2004-2018. SFF generations are colour coded; SFF-I (blue), SFF-II (orange), SFF-III (red), SFF-IV (green).

Some of the centres operate in fields where it is more common to publish books or book chapters, and in addition to the scientific publications mentioned above, the centres have reported approximately 20 monographs and 200-300 anthologies per year as output (Figure 37).

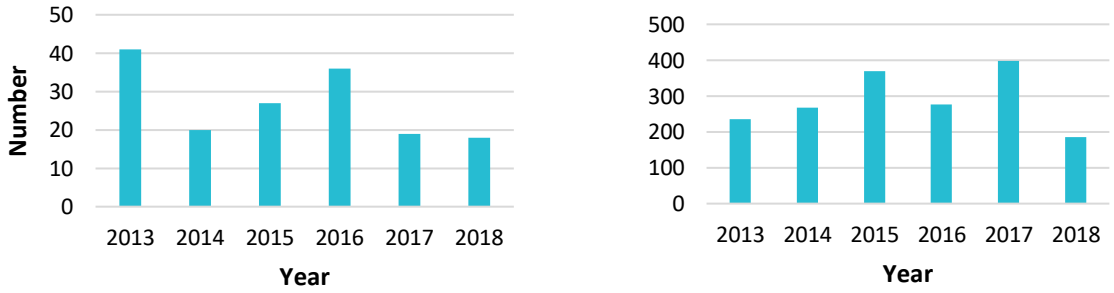


Figure 37 Number of monographs and anthologies (2013-2018). Total number of monographs (left) and anthologies (right) published by SFF centres (2013-2018).

2.9.2 Citations

The number of citations is a commonly used indicator of a publication's importance for subsequent research. This indicator is important for the SFF scheme as we consider citations to be a better indicator of research quality than publication counts. However, the RCN does not directly collect data on citations and for the purposes of this evaluation, we refer to NIFU's sub-report for citation analyses.[47] Nevertheless, in 2016 the RCN commissioned a list of the 200 most highly cited researchers in Norway.[48] Among the 200 scientists listed were 56 scientist that at some point in their careers had

[47] *Bibliometric analysis and career mapping of the SFF scheme*, NIFU (2019).
[48] Field normalised list commissioned from NIFU based on publications from the period 2010-2014.

been employed by the centres, including 13 centre directors. Every year, Clarivate Analytics publishes a list of highly cited scientists worldwide. This list normally contains a limited number of Norwegian researchers, but three centre directors have been listed there repeatedly for the last few years. This suggests that the centres employ a sizeable fraction of the highly-cited scientists in Norway, a conclusion that is also supported by NIFU's results.

2.10 Other results

2.10.1 Popular science dissemination

Most, if not all, centres have activities directed at a more general audience than the purely scientific community. There are many good examples of this, ranging from substantial contributions to museum exhibits, popular science books and presentations, and interviews in documentaries and mass media outlets. While it is obvious that some centres are more active in this regard than others, there are several that contribute considerably. Over the years, the centres have for instance published hundreds of popular science articles (Figure 38) and contributed to thousands of mass media publications (Figure 39).

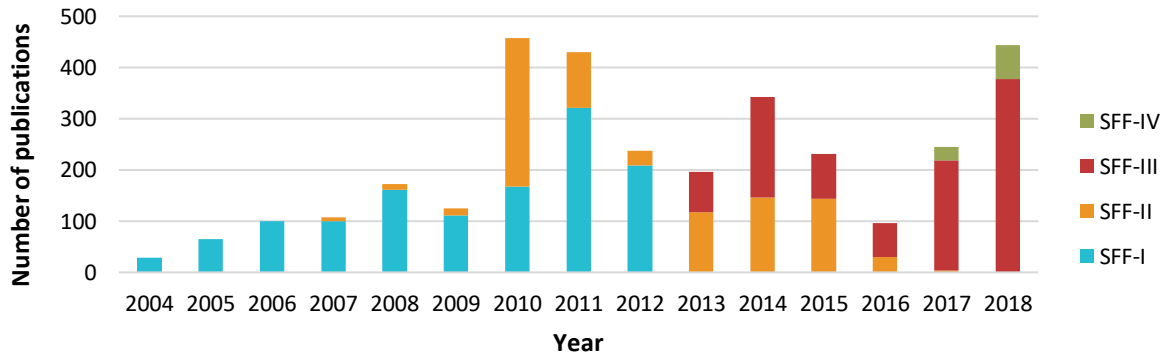


Figure 38 Popular science publications (2004-2018). Number of popular science publications from 2004-2018, sorted by SFF generation. SFF generations are colour coded; SFF-I (blue), SFF-II (orange), SFF-III (red), SFF-IV (green).

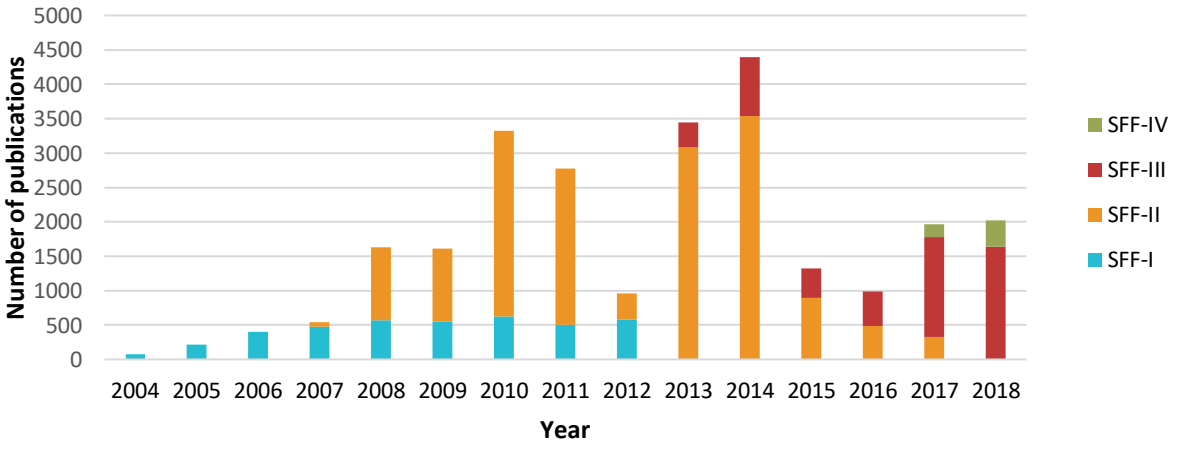


Figure 39 Mass media contributions (2004-2018). Number of mass media contributions for the period 2004-2018, sorted by SFF generation. SFF generations are colour coded; SFF-I (blue), SFF-II (orange), SFF-III (red), SFF-IV (green).

It is also interesting to note that compared to other programmes of somewhat comparable size (Feil! Fant ikke referansekilden.), the SFFs seem to have a much greater emphasis on dissemination to the general public through the mass media (Figure 41). However, it is important to keep in mind when making these comparisons that the programmes have vastly different objectives and histories (shorter than SFF), and that the SFFs report on activity arising from their *total* funding.

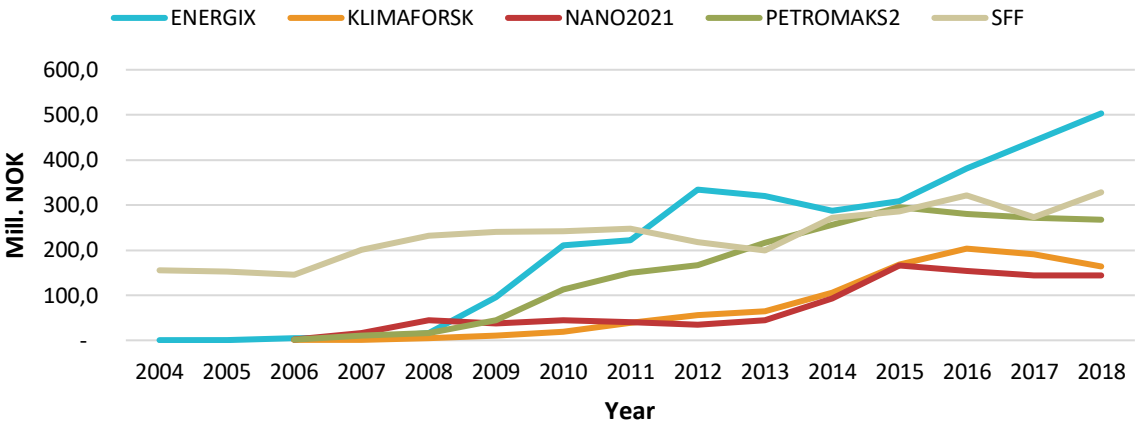


Figure 40 Revised budget SFF vs. large RCN programmes. The large programmes for which budgets are shown are the same as the ones for which indicators are shown in Figure 41 - Figure **42**.

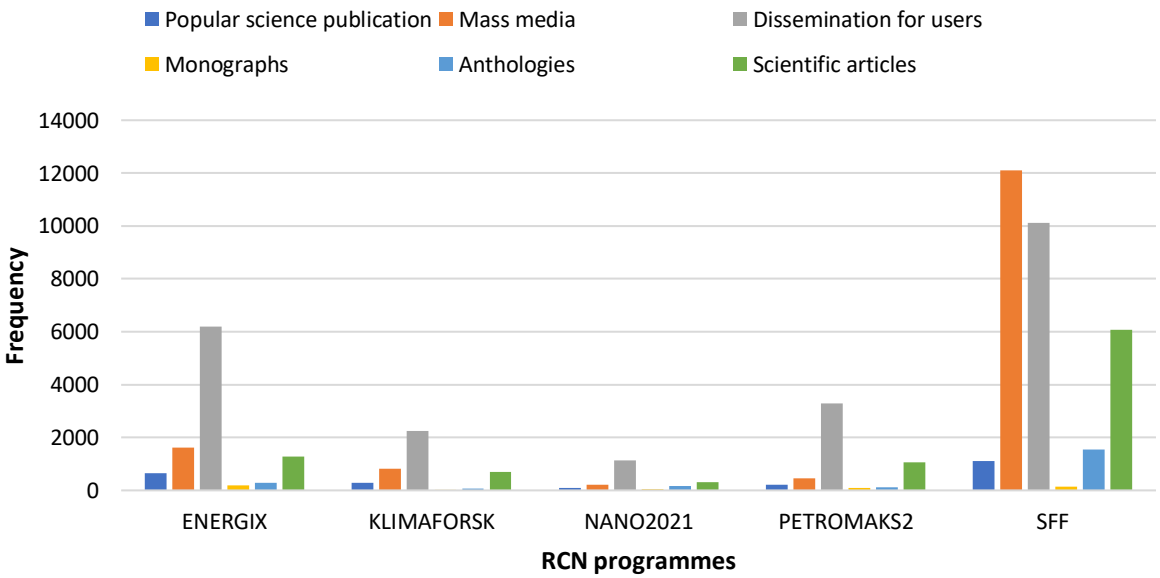


Figure 41 Dissemination and publication indicators, in RCN programmes (2013-2017). Dissemination and publication indicators (color-coded) between 2013-2017 are plotted for SFF and compared to other, large RCN programmes.

2.10.2 Innovation

The centres also contribute to innovation. Over the period the SFF scheme has been in operation, nine centres have reported that they have applied for 78 patents and entered into nine licensing agreements. Furthermore, five centres have reported starting at least 12 new companies/business ventures. Eight of these were still in operation in 2018 and employed close to 100 people.

An interesting observation can be made regarding the innovation indicators (KPIs) (Figure 42). When comparing KPIs to other programmes at the RCN,[49] it seems that the number of new companies emanating from the SFFs is quite similar, as is the number of new or improved methods/models/prototypes, licensing agreements signed and patents registered. However, the indicator that measures new business areas in existing companies resulting from the project is much lower for the SFFs. The numbers of companies that have introduced new or improved products, processes and services to enhance value creation is also much lower. It is tempting to speculate that this is due to the other programmes having stronger ties to industry. Hence, commercially interesting results stemming from the projects are taken up by the industry partners rather than giving rise to new ventures.

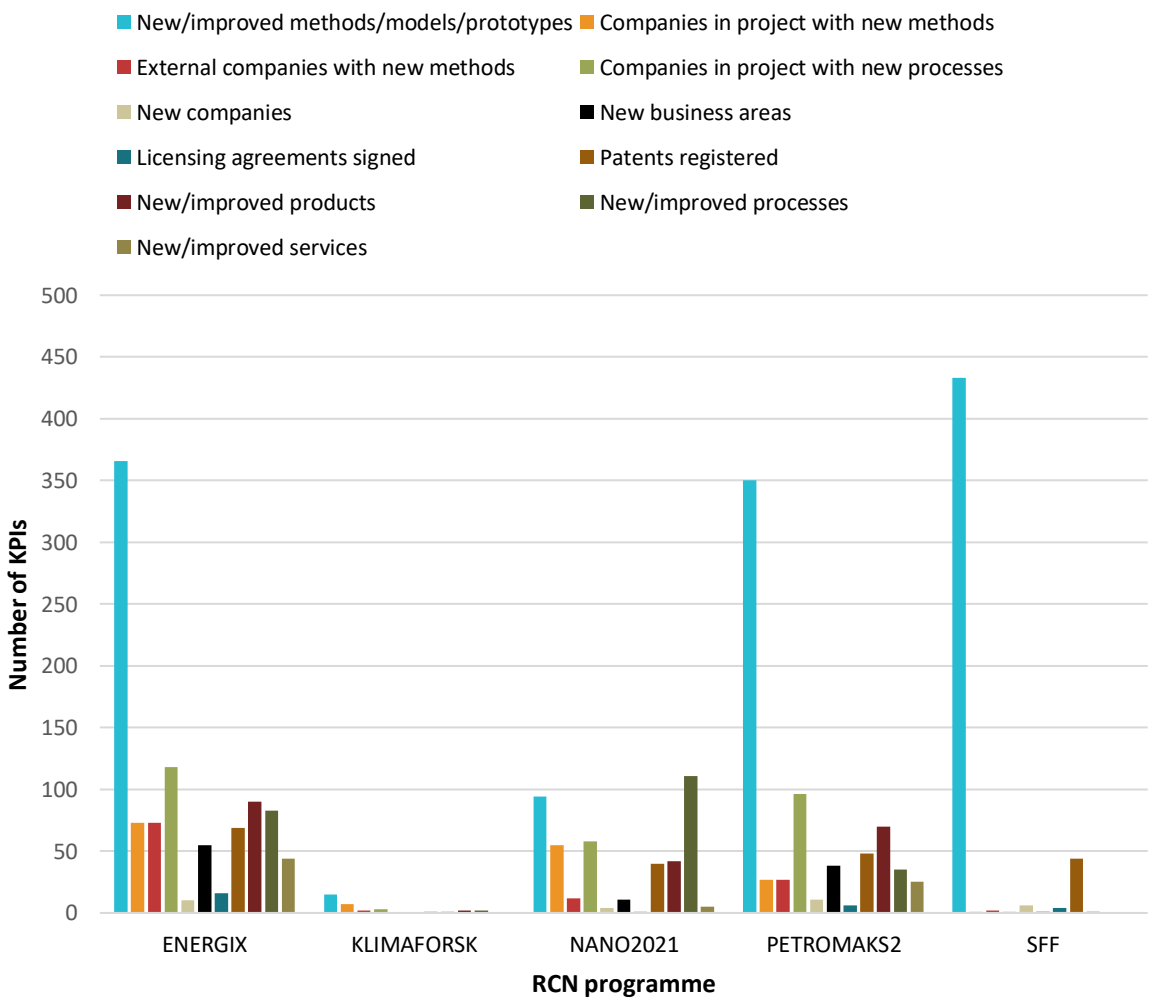


Figure 42 Reported innovation-related KPIs in RCN programmes (2013-2017). Innovation indicators (KPIs; colour coded) are plotted with respect to large RCN programmes.

2.10.3 International collaboration

One of the stated motivations for the SFF scheme was to increase the attractiveness of Norwegian researchers to international research collaborations. Since 2006, the centres have reported which countries they have research collaborations with. It is clear that the international collaboration in the

[49] KPIs have been compared with ENERGIX, KLIMAFORSK, NANO2021, PETROMAKS2.

centres is extensive. Over the years, the centres have reported that they have collaborated with researchers in as many as 93 different countries. The average number of countries that each centre reports a collaboration with has increased significantly and particularly since 2012, from less than 10 to over 17. Most of the collaborations are with researchers in the US or Western Europe (Figure 43).

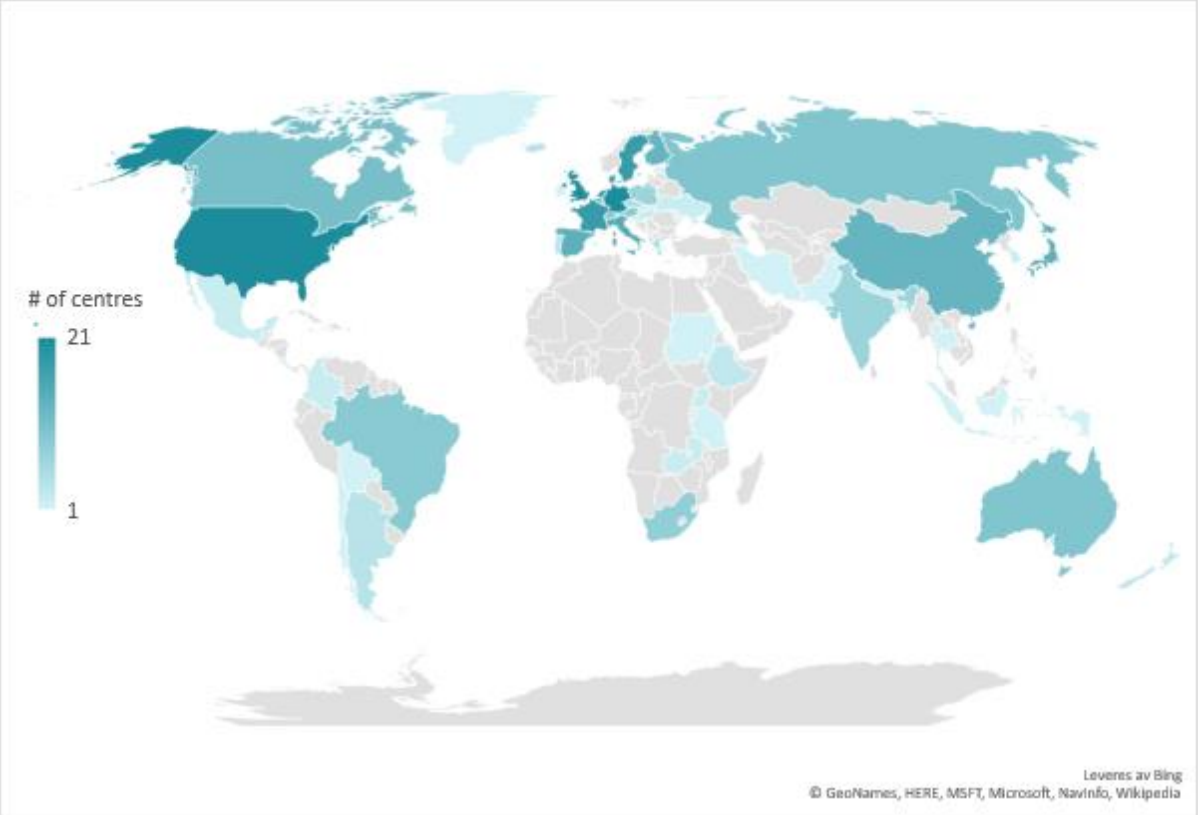


Figure 43 Countries SFF centres collaborated with in 2028. All active SFF centres collaborated internationally in 2018. Shades of green indicate number of centre collaborations in a given country, ranging from 1 (light green)) to 21 (dark green).

In 2018, all of the 23 active centres had international collaborators. Twenty-one of them reported collaborating with research groups in Germany, the US and the UK. Other important countries were Sweden, Denmark, France and the Netherlands. Outside of Europe and the US, more than 30% of the centres had collaborations with researchers from Brazil, Russia, India, China, South Africa, Japan, Canada and Australia. With the exception of Australia, these are countries with bilateral research agreements and are of particular political priority.[50]

2.10.4 International competitiveness

The amount of international funding awarded to a scientist can be used as an indicator of international competitiveness. Increasing the amount of international funding for Norwegian research was also mentioned as a desired result of increased scientific quality in the white paper that preceded the SFF scheme (Meld. St. 39 (1998-1999)).

[50] The white paper Panorama (2015) and the RCN's strategy on international collaboration for 2010-2020.

In their annual reporting, the centres are asked to provide information about the international funding they consider to be part of the centre's total funding. In 2018, 20 of the 23 centres reported income from foreign sources.[51] The foreign source funding amounted to NOK 95 mill., or approximately 12% of Norwegian HEIs' foreign source income.[52] The centres mostly received their funding from EU/H2020 and in particular the ERC. The centres were partners in six MCSA-ITN training networks and coordinated one MCSA-Cofund and seven MCSA individual fellowships. They further reported having received funding from five ERC Starting Grants (StG), three Consolidator Grants (CsG) and six Advanced Grants (AdG). This suggests that quite a few of the centres have researchers who are internationally competitive at the highest level.

Compared to Norway as a whole, the researchers at the centres have been particularly successful in their applications for ERC Advanced Grants (Figure 44).[53] In the period 2007-2018, Norwegian institutions have hosted[54] a total of 34 Advanced Grants. The principal investigator (PI) of 17 (50%) of these grants had either been or was employed at an SFF centre when they received their grant. Another seven of the Norwegian ERC Advanced Grant PIs joined an SFF after receiving their grant, several of these because they applied for an SFF as a centre director.

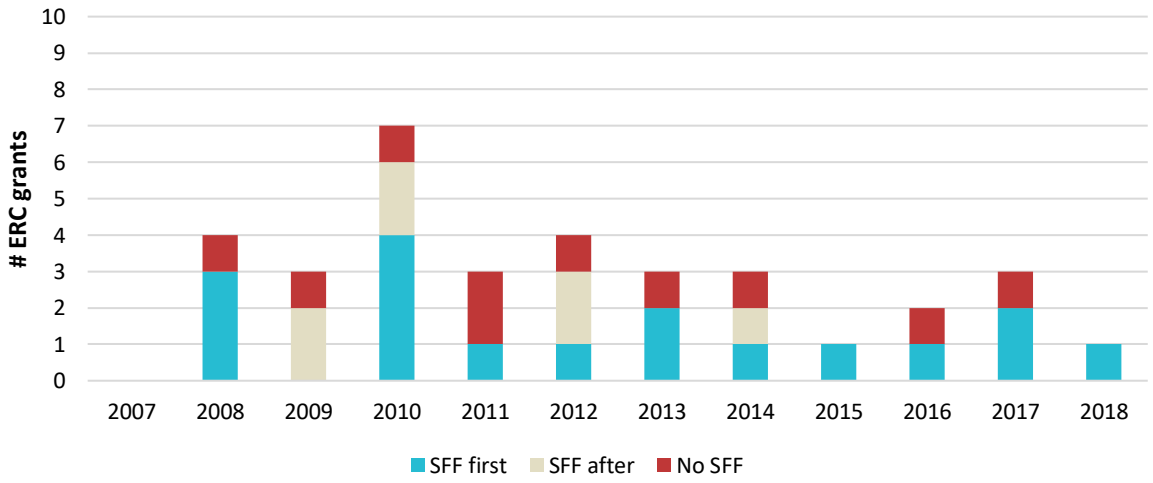


Figure 44 Norwegian ERC Advanced Grants by affiliation (2007-2018). Number of ERC grants in the period 2007-2018 by SFF affiliation. Colour coding indicates whether the principal investigator (PI) receiving an ERC grant was or had been employed at an SFF (blue), joined an SFF (white), or has no affiliation to an SFF (red).

In competition for other types of ERC grants, the centres have also been successful, although they have been less dominant. Of the 26 Norwegian Consolidator Grants, the PIs of seven of the grants had been or were employed at a centre before they received their grant and two joined an SFF afterwards (Figure 45). Of the 48 Starting Grants, the corresponding figures are 14 and three (Figure

[51] Excluding EURATOM because Norwegian participants are funded by the RCN.
[52] NIFU statistikkbanken, NOK 781 mill in 2017.
[53] Data presented is from the period 2007-2018 for all types of ERC grants.
[54] The grants counted as Norwegian here are those that list Norway as the country of their host institution at https://erc.europa.eu/projects-figures/erc-funded-projects. This is different from that used in the analysis in NIFU's sub-report *Bibliometric analysis and career mapping of the SFF scheme.*

46). Among the three Norwegian PIs with Proof of Concept Grants, none have had a centre affiliation. The only Synergy Grant PI, however, is a previous SFF centre director.

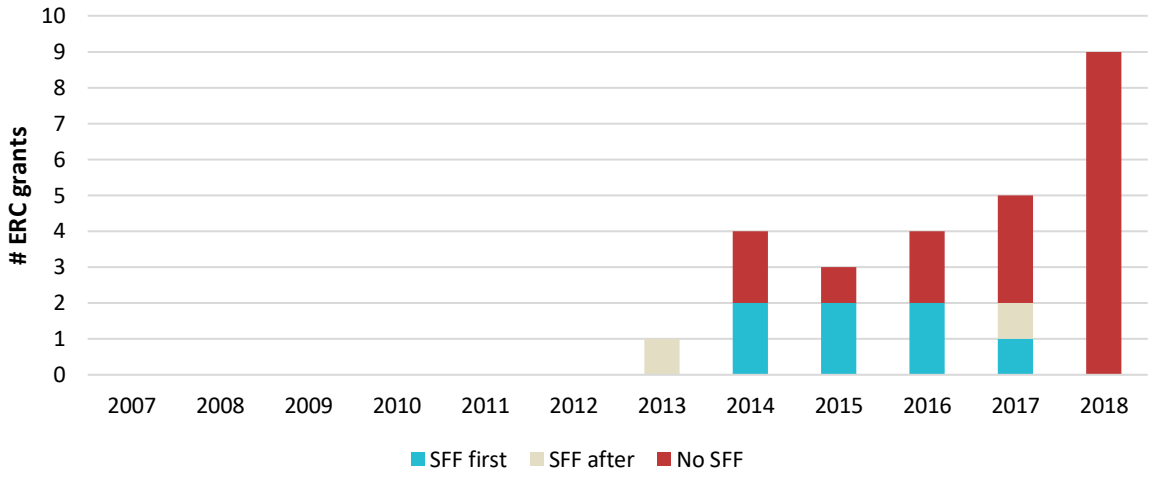


Figure 45 Norwegian ERC Consolidator Grants by SFF affiliation. Number of ERC Consolidator Grants in the period 2007-2018 by SFF affiliation. Colour coding the same as in Figure 44.

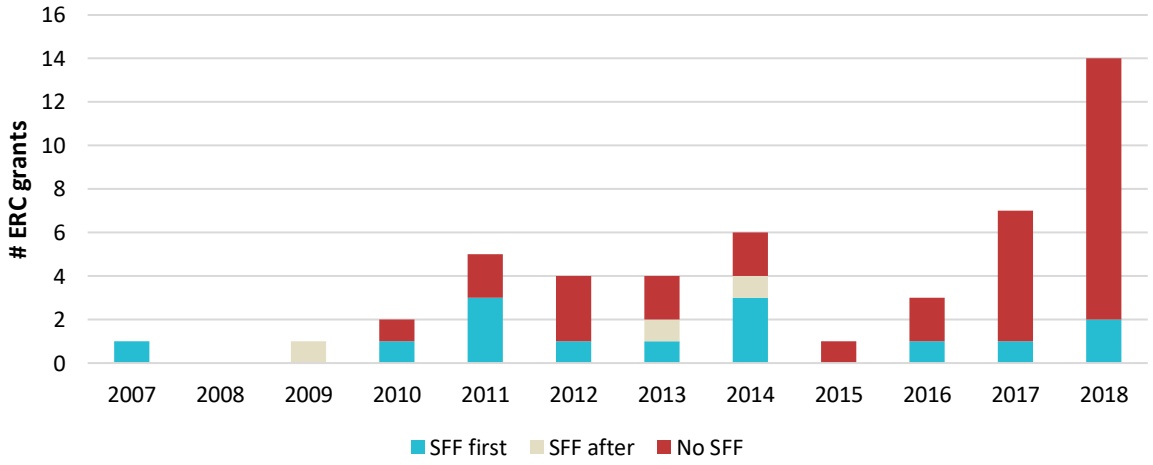


Figure 46 Norwegian ERC Starting Grants by SFF affiliation. Number of ERC Starting Grants in the period 2007-2018 by SFF affiliation. Colour coding the same as in Figure 44.

A quick look at the panels from which Norwegian researchers have received their ERC grants shows greater success in some fields than others (Figure 47). In the field of Earth System Science, 10% of all ERC grants awarded internationally have been awarded to Norwegian institutions. This is also one of the panels where the centres have had major success – seven of these 12 grants were awarded to a centre-affiliated researcher. The centres have also been successful in the Neurosciences and Neural Disorders panel, the Mathematics panel, the Universe Sciences panel, the Individual, Institutions and Markets panel and the Human Mind and its Complexity panel, illustrating that the grants are spread across many different fields and centres.

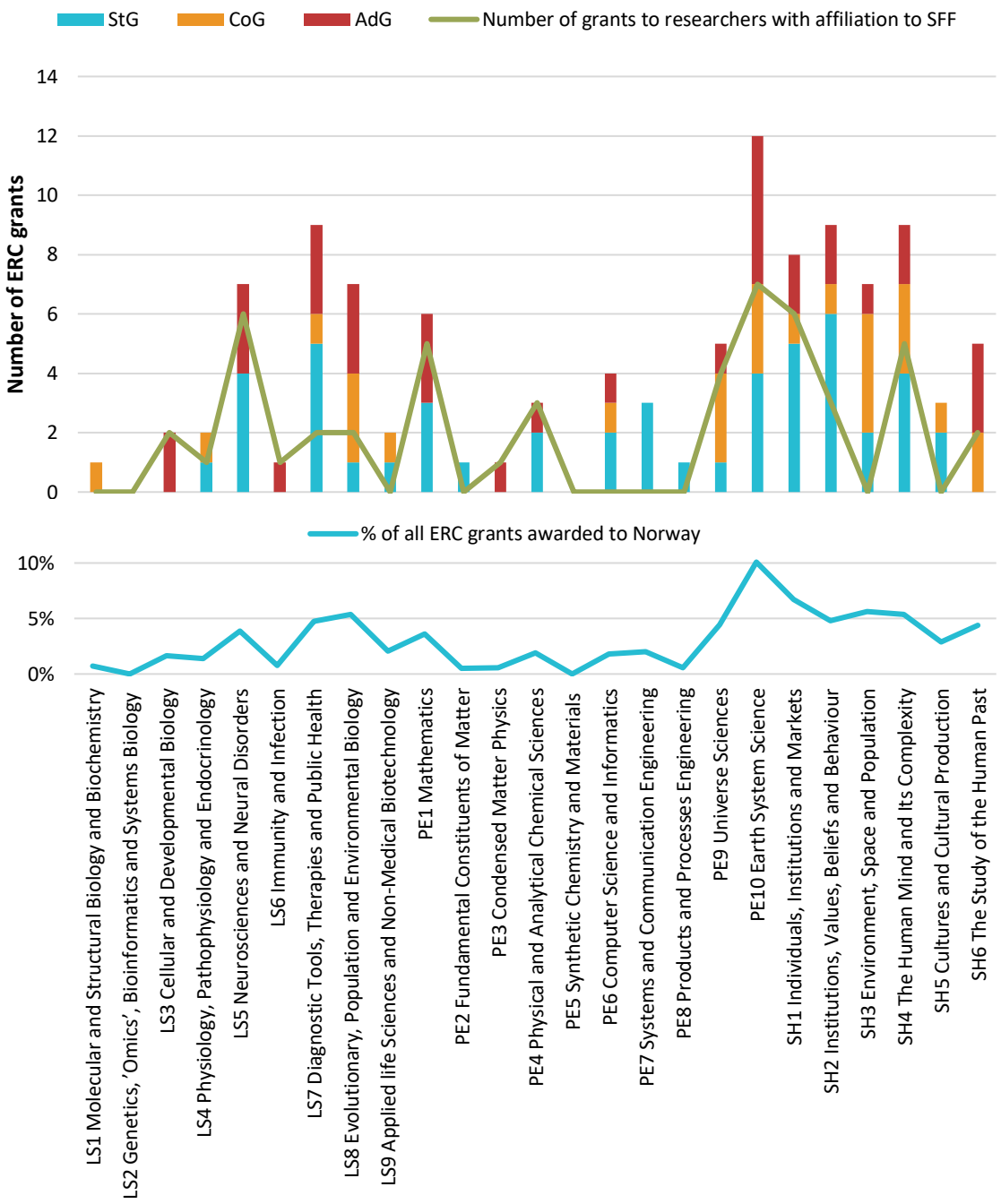


Figure 47 ERC panels with Norwegian grants. Upper panel: Total number of Norwegian ERC grants in each panel category. Colour coding; StG (Starting Grants, blue), CoG (Consolidator Grants, orange), AdG (Advanced Grants, red). Number of grants awarded to researchers affiliated with an SFF centre is superimposed (green line). Lower panel: Percentage of all ERC grants awarded to Norwegian researchers (blue line)

2.10.5 Prizes

Another indicator of scientific recognition is the award of prestigious prizes. SFF scientists have won many important prizes and awards. The most notable is undeniably the Nobel Prize in Physiology or Medicine in 2014, which was awarded to May-Britt Moser and Edvard Moser, together with John O'Keefe. The prize was awarded for a discovery they made in 2005, two years after they started their first SFF centre. They have on several occasions stated how important the SFF funding has been for their research.[55]

2.11 After the centre period

The SFF scheme was set up to provide long-term, but not permanent, financing. It was thought that after 10 years of operation, the successful centres would be sufficiently competitive to obtain funding elsewhere and/or be supported by their host institutions. The SFF scheme generally provides only a quarter of the centres' funding after all. The best way to handle the end of the project period, however, has been a topic of much debate and was also mentioned in the previous SFF evaluation.

Since the start of the SFF scheme, a total of 21 centres have ended their project periods (13 SFF-I centres ended in 2012/2013 and the eight SFF-II centres in 2017). However, some of the currently active SFF-III and SFF-IV centres have their origin in previous centres, suggesting that some of the activity has been continued in a new SFF. This can perhaps be illustrated by tracking the careers of the centre directors of the active centres. Among the 13 SFF-III centre directors awarded funding from 2013, three have a history as an employee of one of the SFF-I centres, and among the ten SFF-IV centre directors, five had been employed in a previous SFF (either SFF-I or -II). Two of these had been SFF-II centre directors. In addition, one SFF-I centre director is today a vice director of an SFF-IV. Other centres have found external funding through sources such as Stiftelsen Kristian Gerhard Jebsen, ERC and RCN programmes other than SFF (among them SFI and Toppforsk). Thus, many of the now terminated centres have been able to continue some, but not all, of their activity, and under a different organisational umbrella/name.

A related topic is mentioned in the current version of the LTP (2.4.3. Norwegian edition). It refers to a discussion concerning whether or not there is a need for a funding instrument with an even longer time horizon than the current SFF scheme for Norway's most exceptional research groups. According to the same LTP, it is primarily the responsibility of the host institution to secure long-term and predictable financing for their best groups, but the government nevertheless sees it as beneficial that already established centres are able to apply again in later SFF calls. In the SFF-III call, a restriction on applying a second time was inferred from a stated 'expectation of scientific renewal'. This text was not included in the SFF-IV call. Some centre directors are nevertheless of the opinion that being able to enter into the regular SFF competition does not provide enough predictability.[56] Instead, they have proposed that a small number of centres are given a semi-permanent funding/status contingent on rigorous periodic evaluations. In the ensuing discussion, the RCN and others pointed to challenges

[55] For instance: https://www.universitetsavisa.no/forskning/2017/02/23/–-Fremragende-forskning-er-et-nasjonalt-ansvar-18366434.ece

[56] https://khrono.no/sff-forskningsradet-rottingen/vil-beholde-konkurranse-pa-stotte-til-fremragende-forskning/206598; https://www.aftenposten.no/meninger/debatt/i/Rxykra/kortsiktig-fra-forskningsraadet-om-langsiktighet-i-toppforskningen-nils-chr-stenseth-og-edvard-i-moser; https://khrono.no/moser-fremragende-helgaker/langsiktig-fra-forskningsradet/209148; https://khrono.no/rottingen-sff-unik4/star-mot-hverandre-om-hva-som-er-best-for-a-sikre-topp-forskning/216028;

associated with selecting the very best centres as well as a need to retain dynamism in the scheme and the research system as a whole. The same sentiment was echoed in the LTP, which then goes on to mention that an evaluation of the SFF scheme may provide a relevant platform of knowledge.

2.12 Legal framework, management and board structure of the RCN and the SFF scheme

The Statues for the RCN are laid down by Royal Decree.

The RCN is governed by an Executive Board appointed for a period of four years by the Ministry of Education and Research. The Executive Board consists of 11 external representatives. Two employee representatives are included when administrative issues are discussed. The Executive Board is responsible for overseeing the RCN's activities and providing advice on research policy.

Up until 2018, a second governing level existed in the RCN that consisted of four Research Boards (*divisjonsstyrer*). The Research Board members were appointed by the Executive Board and comprised external representatives. The RCN leadership structure was altered as of 2019, and the Research Board level was removed.

With regard to the SFF scheme, the Executive Board has been responsible for the main principles relating to the scheme, for assuring procedural adherence in appointment of new CoEs and for making formal funding decisions. Lesser issues, including approving criteria for calls, have historically been delegated to the Research Board for the Division of Science. However, when the research board level was removed, all SFF-related decisions are as of 2019 the sole responsibility of the Executive Board.

The RCN is a Norwegian governmental body subject to the Public Administration Act (*Forvaltningsloven*). Because this act has requirements for instance regarding transparency, grounds for decisions and rights to guidance and appeals, careful planning is required in order for the RCN to make room for strategic funding decisions.

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6 Appendix

6.1 Evaluation of the SFF scheme as a funding instrument – Terms of Reference

1. Background

The Norwegian Centres of Excellence (SFF) scheme is a Research Council of Norway funding instrument established in 2002 to promote quality in Norwegian research. The SFF scheme's primary objective is to provide support to Norway's leading research groups so that they can achieve research results that advance the international research front. Centres funded under the SFF scheme are also expected to educate top scientists for the future.

Several subject-specific evaluations conducted in the early 2000s pointed to the considerable fragmentation within the Norwegian research system as the main reason why the level of scientific quality was too low. The SFF scheme was established to concentrate resources around research groups that were already achieving a high international standard. The SFF scheme was intended to promote and reward high quality, help to encourage longer-term scientific perspectives and more autonomy for the country's top researchers, encourage closer cooperation with leading international research groups, enhance recruitment, and provide the necessary professional standing for Norway's best research groups.

The SFF scheme is administered by the Research Council and funded by allocations from the Ministry of Education and Research. Each SFF centre receives funding for maximum 10 years (an initial five-year period with the possibility of a five-year extension). A mid-term evaluation of each centre is conducted about 3.5 to 4 years after it is established and forms the basis for determining whether the individual centre receives funding for the final five-year period.

This funding instrument offers generous, long-term and flexible framework financing to a relatively small number of centres. Thus far the SFF scheme has allocated approximately NOK 3.6 billion, and is contractually obligated to allocate another NOK 2.4 billion, to 44 projects. This funding is distributed over four generations of SFF centres:

- The first SFF generation (SFF-I) comprised 13 centres that started up in 2002/2003 and were terminated in 2012/2013. SFF-I received a total of NOK 1.6 billion, and over their project periods each of these centres received NOK 60–210 million from the Research Council.
- The second generation (SFF-II) comprised eight centres that started up in 2007 and were terminated in 2017. SFF-II received a total of NOK 0.9 billion, and over their project periods each of these centres received NOK 77–120 million from the Research Council.
- The third generation (SFF-III) comprises 13 centres that started up in 2013 and are to be terminated in 2023. SFF-III has been allocated a total of NOK 2.1 billion, and over their project periods each of these centres will have received NOK 105–175 million from the Research Council.
- The fourth generation (SFF-IV) comprises 10 centres that started up in 2017. These centres will undergo mid-term evaluation in 2021 and are to be terminated in 2027. SFF-IV has been allocated a total of NOK 1.5 billion, and over their project periods these centres will each receive NOK 129–167 million from the Research Council.

The next funding announcement (SFF-V) is planned to be issued in autumn 2020 for centres with start-up in 2022.

Selection of the centres to be awarded SFF status and funding is carried out by international referees and is based on an open competitive process. Specific thematic guidelines were only stipulated in the first funding round (SFF-I). These stipulations were removed from the scheme starting with the SFF-II funding announcement. As a result, the various SFF centres extend across the entire range of disciplines and thematic areas.

The SFF scheme has been evaluated once before. The evaluation was carried out by NIFU STEP in 2010 and culminated in the report *Evaluation of Added Value and Financial Aspects – The Norwegian Centre of Excellence Scheme.* The evaluation focused in particular on the centres' added value for their host institutions as well as financial aspects of the SFF scheme, but did not evaluate the centres' respective scientific merit.

The Research Council now wishes to have another evaluation of the SFF scheme. Substantial funds have been allocated under the scheme, and the Ministry of Education and Research requested an evaluation in its allocation letter to the Research Council for 2019.

2. Purpose of the evaluation

The evaluation is to assess the degree to which the scheme has had the expected impact on scientific quality among the research groups granted funding. Furthermore, the Research Council is seeking an evaluation of other impacts of the scheme, such as on the training of young researchers, on research collaboration, and on universities' organisation, priorities and strategies. The Research Council also seeks to document examples of long-term scientific and societal impacts of the centres' research activities. Findings from the evaluation will primarily be used to further develop the scheme.

3. Evaluation questions

The evaluation will mainly focus on exploring the following:

- Has the SFF scheme helped to enhance scientific quality?
- Has the SFF scheme had any impacts on the research system?
- Recommendations for further development of the scheme.

3.1. Has the SFF scheme helped to enhance scientific quality?

In light of the scheme's objective to facilitate groundbreaking research, the Research Council is primarily interested in mapping the extent and quality of the *best* research produced by the centres. The committee is asked to evaluate the overall impact of the SFF scheme on scientific quality. The evaluation is not meant to be an assessment of each centre's scientific merit.

The following topics should be highlighted:

- To what extent do the centres produce groundbreaking research (compared to e.g. Norwegian researchers in general or other relevant comparisons)?
- To what extent are the researchers at SFF centres internationally recognised and competitive (e.g. in terms of applications for grants and positions) (compared to e.g. Norwegian researchers in general or other relevant comparisons)?
- Has the SFF scheme helped to enhance scientific quality, and if so, how?

3.2. Has the SFF scheme had any impacts on the research system?

- What impact has the scheme had on researcher training and recruitment?
- What impact has the scheme had on scientific collaboration (locally, nationally and internationally)?
- What impact has the scheme had on the host institutions?
- Has the SFF scheme had impacts on society outside academia?
- Has the scheme had any negative impacts on the research system, and if so, how?

3.3. Recommendations for further development of the scheme

4. Organisation and procedure

The evaluation is to be conducted by an international scientific committee. With the assistance of a secretary, the committee is to draw up a consolidated evaluation report.

The committee will base its assessment on written material provided by thte RCN. Among this material will be two sub-reports that the RCN will commission through a tender process. The sub-reports will encompass e.g. bibliometrics, the impact of the SFF scheme on participants' career development (career mapping), and an analysis and assessment of the impacts of the SFF scheme on the research system overall. The committee will be consulted underway regarding the content of the sub-reports. In addition, the Research Council will commission scientific and societal impact case studies on the research activities from selected centres, and the committee will have access to these studies. The Research Council will supply the committee with other material as well, including a description of the SFF scheme, the mid-term evaluations of the SFF-I, SFF-II and SFF-III generations, the previous evaluation of the SFF scheme, annual reports for the SFF scheme, annual reports from the centres and the final reports for the SFF-I and SFF-II centres.

The Research Council will quality-assure the information in the evaluation report with the institutions/centres involved. The Research Council will also maintain a dialogue with the committee underway and may contribute comments and data.

The final evaluation report is to be written in English and must include a summary in Norwegian. The evaluation report and (possibly anonymised) sub-reports will be made publicly available. The deadline for submission of the final report to the Research Council is 1 April 2020.

The committee's tasks

The committee is asked to draw up an overall report based on the findings of the sub-reports and other factual material made available by the Research Council. The report is to contain an overall evaluation of how well the SFF scheme has achieved its objectives, and should in addition provide recommendations to the Research Council regarding ways in which the scheme may be improved.

The committee tasks are to:

- Obtain an overview of the scheme by examining and evaluating the background material.
- Become familiar with and evaluate methods and findings of the sub-reports.

- Write a report that contains:
    - an evaluation of the extent to which the SFF scheme has contributed to greater scientific quality at the centres.
    - an evaluation of the impact of the scheme on the Norwegian research system.
    - recommendations for further developing the scheme.
- The chair of the scientific committee is expected to participate in the formal presentation of the evaluation report when it is submitted.

5. Target groups

The Research Council of Norway
Norwegian government ministries (primarily the Ministry of Education and Research)
The host institutions
The SFF centres themselves
The general public

6. Data sources

- Externally produced sub-reports (to be obtained through a tender process). These may contain e.g.:
    - Bibliometric data and career mapping;
    - Analyses of the scheme's impacts on the research system (based on, among other things, financial data and interviews of centre representatives (centre directors, group leaders, students, board chairs, centre partners), the host institutions (university administrators, faculty administrators, department heads), other research groups (applicants, competitors, colleagues) and individuals involved in the selection of SFF centres and/or mid-term evaluations (committee members, etc.).

- Internally available materials (Research Council administration)
    - The previous SFF evaluation (*Evaluation of Added Value and Financial Aspects – The Norwegian Centre of Excellence Scheme,* 2010);
    - The mid-term evaluations of the SFF-I, SFF-II and SFF-III centres;
    - Annual reports for the SFF scheme (starting in 2006);
    - Annual reports from the centres;
    - The final reports for SFF-I and SFF-II centres;
    - Requirements and guidelines for SFF;
    - Description of the SFF-IV assessment procedures

- Materials the Research Council will prepare internally or in cooperation with the centres:
    - Lists of centre employees (containing name, position and year hired)
    - Impact case studies from selected SFF centres;
    - Description of the SFF scheme
    - Other (e.g. centre's own reports)

6.2 SFF call documents

6.2.1 SFF-I, phase 1

Sentre for fremragende forskning

Søknad om prekvalifisering

Bakgrunn
Norges forskningsråd lyser herved ut en ny ordning med betegnelsen Sentre for fremragende forskning (SFF). Ordningen skal stimulere norske forskningsmiljøer til å etablere sentre viet langsiktig, grunnleggende forskning på høyt internasjonalt nivå. Ordningen har som mål å heve kvaliteten på norsk forskning.

Søknadsprosess
Søknadsprosessen vil foregå i to faser. Det vil først skje en prekvalifisering av søkermiljøene med utgangspunkt i en kortfattet søknad. Basert på en gjennomgang og vurdering av disse søknadene vil et mindre antall av søkerne deretter bli invitert til å utarbeide en endelig og mer omfattende søknad. Den vitenskapelige kvalitet vil i begge tilfeller bli vurdert av fremstående internasjonale eksperter. Det er prekvalifiseringen som nå lyses ut. Søknadsbehandlingen vil skje etter en timeplan som innebærer at de første sentre vil bli etablert i år 2002.

Fag- og temaområder
Ordningen åpner både for langsiktig, grunnleggende forskning uten umiddelbar samfunnsrelevans og for forskning med slik relevans. De tematiske satsingene i Forskningsmeldingen (marin forskning, forskning innenfor informasjons- og kommunikasjonsteknologi, medisinsk og helse-faglig forskning og forskning i skjæringsfeltet mellom energi og miljø) er utpekt på grunn av sin samfunns- og næringslivsrelevans og vil bli prioritert, blant annet ved at det ønskes opprettet minst ett senter innenfor hvert av disse områdene.

Kriterier for utvelgelse
Hovedkriteriet for utvelgelse av sentrene skal være vitenskapelig kvalitet på høyt nivå i forhold til internasjonal standard. Dette kravet gjelder både for den planlagte forskningen i senteret og for senterets vitenskapelige nøkkelpersonell. Relevans knyttet til nærings- eller samfunnsmessig nytteverdi vil bli brakt inn som et tilleggskriterium.

Finansiering
Sentrene vil motta midler gjennom en egen ordning som løper i inntil 10 år. Ordningen finansieres av avkastningen fra Fondet for forskning og nyskaping. Vertsinstitusjonene for sentrene forutsettes å bidra med ressurser i form av en egenandel. I tillegg kan sentrene motta annen finansiering. Universiteter og høgskoler, forskningsinstitutter og næringslivet kan stå som vertsinstitusjon for sentrene. Med en total, gjennomsnittlig budsjettramme på 10-20 mill kroner per senter per år, vil det være åpning for 5-10 sentre i starten, og en fordobling etter en opptrappingsperiode på noen år.

Søknader
Som grunnlag for prekvalifiseringen inviteres FoU-miljøene til å sende en kortfattet søknad som trekker opp visjonen for senteret, forskningsplanen, bemanningen, forskerutdanningen, finansieringen med angivelse av egenandel fra vertsinstitusjonen, samt hovedtrekkene i organiseringen av senteret, herunder ledelse og styringsform. Søknaden skal i særlig grad belyse de vitenskapelige bidrag og den nærings- eller samfunnsmessige nytteverdi senteret kan gi. Søknaden

fremmes av vertsinstitusjonens ledelse med en påtegning som bekrefter at institusjonen er villig til å støtte etablering av senteret dersom det blir aktuelt.

Krav til søknaden
Søknaden om prekvalifisering skal være på maksimalt 10 A4-sider pluss maksimalt 10 A4-sider vedlegg i Word format med 12 punkt skrift og enkel linjeavstand som standard. Vedlegg som dokumenterer vitenskapelige kvalifikasjoner for forskere som skal inngå i senteret bør begrense seg til et utdrag av vita og sentrale publikasjoner for det vitenskapelige nøkkelpersonell. For søknader som overskrider de angitte rammer for sidetall på søknad og vedlegg, vil de overskytende sider ikke bli fremlagt for vurdering av de faglige eksperter.

Søknadsfrist
Søknaden om prekvalifisering sendes til Norges forskningsråd, Pb. 2700 St. Hanshaugen, 0131 Oslo. Søknaden skrives på engelsk og merkes "SFF". En original av søknaden i form av en papirversjon må være Forskningsrådet i hende senest 4. april 2001 kl. 1600. Søkerne bes dessuten om å sende søknaden med vedlegg med e-post til: post@forskningsradet.no.

Nærmere opplysninger
En nærmere orientering om SFF-ordningen og søknadsprosessen er lagt ut på Forskningsrådets hjemmeside www.forskningsradet.no. Opplysninger om ordningen kan dessuten fås ved henvendelse til spesialrådgiver Viggo Mohr, Norges forskningsråd (e-post: vm@forskningsradet.no, direkte telefon 22 03 71 20).

Sentre for fremragende forskning

Utfyllende informasjon om søknad om prekvalifisering

Generelt om bakgrunnen
Forskningsmeldingen (St meld nr 39 (1998-99) gir viktige signaler om virkemidler og prioriteringer for å styrke forskningsinnsatsen i Norge. Et av de sentrale punkter i meldingen gjelder behovet for å heve kvaliteten av norsk forskning. Meldingen slår fast at kvalitet i forskningen skal fremmes og belønnes. Økte ressurser til forskning skal i stor grad brukes til kvalitetsfremmende tiltak både i bredden og internasjonal toppklasse. Det er i denne forbindelse ønskelig å etablere sentre for fremragende forskning (SFF).

Stortinget sluttet seg i hovedtrekkene til de signaler meldingen gir. Forskningsrådet har med utgangspunkt i meldingen og Stortingets behandling utredet en norsk ordning med sentre for fremragende forskning. Utredningen ble vedtatt av Hovedstyret i Forskningsrådet 5. juni 2000 og oversendt til Kirke-, utdannings- og forskningsdepartementet 30. juni 2000. Forskningsrådets SFF-utredning kan hentes på Forskningsrådets hjemmeside www.forskningsradet.no eller kan fås i trykt utgave ved henvendelse til Forskningsrådet.

I forslaget til statsbudsjett for 2001 følger Regjeringen opp signalene i Forskningsmeldingen og slår fast at ”Det er eit mål å utvikle fleire forskarar og forskingsmiljø på høgt internasjonalt nivå. For å oppnå dette har det blitt foreslått å innføre ei ordning med senter for framifrå forsking. Forskingsrådet har laga ei utgreiing om dette. Rådet skal i 2001 følje opp denne utgreiinga og administrere ei ordning med senter for framifrå forsking”.

I budsjettproposisjonen heter det videre at "Departementet reknar med at ei ordning med senter for framifrå forsking gradvis kan setjas i verk frå 2001, m.a. gjennom midlar frå Forskingsfondet". "Regjeringa foreslår å utvide kapitalen i Fondet for forsking og nyskaping med 3 mrd. kroner frå 1. januar 2001. Fondskapitalen blir dermed på i alt 7 mrd. kroner". "Avkastninga frå fondet skal særleg nyttast for å setje dei overordna forskningspolitiske prioriteringane ut i livet. Dette inneber at fondet skal støtte langsiktig, grunnleggjande forsking generelt og langsiktig forsking innanfor dei fire tematiske satsingsområda”. ”Desse områda er marin forsking, medisin og helse, informasjons- og kommunikasjonsteknologi (IKT) og forsking i skjeringsfeltet mellom miljø og energi".

Kirke- utdannings- og forskningsdepartementet har i et brev til Forskningsrådet datert 18. januar 2001 gjort nærmere rede for de premisser den norske SFF-ordningen skal bygge på. Brevet er lagt ut til orientering på Forskningsrådets hjemmeside www.forskningsradet.no.

Utlysningen og søknadsprosessen
Norges forskningsråd lyser herved ut ordningen med sentre for fremragende forskning. Søknadsprosessen vil foregå i to faser. Det vil først skje en prekvalifisering med utgangspunkt i en kortfattet søknad. Basert på en gjennomgang og vurdering av disse søknadene, vil et mindre antall av søkerne deretter bli invitert til å utarbeide en endelig og mer omfattende søknad. Den vitenskapelige kvalitet vil i begge tilfeller bli vurdert av fremstående internasjonale eksperter.

Det er prekvalifiseringen som herved lyses ut. Søknad sendes til Norges forskningsråd, Pb. 2700 St. Hanshaugen, 0131 Oslo. En original av søknaden i form av en papirversjon må være Forskningsrådet i hende senest 4. april 2001 kl. 1600. Søkerne bes dessuten om å sende søknaden med vedlegg på e-post til: post@forskningsradet.no. Søknaden skrives på engelsk og merkes ”SFF”.

Søknaden om prekvalifisering skal være på maksimalt 10 A4-sider pluss maksimalt 10 A4-sider vedlegg i Word format med 12 punkt skrift og enkel linjeavstand som standard. Vedlegg som dokumenterer vitenskapelige kvalifikasjoner for forskere som skal inngå i senteret bør begrense seg til et utdrag av vita og sentrale publikasjoner for det vitenskapelige nøkkelpersonell. For søknader som overskrider de angitte rammer for sidetall på søknad og vedlegg, vil de overskytende sider ikke bli fremlagt for vurdering av de faglige eksperter. Forskningsrådets sterke påpeking av søknadsfristen og søknadens lengde har sammenheng med den stramme timeplan som er lagt for søknadsvurderingen som de utenlandske eksperter skal foreta, og det faktum at ekspertene må kunne forholde seg til søknader av overkommelig lengde, spesielt sett i lys av at det kan komme til å dreie seg om et stort antall søknader.

Som grunnlag for prekvalifiseringen blir søkerne bedt om å sende en søknad som trekker opp visjonen, forskningsplanen, bemanningen, forskerutdanningen, finansieringen av senteret med angivelse av egenandel fra vertsinstitusjonen, samt hovedtrekkene i organiseringen av senteret. Søknaden skal i særlig grad belyse de vitenskapelige bidrag og den nærings- eller samfunnsmessige nytteverdi senteret kan gi, samtidig som det er viktig å synliggjøre hvilke sentrale forskere som skal gi senteret dets status som et forskningsmiljø på høyt internasjonalt nivå, herunder hvem som skal lede senteret, i den grad dette er klart på det tidspunkt søknaden om pre-kvalifisering sendes. Søknaden fremmes av vertsinstitusjonens ledelse med en påtegning som bekrefter at institusjonen er villig til å støtte etablering av senteret dersom det blir aktuelt.

Den videre søknadsprosessen
Som det fremgår ovenfor, er søknadsfristen for prekvalifiseringen satt til 4. april 2001. Det er grunn til å regne med at søknadsvurderingen i den første fasen blir avsluttet i september 2001, hvoretter søkerne som går videre vil bli invitert til å sende en utfyllende søknad med en frist på ca. 2 måneder. Søknadsbehandlingen vil skje etter en timeplan som innebærer at de første sentre vil bli etablert i 2002. En orientering om timeplanen vil bli lagt ut på Forskningsrådets hjemmeside www.forskningsradet.no før søknadsfristen for prekvalifiseringen utløper.

Kriterier for søknadsvurderingen
Ved prekvalifiseringen så vel som ved bedømmelsen i den endelige søknadsrunden vil søknadene bli vurdert med utgangspunkt i de kriterier som er skissert i vedlegg 3 i Forskningsrådets SFF-utredning (www.forskningsradet.no). Det kan være spesiell grunn til å trekke frem føl-gende presisering knyttet til utvelgelsen av sentre:

”Hovedkriteriet skal være vitenskapelig kvalitet på høyt nivå i forhold til internasjonal standard. Dette kravet gjelder både for den planlagte forskningen i senteret og for senterets vitenskapelige nøkkelpersonell. Det er dessuten aktuelt å bringe inn relevans knyttet til nærings- eller samfunnsmessig nytteverdi som tilleggskriterium. Vitenskapelig kvalitet vil derfor være et absolutt krav når SFF-kandidater skal pekes ut, men en betydelig samfunnsmessig avkastning av forskningen kan gi sterke føringer ved det endelige valget mellom gode kandidater.”

De utenlandske fageksperter vil kun bli bedt om å vurdere søknadene ut fra vitenskapelig kvalitet, mens områdestyrene og Hovedstyret i Forskningsrådet i tillegg vil bringe inn relevans knyttet til nærings- eller samfunnsmessig nytteverdi som et tilleggskriterium ved den endelige prioritering. Bekreftelse om deltagelse fra eksterne brukermiljøer kan styrke relevansvurderingen av søknaden. En nærmere orientering om kriteriene ved søknadsbehandlingen er lagt ut på Forskningsrådets hjemmeside www.forskningsradet.no.

Spesielle opplysninger som grunnlag for prekvalifiseringen
Utgangspunktet for den utlysning som nå skjer av SFF-ordningen er de premisser og opplegg som er beskrevet i Forskningsrådets SFF-utredning samt føringene fra KUF. Som grunnlag for søknaden om prekvalifisering kan det være særlig grunn til trekke frem følgende momenter fra utredningen, samtidig som det henvises til dokumentet og brevet av 18. januar 2001 fra KUF for en mer utførlig omtale:

- SFF-ordningen bygger på prinsippet om at Forskningsrådet med midler fra Forsknings- og nyskapingsfondet dekker grunnfinansieringen av senteret knyttet til utgifter til personale, drift, nødvendig utstyr og administrative tjenester. Vertsinstitusjonen forutsettes imidlertid å bidra med en egenandel. Det skal imidlertid være fleksibilitet når det gjelder å fastsette egenandelens størrelse og art. Egenandelen kan ha karakter av infrastruktur som stilles til disposisjon, egne budsjettmidler eller andre ressurser som vertsinstitusjonen mobiliserer fra egne eller eksterne kilder.

- Forskningsrådet mener at det bør være betydelig fleksibilitet med hensyn til sentrenes størrelse og totalbudsjett. Dersom man legger til grunn en total, gjennomsnittlig budsjettramme på 10-20 mill kroner per senter per år kan det være mulig å se for seg 5-10 sentre i starten og en fordobling av dette antallet etter en opptrappingsperiode på noen år.

- Finansieringsperioden er maksimalt 10 år. Sentrene vil bli evaluert 31/2 år etter start. Dersom evalueringen faller negativt ut, vil sentrene bli avviklet etter 5 år. Hvis evalueringen er positiv, vil sentrene få en uavkortet funksjonstid på 10 år. Det er spesielt viktig at avviklingen av sentrene skjer etter nøye vurdert plan.

- Vertsinstitusjoner for SFF-ordningen kan være UoH-institusjoner, forskningsinstitutter eller næringslivet.

- Hovedmodellen for sentrene er at de skal bestå av forskergrupper som er samlokalisert så langt dette er mulig, men hvor sentrene er knyttet opp i sterke, faglige nettverk. På gitte premisser kan det også åpnes for virtuelle sentre. Med samlokalisering forstås samarbeid mellom forskergrupper eller enkeltforskere som fortrinnsvis arbeider i samme bygningskompleks innenfor samme campus.

- Et viktig utgangspunkt for ordningen er at sentrene gis en sterk ledelse og at de i forhold til vertsinstitusjonen har en høy grad av selvstendighet faglig og organisatorisk. Når det gjel-der bemanning, minnes det om at SFF-ordningen åpner for finansiering av utenlandske forskere som inviteres til å inngå i sentrene.

Særskilt om organisasjons- og styringsform
I Forskningsrådets SFF-utredning er det spesielt pekt på at det vil bli foretatt en nærmere vurdering av juridiske spørsmål som gjelder organisasjonsmodeller for sentrene samt styringsform. Denne vurderingen vil bli lagt ut på Forskningsrådets hjemmeside www.forskningsradet.no før søknadsfristen for prekvalifiseringen utløper.

Nærmere opplysninger

En nærmere orientering om SFF-ordningen og søknadsprosessen kan fås ved henvendelse til spesialrådgiver Viggo Mohr, Norges forskningsråd (e-post: vm@forskningsradet.no, direkte telefon 22 03 71 20). Materiale om SFF-ordningen vil dessuten bli lagt ut på Forskningsrådets hjemmeside www.forskningsradet.no.

6.2.2 SFF-II, phase 1

31 May 2005

Call for proposals for the Norwegian Centres of Excellence scheme

Information for applicants

1. Background

This document shall, along with two other documents, '*The Norwegian Centres of Excellence. Requirements and Guidelines*' and the original report '*The Norwegian Centres of Excellence. Report on a Norwegian scheme*' provide comprehensive information about Norway's CoE scheme and what is required of applicants.

1.1 Introduction

The CoE scheme was established in response to signals given in the preceding White Paper on Research (Report No. 39 (1998-99) to the Storting). Based on the Storting's deliberations on the research report, and on guidelines handed down by the Ministry of Education, Research and Church Affairs, the Research Council announced the first call for proposals for the CoE scheme in 2000. Following an application process that was divided into two steps, featuring evaluations undertaken by foreign experts and an international scientific committee, in 2002, the Executive Board of the Research Council voted to establish 13 Centres of Excellence which subsequently began their research activities in 2003. *Read more* about the establishment of the original CoEs

1.2 Enlargement of the CoE scheme

In 2003, the Executive Board decided to set aside funding to enlarge the CoE scheme. The sum of MNOK 400 was set aside from the Fund for Research and Innovation to cover the Research Council's contribution for the first five-year period from 2007 to 2011. The Executive Board discussed the new call for proposals at its meeting on 24 February 2005, stipulating that the call for proposals and the assessment of applications were to follow the same main lines as the preceding two-step CoE procedure, i.e. prequalification followed by a final application.

The Executive Board then decided to issue the call for proposals for the new CoEs at the same time as the call for proposals for the Centres for Research-based Innovation (CRI) scheme. To give applicants the best possible information about the objectives of the two schemes and to help ensure that research groups address their applications to the scheme that best accommodates their professional wishes and needs, the Executive Board decided to invite proposals for the two schemes simultaneously.

The enlargement of the CoE scheme was dealt with in the most recent White Paper on Research (Report No. 20 to the Storting (2004-2005). *Commitment to Research)*. In the report, the Government supports enlarging the scheme as from 2007. Pending the Storting's endorsement, it is on the basis of the Norwegian Government's proposal that the Research Council now invites proposals for new CoEs. The application deadline for prequalification will be 13 October 2005.

2. The main substance of the CoE scheme

2.1 Objective and main criteria

The objective of the scheme is to establish time-limited research centres characterised by focused long-term research efforts of a high international standard, and where researcher training is an important aspect. The objective is to enhance the quality of Norwegian research. Scientific quality is the main criterion for the selection of the centres.

2.2 The CoE scheme

The main features of the CoE scheme are outlined in the two documents mentioned above in section, see section 1.2. When the Executive Board dealt with the enlargement of the scheme on 24 February 2005, the Board decided that the following assumptions would be the basis of the work with the new call for proposals and the application processing procedure:

- The call for proposals will once again be based on a two-step process, entailing prequalification followed by a smaller number of selected applicants being invited to draw up and submit final applications. Foreign experts and a committee with broad scientific representation will be involved in both steps. The Executive Board's role in processing the CoE applications will primarily be related to performing quality assurance on the application processing procedure *per se*.
- Universities, university colleges and research institutes can be host institutions for the centres. The host institutions will be the applicants of record. There will be an open call for proposals and no limits will be placed on subject areas or specific relevance criteria.
- Since the competition will be keen, and the design and evaluation of the applications will tie up considerable resources in research communities as well as at the Research Council, the host institutions are specifically requested to help limit the number of applications. Where an institution submits several applications, it is not to indicate any ranking of the applications.
- In contrast to the earlier call for CoE proposals where scientific quality was the main criterion and commercial relevance/utility value for society comprised a supplementary criterion when the applications were evaluated, high scientific quality by international standards alone will be the criterion for the assessment and prioritisation of the applications received in response to the new call for proposals. This criterion applies to the planned research as well as to the centre's key scientific personnel.
- Applicants should point out the added value inherent in organising the research in the form of a centre, and the assessment of a centre's plans will attach more emphasis to the potential for innovative scientific efforts, than to the scholarly production of key scientific personnel earlier in their careers.
- To strengthen gender parity relative to the CoE scheme, applications should include specific thoughts and ambitions related to gender equality perspectives, especially with a view to recruitment.
- To ensure the CoE scheme will be well adapted to smaller research groups, the suggested parameters for the Research Council's annual allocations to individual centres will range from MNOK 8 to 15.

In addition to the guidelines presented above, mention must be made of the following conditions that underlie the establishment of the CoE scheme:

- The CoE scheme is based on the principle that the Research Council will use money from the Fund for Research and Innovation to cover the basic funding of the centres' expenses for personnel, operations, necessary equipment and administrative services. The host institution is expected to provide a co-payment. However, flexibility will be demonstrated when it comes to stipulating the size and nature of the co-payment. Co-payments may be in the form of infrastructure that is made available, proprietary budgetary resources or other resources that the host institution takes from its own or external sources.

- Funding will continue for a maximum of 10 years. The centres will be evaluated 31/2 years after being established. Where an evaluation is negative, a centre will be wound up after five years. Where an evaluation is positive, a centre will be funded for the full 10 years. It is essential that great care be exercised in connection with winding up centres.
- CoE host institutions can be universities, university colleges or research institutes that fulfil the requirements for establishing a CoE.
- The main model for the centres is that they are to consist of research groups that are located in the same place insofar as possible, and where the centres are associated with strong professional networks. Under certain circumstances, virtual centres will also be possible. The term 'located in the same place' is understood to refer to collaboration between research groups or individual researchers that are preferably working in the same building complex.
- One vital assumption for the scheme is that the centres have strong leadership and that they enjoy a high degree of autonomy in relation to the host institution, both professionally and organisationally speaking.

2.3 Special guidelines related to equal opportunity

The Research Board for the Division for Science has amplified the guidelines, stating that applications should include specific thoughts and ambitions related to gender equality perspectives, especially with a view to recruitment. The Research Board decided on 19 May 2005 that the following gender equality measures would be initiated in connection with the forthcoming call for proposals for new CoEs:

- In conjunction with the call for CoE proposals, the Research Council makes a special request that research institutions integrate gender equality considerations into their work when planning and drawing up their new CoE applications. In particular, the institutions are invited to encourage the research communities to nominate women as CoE directors and leading researchers. All factors otherwise being equal in terms of scientific quality, when assessing the applications, the Research Council will give priority to applications with female CoE directors and centres with a strong percentage of women in leading positions.
- The Research Council asks that institutions state in their CoE applications which level of ambition they have for equal opportunity by specifying target figures for the percentage of women among staff researchers and doctoral and post-doctoral fellows at the centres. These signals, along with the results the centres have achieved, will be a factor in the midway evaluation of the centres that are awarded CoE grants and status.
- The Research Council will set aside a certain percentage of its annual CoE budget and earmark it for measures to promote gender equality, e.g. recruiting women to professor II positions. The funding will be distributed based on applications in response to a special call for proposals once the centres have been established. When allocating funding, the Research Council will attach importance to institutions' own efforts in the area of gender equality.

3. Application design

The application process will be conducted in two steps. Pursuant to the Executive Board's instructions, the first step will be prequalification based on an application that has been simplified with a view to some of the information required. Based on a review and evaluation of the applications for prequalification, the Research Council will invite a small number of applicants to draw up final, more comprehensive applications that contain all the requisite information.

Applications are to be submitted in electronic format (*eSøknad*) using the application form entitled 'other institutional support' (*annen institusjonsstøtte*). Reference is made to the application information provided on the application portal called eSøknad. Applications and all attachments are

to be submitted in English. Applications will only be made accessible to individuals who have signed a Pledge of Confidentiality. Where an applicant states that parts of an application must be treated as highly confidential, restrictions can be placed on who will be allowed read the attachments or letters from partners.

The application for prequalification has been simplified with a view to the data required on the following points:

Funding plan: it is acceptable to list any anticipated, but not confirmed subsidies to a centre's budget involving international funding, other public-sector funding or other private funding

- Active partners: requires only information on the institution, the name of the relevant contact person and an address, and not verification of participation
- Grants/positions: with the exception of the CoE director and any other leading researchers, no personal information is required about employees or research fellows.

Information on how to complete the application form and application requirements is available in the help texts.

4. Timeline for the enlargement of the CoE scheme

The following tentative timeline has been set up for the enlargement of the CoE scheme:

Call for proposals	May 2005
Deadline for applications for prequalification	13 October 2005
Deadline for full applications	Spring 2006
Starting date	Spring 2007

5. Application processing procedure

5.1 Assessment criteria

Scientific quality will be the main criterion for assessing the applications, both for prequalification and in the final round of applications. Assessments will be given in the form of a verbal description on a point scale ranging from 1 to 7, where the scale is as follows:

1: Poor
2: Weak
3: Fair
4: Good
5: Very good
6: Excellent
7: Exceptional

The assessment of scientific quality will be based on the following individual criteria, which are listed as elements required for submitting electronic applications (eSøknad):

- Scientific quality
- Project management
- The research group
- Feasibility
- International cooperation

- Communication of results
- The environment, ethics and equal opportunity
- Relevance relative to the call for proposals
- General project quality

Please see Attachment 1 for a detailed description of the individual criteria.

5.2 Procedure for the assessment of applications

The applications for prequalification, like the applications for the final round, will be assessed by at least three foreign experts. Applicants are invited to provide the names of experts considered qualified to make an assessment. Please see the application form.

In both rounds of applications, an interdisciplinary international committee with broad scientific representation will assess the applications across subject areas and disciplines. The expert reviews will be placed before the committee which will, on an independent basis, perform an overall assessment and ranking of the applications.

Along with the expert opinions, the recommendation of the scientific committee will be presented to the Research Board of the Division for Science at the Research Council which will, based on an overall assessment and ranking of the applications, make a recommendation to the Executive Board about which applicants should go further based on prequalification, and about the allocation of CoE grants and status following the final round of applications. The final decision-making authority rests with the Executive Board.

6. Guidelines for completing the main application form (eSøknadsskjema) for prequalification for the CoE scheme

CoE applications are to be submitted in electronic format (*eSøknad*) to the Research Council. Open the electronic application form (*eSøknadsskjemaet*) by clicking on 'Create new application' (or 'Open existing application' if you have already created an application) on the call for proposals website at http://www.forskningsradet.no.

The type of application used for CoEs is called 'Other institutional support'. This type of application is relatively general, so some of the help texts on the application form require further clarification. The following guide is intended to explain and clarify the elements of the application that are not adequately adapted to the CoE scheme in the help texts on the application form. See 'Guidelines' on the application form. The supplementary information that applies specifically to CoE applications will hereafter be specified in italics.

APPLICANT

Institution responsible for the project

CoE applications are to be submitted by the institution that will be the host institution for the Centre of Excellence, and which will bear legal liability for the project. As the person bearing administrative responsibility, specify the name of the person who has the right to sign on behalf of the institution.

Project manager

CoE: Specify the name of the director of the centre, who should be one of the outstanding researchers that helps give the centre its CoE status.

PROJECT INFORMATION

Project title
CoE: Specify the name of the Centre of Excellence

Principal objective and sub-goals
CoE: Describe the primary and secondary objectives as listed in the project description for the centre (see project description).

Project summary
CoE: Give a brief summary of the project description for the centre (see project description).

PLACEMENT
Research Council funding
CoE: Where it is considered relevant, specify whether the CoE application is related to other applications for support from the Research Council or to an activity already funded by the Research Council.

PROJECT TIMETABLE
Timetable
CoE: Specify the main activities and milestones based on the project description. The timetable should focus on activities during the first five-year period in particular.

Project publication plan
CoE: The application for prequalification is to include a brief description of how results from the project will be communicated.

BUDGET
Cost plan
CoE: The cost plan is to be adapted to the technical timetable, as it appears in the schedule and project description, specifying the overall cost of implementing the CoE project, and not merely the expenses the Research Council is being asked to cover. The cost plan shall specify personnel and indirect expenses, the outsourcing of R&D services, equipment and other operating costs. The costs for the second five-year period should be totalled and specified in the column following that for the first five-year period.

Cost codes
CoE: In this box, specify the sector in which the funding will be used.

Funding plan
CoE: The funding plan is to describe how the cost of the CoE project will be covered in the form of own funding (co-payment), international funding, other public funding and other private funding, as well as the amount being applied for from the Research Council of Norway. The figures for the second five-year period should be totalled and specified in the column following that for the first five-year period.

Person for whom a fellowship/position is being sought
CoE: The application for prequalification does not require the names of the research fellows/individuals who will be hired. Nonetheless, this box provides space for thoughts and ambitions associated with the perspective of gender equality, including target figures for the percentage of women among the research fellows and researchers.

ACTIVE PARTNERS
Active partners

CoE: Active partners comprise institutions or enterprises which, according to the project description, will contribute to the CoE project by performing research activities and/or providing funding. Such an amalgamation is designated a CoE consortium and the partners are designated collaborating consortium participants. The application for prequalification is to provide a realistic picture of relevant collaborating consortium participants and their financial contributions, although no binding verification is required from the participants.

ATTACHMENTS

Project description

CoE: The project description is to furnish the basis for an assessment of a proposed project compared with the assessment criteria stipulated for the project (link). The project description should specify the vision for the centre, describe the plans for the research to be performed by the centre, outline the scientific contribution the centre can potentially make, discuss how the centre will be organised and managed, and describe the added value inherent in organising the centre as a CoE. In applications for prequalification, project descriptions must be limited to a maximum of 15 pages, including the list of references, and be in A4 format with 2 cm margins and 12-pitch font. Any pages in excess of that will not as a rule be passed on for consideration.

CV with list of publications

CoE: Applications for prequalification require brief CVs accompanied by relevant lists of publications covering the past five years, collectively a maximum of eight pages, for the project manager and other key researchers who help the centre merit the status of a CoE. No such documentation, transcripts, or recommendations or invitations in connection with grants to study abroad are required for other personnel, including researchers and fellows.

Experts

CoE: In the attachments, applicants have the opportunity to suggest up to three international experts to evaluate the CoE application. The scientific experts must be qualified to assess the application. The experts' names, titles, E-mail addresses and addresses must be specified.

Confirmation from active partner

CoE: No confirmation is required in the application for prequalification

31 May 2005

Call for proposals for the Norwegian Centres of Excellence scheme (CoE)

Attachment 1: Criteria for the evaluation of applications

This information is also located on the Research Council's website in the section on 'Application information'/'Assessment criteria'.

Assessment criterion	Description
Scientific quality	The scientific quality of the research will be a key and decisive criterion in considering applications and, as such, considerable importance will be attached to it. The following factors will be considered: 1. Originality in the form of technical innovation and/or the development of new knowledge; 2. Whether the objectives are specific and verifiable; 3. Whether issues and hypotheses are stated clearly; 4. Strength of theoretical approach, operationalisation and the use of scientific methods and analyses; 5. Documented knowledge about the research front; Where relevant, consideration will be given to professional diversity with a view to multi- and interdisciplinary approaches.
Project management	The Research Council will assess the extent to which the project manager has the knowledge and experience required in this particular field of research, and his/her general qualifications to lead and organise the project. In connection with large-scale, complex projects, the entire project team will be evaluated. Special attention will be devoted to assessing the staff's supervisory qualifications for PhD programmes.
Research groups	The Research Council will determine whether a research group has the requisite expertise, resources and/or infrastructure, and whether it has sufficient contacts at the national and international levels. When considering grant applicants, the Research Council will consider whether there is a good learning environment and whether efforts will be made to facilitate completion of the candidates' programmes. Where working abroad is involved, the foreign research group will be subject to evaluation.
Candidates for grants/fellowships	Where the candidate for a grant/fellowship is mentioned by name (documented), the Research Council will assess the candidate's qualifications for carrying out the research project.

Feasibility	The Research Council will determine whether a project is realistic and feasible based on an expert evaluation and, based on an organisational evaluation, whether it is feasible within the stated budgetary parameters and schedule.
International cooperation	The Research Council will assess the extent to which the project will contribute to the internationalisation of Norwegian research and/or industry in the field in question, and the way in which this is planned. Further, the Research Council will consider whether the choice of international partners will help enhance the project's quality and feasibility.
Communication of results	Plans for communicating results (scientifically and popularly) and user contact will be considered, as will target groups and the intended means of communicating information.
The environment, ethics and equal opportunity	The following criteria are to be integrated into the research funded by the Research Council: 1. Environmental perspectives 2. Ethical aspects 3. Equal opportunity and the gender perspective
Relevance relative to the call for proposals	All projects will be assessed against the guidelines stated in the call for proposals for the activity/programme under which funding is being applied.
General project quality	General project quality is an expression of how well a project complies with the requirements that should be posed for every project, independent of project content and type. Project quality includes project content and the players, and the following will be evaluated: whether the idea and objective are expressed clearly, the overall project idea, the verifiability of the project's objectives, the project plan (with milestones and a description of the results), its strategic platform, players' implementation capacity, and the capability to further exploit the results.

6.2.2.1 Requirements and guidelines for SFF-II

31 May 2005

THE NORWEGIAN CENTRES OF EXCELLENCE

REQUIREMENTS AND GUIDELINES

1 Purpose of this document

1.1 This document specifies the requirements and guidelines underlying the Norwegian Centres of Excellence scheme, hereafter also referred to as 'CoE', 'CoEs', 'the CoE scheme', 'Centre of Excellence', 'Centres of Excellence', 'centre', 'centres' or 'the centres'.

1.2 The document constitutes the point of departure for the agreement to be concluded between the Research Council of Norway and the individual host institutions, cf. the definition in section 2.3, once an application for CoE status and grants has been granted.

1.3 When considering applications for CoE status and grants, and upon signing agreements for the establishment of CoEs, the Research Council of Norway will attach importance to compliance with the requirements and guidelines laid down in this document.

2 General information about the Norwegian Centres of Excellence scheme

2.1 The Centres of Excellence scheme is a national programme under the auspices of the Research Council of Norway. The Research Council of Norway provides the basic source of funding for the scheme, based on funding from the yield on the Fund for Research and Innovation.

2.2 The goal of the scheme is to establish time-limited research centres characterised by focused, long-term research efforts of a high international calibre, and where researcher training is an important aspect. High scientific quality is the main criterion for the selection of the centres.

2.3 A 'Centre of Excellence' is a time-limited research centre affiliated with a research institution that is responsible for the activities, hereafter designated a 'host institution'. CoE host institutions can be universities, university colleges or research institutes that fulfil the requirements for the establishment of a CoE. A host institution will be the official applicant for CoE grants and status, be the project owner of record in any agreement involving the centre, cf. section 1.2, and bear practical, professional and financial responsibility for establishing, operating and winding up the centre. The agreement entitles a host institution to designate its centre as a 'Centres of Excellence' and to use the Research Council's CoE logo.

2.4 A host institution for a centre can cooperate with one or more research institutions, organisations or enterprises in respect of the establishment, operation and funding of the centre. Such participants will be designated 'partners'. Moreover, subcontractors may supply services to the centre. The fact that a host institution collaborates with other players to establish and operate a centre does not change the reality that it is the host institution that is the applicant in respect of the Research Council of Norway as regards CoE grants and status, and that it will be the Research Council of Norway's party to any agreement that might be

signed and bear practical, professional and financial responsibility for establishing, operating and winding up the centre, cf. section 2.3.

3 A CoE consortium

3.1 An amalgamation consisting of a host institution for a CoE and one or more partners, cf. section 2.4, will be designated a 'CoE consortium' and the participants will be designated 'collaborating consortium participants'. Collaborating consortium participants will contribute their own research and/or financial resources in accordance with the funding plan for the centre, cf. section 11.1, with a view to achieving the results outlined in the project description, cf. section 4. To ensure sufficient flexibility, based on more detailed rules, cf. sections 3.2 and 11.5, the CoE scheme will allow the composition of a CoE consortium to be changed over time.

3.2 Host institutions shall ensure that 'consortium agreements' are signed by the participants in a CoE consortium, if any. A consortium agreement will regulate the organisation and implementation of cooperation in a consortium, as well as rights and obligations between collaborating consortium participants. A consortium agreement shall, among other things, contain provisions that specify participants' obligation to contribute resources in accordance with the centre's funding plan, cf. section 11.2, rules about the opportunity to join or withdraw from a CoE consortium, cf. section 11.5, rules about employer's responsibility, cf. section 9.1, and provisions about the right of ownweship, the right of use, licensing, the publication of project results and confidentiality, cf. section 13. Reference is made to the guidelines in the 'Template for consortium agreements between the participants in CoE and CRI consortia'.

3.3 A host institution is responsible for ensuring that the consortium agreement complies with the principles in this document and the Research Council of Norway's General Terms of Contract, and is required to include a provision to this effect in the consortium agreement. Awareness on the part of the Research Council of Norway of a consortium agreement does not imply approval of any deviations from the principles in this document or from the Research Council's General Terms of Contract. Consortium agreements shall be submitted to the Research Council of Norway for information purposes and attached to any agreement signed between the Research Council and the host institution regarding the establishment and operation of a CoE, cf. section 1.2.

4 Project description, etc.

The objective underlying the establishment of a CoE is to perform the research described in the project description pursuant to the agreement between the Research Council of Norway and the host institution, cf. section 1.2. The project description will govern the CoE's activities. The project description shall specify the primary goal, subsidiary goals and schedule for the research described in the CoE application, and shall cover the entire first and potential second five-year period for the centre, cf. section 14.1. Further, there should be a communications plan that describes the CoE's communications measures in accordance with section 8.1 of the Research Council of Norway's General Terms of Contract. The project description and communications plan shall be integral parts of any agreement signed between the Research Council of Norway and the host institution regarding the establishment, operation and winding up of a CoE, cf. section 1.2.

5 Call for applications

The Research Council of Norway will lay down detailed guidelines for calls for applications, the processing of applications and the criteria for the selection of the centres. Applications are to be submitted by the host institution for the individual centre. The Executive Board of the Research Council of Norway, or a party authorised by the Executive Board, shall undertake the final selection of the centres based on recommendations made by the Research Board for the Division for Science, or a party authorised by the Research Board for the Division of Science.

6 Organisation

6.1 The CoE scheme is based on a primary model that entails that the centre be part of the host institution's organisation. A CoE must be organised so that it can realise the targets in the project description in an effective manner, and it must have a form of organisation and governance that allows it to fit into the host institution's organisation and to set up routines that ensure good interaction with any partners in a CoE consortium, cf. section 3.1.

6.2 A CoE must be assured that its interests relative to those of the host institution and any collaborating consortium participants will be attended to in a satisfactory manner, among other things, by the CoE having a strong administration which, within the parameters of the project description, the cost and funding plan, and the staff constraints for the centre, has a high degree of professional and administrative autonomy. The centre should have a good administrative support system.

6.3 Host institutions are required to report on how the requirements and guidelines in this section will be dealt with in the event a centre is accorded CoE status and grants.

7 Location

7.1 The general rule is that a centre is to consist of research groups located in the same place. The term 'located in the same place' is understood to refer to collaboration between research groups or individual researchers that preferably work in the same building complex.

7.2 The CoE scheme also allows the establishment of 'virtual' centres. A virtual centre is based on collaboration between groups that are not located in the same place, but at a greater or smaller physical distance apart, and which have effective communication systems and systems for exchanging personnel between the various parts of the virtual centre. Virtual centres are required to have a common management and a single research plan that complies with the project description.

7.3 Close collaboration with leading research communities at the national and international levels is a prerequisite for centres located in one place as well as 'virtual' centres.

7.4 Host institutions are required to report on how the requirements and guidelines in this section will be dealt with in the event a centre is accorded CoE status and grants.

8 Governance and administration

8.1 A CoE can be governed by the host institution's governing bodies or have its own board. In the event a centre consists of several partners that are organised in a CoE consortium, cf. section 3.1, the centre shall have its own board. Also in cases where staff members from

several faculties at an institution of higher education are part of the centre, a separate board should be set up for the centre. The Board of Directors of a CoE consortium shall consist of representatives of the consortium participants pursuant to the provisions of the consortium agreement, cf. section 3.2.

8.2 The Board's main responsibility is to help ensure that the intentions and plans underlying the agreement for the establishment of a centre are fulfilled, cf. section 1.2, and in particular that the activities described in the project description are brought to fruition on budget and on time. The Board of Directors shall ensure that cooperation proceeds smoothly between the CoE, the host institution and the partners, if any, in a CoE consortium, cf. section 6.1, and in particular help ensure that the host institution, through its representation on the centre's board and through the centre's administration, can influence factors that have a bearing on cooperation between a centre and its host institution.

8.3 A centre may be headed by a CoE director alone, or by a CoE director supported by a management group. The CoE director serves as project manager pursuant to the agreement between the Research Council of Norway and the host institution, cf. section 1.2. The CoE director is to be one of the outstanding researchers who give the centre its status and prestige as a CoE. The CoE director shall have considerable independence in professional contexts and as regards questions involving the recruitment of staff to the centre. The CoE director and members of a management group, if any, will be appointed by the host institution in consultation with the partners, if any, in a CoE consortium.

8.4 There should be clear guidelines for the centres as regards responsibility and authority, including which authority the Board has, which rules apply to board representation and a description of the parameters that apply to a CoE director's authority. The Board's terms of reference must preclude the Board from adopting decisions that encroach on a host institution's sphere of responsibility.

8.5 Host institutions are required to report on how the requirements and guidelines in this section will be dealt with in the event a centre is accorded CoE status and grants.

9 Staffing and responsibility for human resources

9.1 The centres shall be built up around researchers who have already demonstrated a potential for being internationally respected for their professional accomplishments. In evaluating a centre's plans, more emphasis is to be attached to the potential for innovative, scientific efforts than to the scientific production of key scientific personnel earlier in their careers. It should be possible to work at a centre part-time, and staff members should be allowed to perform some of their previous duties at collaborating institutions and enterprises, e.g. teaching, commissioned research and other ordinary activities. The host institution and the partners, if any, in a CoE consortium shall decide among themselves how to handle the employer's responsibility for staff at the centre, cf. section 3.2.

9.2 As an important part of its activities, a centre shall provide researcher training in its field. Recruitment can target master and doctorate students as well as post-doctoral research fellows. In the event a host institution is not accredited to award master and doctorate degrees, it must have a collaboration agreement with institutions that can award such degrees.

9.3 When recruiting, centres are required to take gender equality into account and actively strive to attract outstanding national and foreign researchers. In particular, centres shall facilitate the exchange of staff members among the participants in a consortium, if any, and international partners.

9.4 Host institutions are required to report on how the requirements and guidelines in this section will be dealt with in the event a centre is accorded CoE status and grants.

10 Details about the distribution of responsibility between the Research Council of Norway and the host institution

10.1 The Research Council of Norway will be responsible for providing basic funding for the CoE scheme based on funds derived from the yield on the Fund for Research and Innovation, supervise the selection of the centres, create a uniform system of agreements for the centres, follow up the centres on an ongoing basis in accordance with Research Council practice, perform evaluations and take decisions on whether or not to prolong an agreement period or wind up a centre.

10.2 A host institution is party to the agreement with the Research Council of Norway and bears practical, professional and financial responsibility for the establishment and operation of the centre as well as the responsibility for winding up the centre in accordance with the agreement between the Research Council and the host institution, cf. sections 1.2 and 2.3. The host institution will usually be largest supplier of academic staff to the centres, and is expected to provide administrative support, appropriate premises and other infrastructure for the centre.

11 Funding

11.1 In its application for grants and status as a CoE, a host institution shall, in addition to a project description, cf. section 4, submit a cost and funding plan for the centre's first five-year period and potential subsequent five-year period, cf. section 14.1. If the application is granted, these plans will form the foundation for the agreement signed between the Research Council and the host institution on the establishment, operation and winding up of the centre, cf. section 1.2, and be considered part of this agreement.

11.2 The funding plan is to be based on the principle that the Research Council of Norway and the host institution, possibly in conjunction with a CoE consortium consisting of a host institution and partners, will jointly contribute the resources required for the centre's research, cf. section 3.1. Based on the capacity of the host institution and any collaborating consortium participants to contribute resources of their own, when selecting the centres, the Research Council will attach importance to participants' co-payments. For CoE consortia, final applications for CoE grants and status are to be accompanied by declarations of intent on the part of the upcoming collaborating consortium participants regarding their participation in the funding of the centres during the first five-year period.

11.3 Co-payments can consist of funding, human resources at the disposal of the centre and/or essential infrastructure. The Research Council of Norway requires that the host institution and any collaborating consortium participants cover costs associated with premises, electricity, heat and other infrastructure for the centre, and that a reasonable amount of scientific equipment be provided. The Research Council will accept that research funding that

helps promote the centre's activities, e.g. EU funding, project or strategic grants from the Research Council or other sources, be counted as co-payment.

11.4 Upon signing an agreement with a host institution, the Research Council of Norway will specify its grant to the centre for the first year of operations as well as the date on which the disbursement of funds will be effected. At the same time, the Research Council of Norway will make a pledge for each year of the first five-year term, cf. section 14.1. The Research Council requires that the aggregate budgetary parameters for the first five-year period be broken down by individual years so that the centre's activities can achieve the desired profile in accordance with the research plans specified in the project description. The Research Council reserves the right to adjust the annual pledges based on a centre's progress report, cf. section 12.3, or any adjustments in a centre's funding plan and project description as a result of changes of direction in the research or changes in the funding base. Pledges for a possible final five-year term will be made subsequent to any decision to prolong the centre's period of operation, cf. section 14.1. Allocations from the Research Council of Norway may be transferred from one year to the next.

11.5 Based on more detailed rules laid down in the consortium agreement, the CoE scheme makes it possible for a CoE consortium to be changed over time with a view to its composition and number of participants, cf. section 3.1. Withdrawal from a consortium requires at least six months' notice. In the event collaborating consortium participants withdraw from a consortium, implying a significant reduction in funding and the loss of essential competence, the CoE's Board must ensure the necessary resources are made available to fulfil the objectives stated in the project description. In the event the changes in the consortium mean that key conditions for the establishment of the CoE are no longer met, or have been altered significantly, the Research Council is entitled to cancel the agreement with the host institution, cf. section 14.3.

12 Professional and administrative follow up

12.1 Host institutions shall, by 1 March each year, submit to the Research Council of Norway detailed information on professional, financial and administrative factors to furnish the basis for the Research Council's annual report to the ministries on the preceding year.

12.2 Further, by 1 April each year, host institutions are required to submit to the Research Council of Norway an annual report on the CoEs for their centres for the preceding year, including progress reports, financial statements, notes and an auditor's report from the host institution's auditor. The requirement regarding an auditor's report does not apply to centres audited by the Office of the Auditor General.

12.3 Host institutions shall, by 1 October each year, submit progress reports pursuant to the Research Council of Norway's General Terms of Contract.

12.4 The Research Council of Norway shall, in consultation with host institutions and at expedient intervals, organise 'site visits' to centres. Based on the annual progress report, the Research Council will perform a review of the progress made in the preceding year and the plans for the future. Representatives of the host institution and any collaborating consortium participants, the centre's board, centre management and the Research Council of Norway are required to be present at the relevant site visit. The Research Council of Norway can also invite Norwegian or foreign experts to participate in the meeting and comment on the progress and the plans.

12.5 Under the auspices of the Research Council, roughly 3½ years after the centres are established, there will be a midway evaluation of each centre. The evaluation will be based on a uniform scheme involving the Research Council's governing bodies. The purpose of the evaluation is to assess the scientific results the centres have achieved relative to the original project description. Further, the evaluation is to assess the scientific plans that form the basis for continuation of the centre. In addition to this evaluation, the Research Council of Norway will evaluate the administrative conditions at each centre. The Research Council of Norway will draw up terms of reference for the midway evaluation. The terms of reference will generally be based on the same principles and evaluation points as the midway evaluation of the centres established in response to the first call for proposals for the CoE scheme[57].

12.6 The midway evaluation will form the basis for a decision about whether to continue the individual centre for the remainder of the 10-year term, or to wind it up after five years, cf. section 14.1. The Executive Board of the Research Council of Norway, or a party authorised by the Executive Board, shall undertake the final decision regarding the centres based on recommendations made by the Research Board for the Division for Science, or a party authorised by the Research Board for the Division of Science.

13 The right of ownership, the right of use, licensing, the publication of project results, and confidentiality

The Research Council of Norway's General Terms of Contract concerning the right of ownership, the right of use, licensing, the publication of project results, and confidentiality shall apply. Where the centre is organised as a CoE consortium, cf. section 3.1, a consortium agreement shall be entered into *inter alia* to regulate these conditions subject to the parameters established by the General Terms of Contract. The 'Template for Consortium Agreements between Participants in CoE and CRI Consortia' provides recommendations that can be used to regulate the right of ownership, right of use, licensing and the publication of project results.

14 The centres' term of operation - winding up

14.1 Research Council funding will apply for a period of up to 10 years from the starting date. Under the auspices of the Research Council, there will be a midway evaluation of the centre after 3½ years, cf. section 12.5. Where an evaluation has a negative outcome, the centre will be wound up five years after the starting date. If the evaluation is positive, the centre's term of operation will be prolonged to 10 years. From the time of winding up, be it five or 10 years, Research Council funding will cease and the centre will no longer be part of the 'Centres of Excellence' scheme (CoE).

14.2 The Research Council of Norway will draw up criteria for the evaluation and the decisions that will form the basis of the wind-up or prolongation of the centres after five years, cf. section 12.5. Special attention must be devoted to personnel-related factors when winding up a centre. Upon winding up, a host institution must ensure that master and doctorate students have the opportunity to complete and finish their courses of study on schedule.

[57] '*Midway Evaluation of the Centres of Excellence - Terms of Reference'.* Adopted by the Research Board of the Division for Science, 17 November 2004.

14.3 Where research-related, financial, or other reasons entail a situation that materially alters the assumptions underlying the establishment of a centre, or mean that a centre can generally no longer be operated on the basis of the principles described in this document, the Research Council of Norway is entitled to cancel the agreement with the host institution pursuant to the provisions in the Research Council's General Terms of Contract, including the withdrawal of CoE grants and status.

6.2.3 SFF-III, phase 1

Versjon publisert: 14.03.2016

The Centres of Excellence scheme (SFF)

Mål for programmet:
The SFF scheme gives Norway's foremost scientific circles the opportunity to organise their activities in centres that seek to achieve ambitious scientific objectives through collaboration and long-term basic funding.

- The research conducted at the centres must be innovative and have major potential to generate ground-breaking results that advance the international research frontier.
- The centres must work with ambitious ideas and complex problems that require coordinated, long-term research activities within or across disciplines to achieve its objectives.

Projects with funding

At present, these projects have received funding from the SFF-programme. The overview provides access to summaries and other key information on all the projects under the programme. (The overview may contain information in Norwegian.)

Call for proposals for new Centres of Excellence (SFF III) with start-up in 2013. A total of NOK 155 million per year is available under this call. Scientific merit will be the main criterion used in selecting the centres.

Søknadsfrist: 08.06.2011 13:00 CEST

Antatt tilgjengelige midler: The total budget framework for new centres is NOK 155 million per year, but the exact number of SFF centres will not be determined until the selection process has been completed. The allocation from the Research Council to each centre is planned to be roughly NOK 8-20 million per year for up to 10 years (5+5 years). After about 3-1/2 years an evaluation of each centre will be carried out which will form the basis for the decision as to whether funding from the Research Council will be continued for an additional five years following the initial five-year period.

Føringer og viktige forhold for alle søknadstyper i utlysningen:
The Norwegian-language call for proposals is the legally binding version.

A description of the main requirements stipulated for conferral of SFF status may be found in the document "The Centres of Excellence Scheme (SFF) – Requirements and Guidelines" (Research Council of Norway, 28 February 2011). Further information is also available in the document "Information for applicants for the funding announcement for the establishment of Centres of Excellence (SFF III)". All applicants are encouraged to familiarise themselves with these requirements and guidelines.

Financial framework for individual SFF centres

The allocation from the Research Council to each centre is planned to be roughly NOK 8-20 million per year for up to 10 years (5+5 years). The centres will be evaluated 3-1/2 years after start-up. If the evaluation has a negative outcome, the Research Concil will discontinue its funding to the centre funding five years after the start-up date. If the evaluation is positive, the centre's period of operation will be extended to 10 years.

The host institution's contribution to the centre

The SFF scheme is based on the principle that the Research Council will provide funding from the Fund for Research and Innovation to cover the basic funding of the centres' expenses related to personnel, operations, necessary equipment and administrative services. The host institution is expected to contribute its own resources to the centre. However, a flexible approach will be taken when the size and nature of the contribution are stipulated. The host institution's contribution may consist of infrastructure that it places at the disposal of the centre, allocations from its own budget or other resources that the host institution obtains from its own or external sources. Contributions from the centre's partners may not be counted towards the host institution's contribution. The proportion of own financing provided by the host institution will be taken into account in the overall assessment of the application, but a relatively large contribution of own financing will not automatically result in a more favourable assessment of the centre.

Eligible SFF host institutions

SFF host institutions may be universities (including university hospitals), university colleges and independent research institutes that have the resources needed to fulfil the requirements set out for the SFF scheme.

Location

As a general rule, the centres are to consist of research groups which are located at the same site and are affiliated with dynamic scientific networks. Under certain circumstances, virtual centres will also be allowed. The phrase "located at the same site" is understood to mean collaboration between research groups or individual researchers who work in the same building complex.

Research management

It is expected that a strong leadership will be established for the centres under the scheme, and that they will exercise a high degree of autonomy in relation to the host institution, both from a scientific and an organisational perspective.

Annen institusjonsstøtte

Spesielle føringer:

Applications, including all attachments, are to be submitted in English. The project description is not to exceed 15 pages including the list of references. The standard page format is A4, with 2 cm margins and a 12-point font in Times New Roman.

Please note that for SFF applications Project Administrator should be the person in charge of the institution (rector, managing director etc.).

Requirements for SFF applications and attachments are described in the document "Information for applicants for the funding announcement for the establishment of Centres of Excellence (SFF III)". Applications that do not comply with the requirements and guidelines designated for SFF centres will be rejected.

Funding plan: It is acceptable to list any anticipated, but yet unconfirmed contributions to the centre's budget in the form of international funding, other public funding or other private funding.

Partners: Only the names of the institutions, contact persons and addresses are required; confirmation of their participation is not necessary.

Brief CVs, including a list of relevant publications from the past five years, for the centre's director and the other key researchers whose credentials will help to qualify the centre for SFF status must be attached to the application. The CVs must not exceed a total of eight pages. No such documentation, transcripts, recommendations or invitations in connection with grants for research stays abroad are required for other personnel.

Tidligste tillatte prosjektstart: 01.01.2013

Behandlingsprosedyre:
The application assessment process and assessment criteria for the SFF centre scheme are described in the document "Information for applicants for the funding announcement for the establishment of Centres of Excellence (SFF III)". Scientific merit will be the main criterion used to assess the applications. The application process will be conducted in two stages: a prequalification round and a final round. This call for proposals applies to applications for the prequalification round. The applications will be assessed by a minimum of three individual referees, who may cooperate on a virtual panel. Applicants may propose the names of up to three international referees whom they consider to be qualified to assess the application. The referees must be impartial in relation to the application. Applicants must provide the name, title, email address and postal address of each referee. Applicants will be given the opportunity to comment on the referees' assessment(s). Three international expert committees (natural science/technology, bioscience, and humanities/social science) consisting of four to five members will be appointed. The main task of these committees will be to select five to 10 applications which they believe should advance to the final round. The Executive Board of the Research Council is responsible for taking the final decision regarding which applicants will advance to the final round.

Forventet tidspunkt for svar på utfallet av søknadsbehandlingen:
The decision regarding which projects will advance to the final round is planned to be taken in late November/early December 2011. The results will be publicised on the Research Council website.

6.2.3.1 Information for applicants for the funding announcement for the establishment of Centres of Excellence (SFF III)

1 Introduction

This document, together with the call for proposals and the document "The Centres of Excellence Scheme (SFF) – Requirements and Guidelines" (Research Council of Norway, 28 February 2011), provides comprehensive information about the SFF scheme and sets out the requirements to be met by the applicants.

2 Background

Several subject-specific evaluations conducted in the late 1990s commented on the lack of long-term, stable funding for and strategic thinking in Norwegian research. These findings formed an important part of the foundation for efforts to promote increased quality in Norwegian research. The government white paper on research from 1998-1999, *Forskning ved et veiskille* ("Research at a crossroads"), called for the establishment of a Centres of Excellence (SFF) scheme, and the Research Council was asked to compile a report outlining the framework for such a scheme.[58] Following a dialogue with the Ministry of Education, Research and Church Affairs, the first funding announcement for the scheme was issued in 2001 with funding provided by the Fund for Research and Innovation (established in 1999). Thirteen centres were given SFF status at the end of 2002/beginning of 2003. A second funding announcement was issued in 2005, and eight new centres were established in 2007.

The government white paper "Climate for Research" (2008-2009) gives the SFF scheme a positive review and indicates that the scheme will be continued. As a follow-up to the white paper, the Research Council conducted an evaluation of the scheme as a funding instrument in 2010.[59] On the basis of this evaluation and the course indicated in the white paper, the Research Council of Norway decided to issue another funding announcement for the conferral of SFF status in 2011.

3 The SFF scheme

3.1 Objectives and main criteria

The SFF scheme is the Research Council's foremost funding instrument for promoting quality in Norwegian research. Establishing centres with generous, long-term financing gives the institutions an opportunity to restructure their research community and develop new collaborative relationships to enhance their position on the international research front. Important secondary objectives of the scheme are to strengthen researcher recruitment and expand international cooperation.

A high level of scientific merit in relation to international standards is the main criterion used to assess and prioritise the grant proposals. This criterion applies to the planned research activity as well as to the centre's key scientific staff.

The SFF scheme puts special emphasis on a long-term perspective. While ordinary grants are usually awarded for a three-year period, centres awarded SFF status may receive funding for up to 10 years. The "Requirements and Guidelines" document, which describes the SFF scheme, states explicitly that funding for the scheme is limited to a maximum of two consecutive five-year periods. A mid-term

[58] *Sentre for fremragende forskning. Utredning av en norsk ordning* ("Centres of Excellence: A report on a Norwegian scheme"), (Research Council of Norway, 2000).
[59] "Evaluation of Added Value and Financial Aspects", (Research Council of Norway, 2010).

evaluation conducted roughly three and a half years after a centre's start-up serves as the basis for the Research Council's decision regarding whether to continue the individual centre for the remainder of the total ten-year period or to terminate the centre's activities after five years. It has also been stated explicitly (both in the description of the scheme and in numerous dialogue meetings with the centres and the leadership at the institutions) that from the time of termination of activity, be it at five or ten years, funding from the Research Council will cease and the centre will no longer be part of the SFI scheme. The current framework for the scheme is provided in the document "The Centres of Excellence Scheme (SFF) – Requirements and Guidelines" (Research Council of Norway, 28 February 2011).

3.2 Other main features of the scheme

SFF host institutions may be universities (including university hospitals), university colleges and independent research institutes that have the resources needed to fulfil the requirements set out for the SFF scheme. The centres are expected to contribute to the renewal of research and not merely continue the activities of an established centre, although no specific institution will be prevented from submitting a proposal in a new funding round.

Since the competition will be keen, and the design and assessment of the grant applications will tie up considerable resources in the research communities as well as at the Research Council, the host institutions are specifically requested to limit the number of applications submitted. If an institution submits more than one application, it should not rank them in order of priority.

Applicants should point out the value added inherent in organising the research activity in the form of a centre. When assessing a centre's plans, greater importance will be attached to the potential to conduct innovative, scientific activities than to the previous scholarly production of key scientific personnel.

As a general rule, the centres are to consist of research groups which, to the extent possible, are located at the same site and are affiliated with dynamic scientific networks. Under certain circumstances, virtual centres will also be allowed. The phrase "located at the same site" is understood to mean collaboration between research groups or individual researchers who work in the same building complex.

It is expected that a strong leadership will be established for the centres under the scheme, and that they will exercise a high degree of autonomy in relation to the host institution, both from a scientific and an organisational perspective.

The SFF scheme is based on the principle that the Research Council will provide funding from the Fund for Research and Innovation to cover the basic funding of the centres' expenses related to personnel, operations, necessary equipment and administrative services. The host institution is expected to contribute its own funding to the centre. However, a flexible approach will be taken when the size and nature of the contribution are stipulated. The host institution's contribution may consist of infrastructure that it places at the disposal of the centre, allocations from its own budget or other resources that the host institution obtains from its own or external sources.

It is crucial that the planning of how SFF investments will be safeguarded in the long term begins as early as possible. The host institutions are therefore asked to describe in the grant application how they intend to accomplish this. Their explanation will be included in the material considered in the assessment process.

The tentative budget framework for an individual centre's grant application is an average of NOK 8-20 million per year. Applicants must incorporate salary and price increases into their funding plans, as the Research Council will not adjust the framework allocation for inflation during the funding period for the centre.

A funding announcement for the SFF scheme is planned to be issued every five years.

3.3 Special guidelines related to gender equality

To improve the gender balance under the SFF scheme, grant applications must include specific objectives related to gender equality perspectives, especially with a view to recruitment.

Research institutions are asked to give consideration to gender equality issues when planning and preparing their new SFF applications. In particular, the institutions are asked to encourage the research communities to nominate women as centre directors and senior researchers. When assessing grant applications, and assuming that all other factors related to scientific merit are equal, the Research Council will give priority in the assessment process to applications with female centre directors and to centres with a high percentage of women in leadership positions.

The institutions are asked to describe their gender equality objectives in their SFF applications and to provide target figures for the percentage of women among researchers and doctoral and post-doctoral research fellows at the centres. This description, along with the results achieved by the centres, will be a factor in the mid-term evaluation of the centres awarded status and funding as SFF centres.

4 Grant applications

The application process will be conducted in two stages. First, a prequalification round will be held. Thereafter a limited number of applicants will be invited to submit final applications with all the requisite information.

Applications for SFF centre status are to be submitted online via the eSøknad electronic submission system using the application type "Other institutional support". Please refer to the application guidelines and information provided in the eSøknad system. Applications will only be made accessible to individuals who have signed a declaration of confidentiality. Applications must satisfy the following requirements:

- Applications (including all attachments) must be submitted in English.
- The project description is not to exceed 15 pages, including the list of references (see Section 4.2).
- Funding plan: the centre's budget provided in the final application must be based on concrete, realistic assumptions.
- Partners: confirmation of the partners' scientific and financial participation in the centre must be attached to the final application.
- Research fellowships/positions: a list of the centre's staff members with the probable position categories and numbers must be attached to the final application. It is not necessary to provide personal data for staff other than the centre's director and other senior researchers.

4.1 The application form

Attachment 1 to this document provides additional information for completing the application form and requirements for applications for SFF status to supplement the guidelines integrated into the application form in the eSøknad system.

4.2 The project description

The project description is not to exceed 15 pages including the list of references. The standard page format is A4, with 2 cm margins and a 12-point font in Times New Roman. As a general rule, pages in excess of this will not be submitted for assessment.

The project description must include the following points:

Status: National and international state-of-the-art of the relevant technologies and research topics for the centre.

Research methodology: Describe the methodology and theories planned used, and explain why they are suitable for generating relevant knowledge in the field and promoting future value creation. Describe plans for publication in scientific peer-reviewed journals as well as plans for conferences and any patents.

Research tasks: Identify and describe the research questions that will be examined. Define key research tasks and research-related targets and explain their significance.

Researcher training and recruitment: Describe plans for researcher recruitment. If the host institution is a research institute, a university or university college with the right to confer doctoral degrees must be a partner in the centre. Specify the name(s) of the educational institution(s). Specify the number of doctoral degrees planned within which research areas. Specify the planned number of female PhD scholarships.

Value added created by establishment of the centre: Describe the value added generated by establishing an SFF centre in the field in question. Describe the research to be conducted, the research groups that will participate, the researcher training provided and the host institution (and the other partners, if any). Also describe any vision for the centre's role in the national research system (see Attachment 2 "Application assessment criteria").

Organisation: Describe how the cooperation at the centre will be organised and why this structure has been chosen. What is the role of each partner in the implementation of the centre's activities, and what type of knowledge/expertise will the partners contribute? Describe how the centre's activities will be managed and how the involvement of all partners will be ensured. In terms of location, decentralised solutions will be possible. If a decentralised model is chosen, applicants are required to describe interaction at the centre as well as plans for researcher exchange between the host institution and the partners.

International cooperation: Describe plans for international cooperation at the centre. Describe the international research cooperation efforts in which the centre will participate. How will such cooperation benefit the centre? Explain why the centre will be an attractive partner for cooperation with international research players.

Gender equality: Describe how gender equality considerations will be incorporated into the centre's activities as well as plans for increasing the recruitment of women. Provide a target figure for the percentage of female research fellows.

Phasing-out strategy: Describe how the institution intends to safeguard the SFF investment in the long term, including after the cessation of the Research Council's funding of the centre.

Progress plan with milestones: The plan should provide a timeline for and describe the main activities and milestones, including project deliverables associated with the given milestones.

Funding sources: State which funding sources other than the SFF grant from the Research Council will likely be used to finance the centre.

Ethical perspectives: Describe any ethical problems related to the research activity or the utilisation of the results produced by the centre. Please refer to the guidelines on research ethics drawn up by the national committees on research ethics and the Norwegian Act on Ethics and Integrity in Research.

Environmental impact: Describe whether and how the research conducted by the centre or the use of the results will have environmental impacts of significance (positive or negative).

5 Application assessment process

5.1 Assessment criteria

Scientific merit will be the main criterion used to assess the applications, both in the prequalification round and in the final application round. The assessment will be given in the form of a verbal description on a scale ranging from 1 to 7, in which the points correspond to the following result:

1: Poor
2: Weak
3: Fair
4: Good
5: Very good
6: Excellent
7: Exceptional

The overall assessment of scientific merit will be based on the following individual criteria, which are listed in relation to the relevant application type:

- Scientific merit
- The project manager and project group (centre director and steering group)
- Feasibility
- International cooperation
- National cooperation
- Value added generated by establishing the centre
- Dissemination and communication of results

In addition to scientific merit, the following factors will also be taken into account when assessing the grant applications:

- Relevance relative to the call for proposals
- Ethical perspectives
- Environmental impact (if relevant)
- Recruitment of women

- Gender balance in the project
- Internationalisation

Please see Attachment 2 for a detailed description of the individual criteria.

5.2 Procedure for assessing grant applications

Prequalification: Grant applications for both the prequalification and the final application round will be assessed by a virtual panel comprised of at least three international referees who together will prepare a joint statement. Applicants may propose the names of referees whom they consider to be qualified to assess the application (see the application form). The statement will be sent to the applicant, who may choose to comment on it. If comments are made, the referees will have the opportunity to revise their original statement.

Three international expert committees (natural science/technology, bioscience, and humanities/social science) consisting of four to five members will be appointed. The main task of these committees will be to select five to 10 applications which they believe should advance to the final round. The committees will base their decision on the application material, the statement of the referee panel and any comments by the applicant. The Executive Board of the Research Council is responsible for taking the final decision regarding which applicants will advance to the final round.

Final selection: The three international referees on the virtual panel will assess each application. (The virtual panel will preferably consist of the same referees as those used in the prequalification round.) A joint international scientific committee will be established which will be comprised of seven to 10 members chosen from the three expert committees used in the prequalification round. The joint international scientific committee will rank all of the applications that advanced to the final round on the basis of the final application, the statement of the referee panel, interviews with those nominated as centre directors and the committee's own assessment. The prioritised list of applications will be submitted to the Research Council for a final decision on the award of SFF funding and status. The final decision-making authority rests with the Executive Board.

6. Timeline for the enlargement of the SFF scheme

The following timeline has been set up for the enlargement of the SFF scheme:

Call for proposals	1 March 2011
Application deadline for the prequalification round	8 June 2011
Outcome of the prequalification round announced	November 2011
Application deadline for the final round	February 2012
Final decision on conferral of SFF status announced	September 2012
Start-up of the centres	From January 2013

Attachment 1 - Guidelines for completing the application form (in the eSøknad electronic submission system)

SFF applications are to be submitted to the Research Council using the eSøknad electronic submission service. Open the electronic application form by clicking on “Create new application” (or “Open existing application” if you have already created an application) on the call for proposals webpage at http://www.forskningsradet.no.

The application type used to apply for SFF funding and status is called “Other institutional support”. This type of application is relatively general, and some of the help texts on the application form require further explanation. The following guidelines are intended to explain and clarify the elements in the help texts on the application form of the application that are not adequately adapted to the SFF scheme. See the “Guidelines” on the application form.

The help texts that are not addressed below apply as described in the application form. The headings below indicate which item of the application form the explanations are associated with.

APPLICANT

Project Owner

Applications for SFF status must be submitted by the institution that will serve as the host institution for the centre and will be legally accountable for the project.

Project administrator

Enter the name of the individual authorised to represent and assume obligations (sign) on behalf of the institution. Please note that for SFF applications this should be the person in charge of the institution (rector, managing director etc.).

Project manager

Enter the name of the director of the centre, who must be one of the prominent researchers responsible for the centre attaining SFF status. Please refer to the “Requirements and Guidelines” regarding the rules for changing the centre’s director.

PROJECT INFO

Project title

Enter the name of the proposed SFF centre.

Primary and secondary objectives of the project

Specify the primary and secondary objectives as set out in the project description for the centre.

Project summary

Provide a brief summary of the project description.

FUNDING SCHEME

Supplementary info from applicant

Other relevant programmes/activities

In cases when it is deemed relevant, information may be provided in this box when the SFF application is associated with other applications for funding from the Research Council or with activities already receiving funding from the Research Council.

PROGRESS PLAN

Main activities and milestones in the project period
Specify only the main activities and milestones based on the project description. The progress plan must cover the entire 10-year period, but should focus on the activities in the first five years. A more detailed progress plan should be included in the project description.

Dissemination of project results
The application for both the prequalification round and the final round is to include a brief description of how the results from the project will be disseminated.

BUDGET
Cost plan
The cost plan must be correspond to the progress plan for the centre's scientific activities, as listed in the "progress plan" section of the application form and the project description, and must specify the overall cost of implementing the SFF project, not merely the expenses for which funding is being sought from the Research Council. The cost plan must specify payroll and indirect expenses, procurement of R&D services, equipment and other operating costs. The costs for the second five-year period must be totalled and entered in the column to the right of the first five-year period.

Cost codes
This section is used to indicate the sector in which expenses are incurred.

Funding plan
The funding plan provided in the final application round must be based on concrete, realistic assumptions, and must indicate how the SFF centre will be financed. This encompasses the applicant's own financing, international funding, other public funding, other private funding, and funding sought from the Research Council. Contributions from the partners to the project should be specified. The costs for the second five-year period must be totalled and entered in the column to the right of the first five-year period.

Person for whom a fellowship/position is being sought
For both the prequalification round and the final round, it is not necessary to specify the names of the candidates for fellowships. It is sufficient to provide the number of fellowships, types of fellowships and the fellowship period. Reflections on and objectives related to gender equality, including target figures for the percentage of women among the research fellows and researchers, should be provided in the project description or a separate attachment.

PARTNERS
Partners are those institutions or companies which, according to the project description, will contribute to the SFF project by performing R&D activities and/or by providing funding. A group comprised of a host institution and its partners is referred to as an SFF consortium and the partners are referred to as consortium participants. The application for prequalification must provide a realistic overview of the relevant consortium participants and their financial contributions, although binding confirmation from the participants is not required at this stage. For the final application, however, a binding written statement confirming participation of partners is required, and this may be included as a separate attachment to the application.

ATTACHMENTS
Project Description
The project description is to provide the basis for a scientific assessment of a proposed project in relation to the assessment criteria stipulated for the project. The project description must state the

vision for the centre, describe the plans for the research to be conducted by the centre, describe the potential scientific contribution of the centre, explain how the centre will be organised and managed, and describe the value added inherent in organising the activities as an SFF centre. Project descriptions for both the prequalification round and the final round must not exceed 15 pages, including the list of references, using A4 format with 2 cm margins and 12-point font in Times New Roman. (See Section 4.2.)

CV with list of publications
Applications for both the prequalification round and the final round must include brief CVs, including a list of relevant publications from the past five years, for the centre's director and the other key researchers whose credentials will help to qualify the centre for SFF status. The CVs must not exceed a total of eight pages. No such documentation, transcripts, recommendations or invitations in connection with grants for research stays abroad are required for other personnel, including researchers and research fellows.

Expert referees
Applicants may propose the names of individuals qualified to serve as referees in the prequalification round only. Such proposals will not be considered in the final round.

Partners
Confirmation from the partners to the project must be attached to the final application.

Attachment 2: Application assessment criteria

The following criteria will be used as the basis for the assessment of applications in both the prequalification round and the final round.

Assessment criterion	Description
Scientific merit	Scientific merit is a comprehensive criterion that gives an indication of essential, fundamental aspects of the research project. The scientific merit of a project will be assessed in relation to the following points: • Originality in the form of scientific innovation and/or the development of new knowledge. • Whether the research questions, hypotheses and objectives have been clearly and adequately specified. • The strength of the theoretical approach, operationalisation and use of scientific methods. • Documented knowledge about the research front. • The degree to which the scientific basis of the project is realistic. • The scientific scope in terms of a multi- and interdisciplinary approach, when relevant.
Project manager and project group	The qualifications of the project manager and project group will be assessed in relation to the following points: • Project management. • Expertise and experience within the field of research. • Publication record. • Experience with national and international collaboration on projects. • Experience with supervision of students and junior researchers. • The degree to which the project manager and project group are part of a research environment that has the competence and resources needed to ensure the success of the project.
Feasibility	The feasibility of the project will be assessed in relation to the following points: • Budget and resource parameters, including financing. • Plans for project implementation, including milestones and deliverables.
International cooperation	International cooperation will be assessed in relation to the extent and quality of the international cooperation activities set out for the project.
National cooperation	National cooperation will be assessed in relation to the extent to which the project will make use of national research expertise and help to promote national network-building.
Value added generated by establishment of the centre	Value added generated by establishment of the centre will be assessed in relation to how the centre may contribute to: • research activity in the field • the participating research groups

	• researcher training in the field • the host institution and the other partners
Dissemination and communication of results	Dissemination and communication of results will be assessed in relation to the following points: • Plans for scholarly publication, dissemination and other communication activities • Plans for popular science dissemination and communication activities vis-à-vis the general public as well as users of the project results, including planned use of channels and measures. • Plans for ensuring that important users (in industry, community life and public administration) are incorporated into/take part in dissemination activities for the project.
Relevance relative to the call for proposals	The grant application will be assessed in relation to the guidelines and stipulations set out in the call for proposals.
Ethical perspectives	The Research Council emphasises the need for projects to maintain high ethical standards and not conflict in any way with the fundamental principles for ethics in research. More information on ethical perspectives may be found in the guidelines for ethics in research drawn up by the national committees for research ethics and in the Act on Ethics and Integrity in Research.
Environmental impact	The Research Council attaches importance to whether research projects give adequate consideration to any potential impacts (positive or negative) on the natural environment (external environment), when this is relevant. This applies both to the performance of the projects and to the utilisation of the results.
Recruitment of women	The Research Council considers it important for projects to promote increased recruitment of women to higher academic positions and within the MST subject areas (mathematics, science and technology)
Gender balance in the project	The Research Council works actively to enhance the gender balance in the Norwegian research sector. Each project can play a role in this by seeking to ensure gender balance in the composition of the project group.
Internationalisation	In this context, internationalisation refers to the extent to which the project serves to promote the internationalisation of Norwegian research, by such means as: • International networks. • International mobility. • Measures that enhance Norway's attractiveness as a host country for research activities.

6.2.3.2 Requirements and guidelines for SFF-III

Research Council of Norway, 28 February 2011

THE CENTRES OF EXCELLENCE SCHEME (SFF)
REQUIREMENTS AND GUIDELINES

1 Purpose of this document

1.1 This document specifies the requirements and guidelines underlying the Norwegian Centres of Excellence scheme, hereafter also referred to as "SFF", "the SFF scheme", "Centre of Excellence", "Centres of Excellence", "centre", "centres" or "the centres".

1.2 This document forms the basis for the contract to be entered into between the Research Council of Norway and the individual host institutions for the centres, cf. the definition in Section 2.3, once SFF status and funding have been granted.

1.3 When assessing applications for SFF status and funding and when entering into contracts to establish the centres, the Research Council of Norway will attach importance to compliance with the requirements and guidelines laid down in this document.

2 General information about the SFF scheme

2.1 The Centres of Excellence (SFF) scheme is a national scheme under the auspices of the Research Council of Norway. The Research Council of Norway provides the basic funding for the scheme with allocations from the annual yield of the Fund for Research and Innovation.

2.2 The objective of the SFF scheme is to establish time-limited research centres that conduct targeted, focused, long-term research of high international calibre and where researcher training is an integral component. Scientific merit is the main criterion used in the selection of the centres.

2.3 A Centre of Excellence is a time-limited research centre affiliated with a research institution that is responsible for the centre's activities, hereafter known as the "host institution". SFF host institutions may be universities (including university hospitals), university colleges or independent research institutes that have the resources needed to fulfil the requirements set out for the SFF scheme. The host institution must serve as the formal applicant for SFF status and funding, act as the Project Owner in any contract signed with the Research Council of Norway regarding the centre, cf. Section 1.2, and bear the practical, scientific and financial responsibility for the establishment, operation and closing down of the centre. The agreement entitles the host institution to designate the centre as a Centre of Excellence and to use the Research Council's SFF logo.

2.4 The host institution for a centre may cooperate with one or more research institutions, organisations or enterprises on the establishment, operation and financing of the centre. These participants are referred to as "partners". Moreover, the centre may have subcontractors that provide it with services. Even though a host institution cooperates with other players on the establishment and operation of a centre, the fact remains that it is the host institution which serves as the formal applicant vis-à-vis the Research Council of Norway with regard to SFF status and funding, is party to any contract signed with the Research Council of Norway, and bears the practical, scientific and financial responsibility for the establishment, operation and closing down of the centre, cf. Section 2.3.

3 SFF consortium

3.1 A group consisting of the host institution for a centre and one or more partners, cf. Section 2.4, is referred to as a "SFF consortium" and the partners are referred to as "consortium participants". Consortium participants must contribute by performing R&D activities and/or by providing financing in accordance with the funding plan for the centre, cf. Section 11.1, with a view to achieving the results outlined in the project description, cf. Section 4. To ensure sufficient flexibility, the SFF scheme will allow changes in the composition of the partners in a SFF consortium over time in accordance with the rules set out in the provisions of the consortium agreement, cf. Sections 3.2 and 11.5.

3.2 The host institution is responsible for ensuring that a consortium agreement is drawn up between the participants in the SFF consortium. The consortium agreement is to regulate the organisation and implementation of cooperation within the consortium, and stipulate the reciprocal rights and obligations of the participants. The consortium agreement must include, among other things, provisions specifying the participants' obligations to contribute resources in accordance with the centre's funding plan, cf. Section 11.2; rules regarding the opportunity to join and withdraw from the SFF consortium, cf. Section 11.5; rules related to employer's liability, cf. Section 9.1; and provisions on the right of ownership, right of use, licensing, publication of project results and confidentiality, cf. Section 13.

3.3 The host institution is responsible for ensuring that the consortium agreement is in keeping with the principles set forth in this document and the General Terms and Conditions for R&D Projects issued by the Research Council of Norway. A provision establishing this must be included in the consortium agreement. Knowledge on the part of the Research Council of a consortium agreement in no way implies its approval of any deviations from the principles in this document or from the Research Council's General Terms and Conditions for R&D Projects. The consortium agreement must be submitted to the Research Council for informational purposes and is to be attached to any contract on the establishment and operation of the centre entered into between the Research Council and the host institution, cf. Section 1.2.

4 Project description, etc.

The Centre of Excellence is established for the purpose of performing the activities presented in the project description pursuant to the contract between the Research Council of Norway and the host institution, cf. Section 1.2. The project description governs the centre's activities and must specify the primary objective, secondary objectives and progress plan for the research activities described in the SFF application, and must cover the entire first five-year period and the potential subsequent five-year period of the centre's activity, cf. Section 14.1. Further, there must be a dissemination plan that describes the centre's dissemination measures in accordance with Section 8.1 of the Research Council's General Terms and Conditions for R&D Projects. The project description and dissemination plan must be attached to any contract on the establishment, operation and closing down of the centre entered into between the Research Council of Norway and the host institution, cf. Section 1.2.

5 Funding announcement and grant applications

The Research Council of Norway will issue guidelines for funding announcements, application processing and the criteria for application assessment. Applications are to be submitted by the host institution for the individual centre. The Executive Board of the Research Council of Norway, or a party authorised by the Executive Board, will take the final decision regarding selection of the centres.

6 Organisation

6.1 The SFF scheme is based on a model in which the centre is to be a part of the host institution's organisation. The centre must be organised to achieve the objectives specified in the project

description in an effective manner, have a form of organisation and governance that is well adapted to the host institution's organisation, and establish routines that ensure good interaction with partners in the SFF consortium, if any, cf. Section 3.1.

6.2 The interests of the centre relative to those of the host institution and any consortium participants must be adequately safeguarded; among other things, the centre must have strong top-level management with a high degree of scientific and administrative autonomy within the parameters of the project description, the cost and funding plan as well as the centre's staffing framework. The centre is to have a satisfactory administrative support system.

6.3 In the event a centre is awarded SFF status and funding, the host institution must prepare a report describing how the requirements and guidelines in this section are being addressed.

7 Location

7.1 As a general rule, the centre is to consist of research groups located at the same site. The phrase "located at the same site" is understood to refer to collaboration between research groups or individual researchers who work in the same building complex.

7.2 The SFF scheme also allows the establishment of "virtual" centres. A virtual centre is based on collaboration between research groups which are not located at the same site, but are a greater or lesser physical distance apart, and which have effective communication systems and systems for exchanging personnel between the various segments of the virtual centre. Virtual centres are required to have a common administration and a single research plan in keeping with the project description.

7.3 All centres, both those located at the same site and virtual centres, are required to maintain close contacts with leading national and international research groups.

7.4 In the event a centre is awarded SFF status and funding, the host institution must prepare a report describing how the requirements and guidelines in this section are being addressed.

8 Governance and administration

8.1 The centre may be governed by the host institution's governing bodies or have its own board. If the centre involves several partners and is organised as a SFF consortium, cf. Section 3.1, the centre must have its own board. In cases where staff members from several faculties at a single university or university college are affiliated with the centre, the centre should also have its own board. The board of the centre is to consist of representatives of the consortium participants, pursuant to the provisions of the consortium agreement, cf. Section 3.2.

8.2 The board's main responsibility is to ensure that the intentions and plans underlying the contract for the establishment of the centre are fulfilled, cf. Section 1.2, and in particular that the activities described in the project description are performed within the stipulated budget and time frameworks. The board is to ensure that cooperation proceeds smoothly between the centre, the host institution and the partners in the SFF consortium, if any, cf. Section 6.1, and in particular must ensure that the host institution, through its representation on the centre's board and through the centre's administration, can influence factors of importance to cooperation between the centre and the host institution.

8.3 The centre is to be headed by a director. The centre director is to serve as project manager pursuant to the contract between the Research Council of Norway and the host institution, cf. Section 1.2. The centre director must be one of the prominent researchers responsible for the centre

attaining SFF status and the prestige associated with it. The director is to have considerable independence in relation to scientific contexts as well as on questions involving the recruitment of staff to the centre. The director and members of the management group, if any, will be appointed by the host institution in consultation with the other participants in the SFF consortium, if any.

8.4 The host institution is responsible for ensuring that clear guidelines regarding responsibility and authority are established for the centre's activities, including the board's powers of authority, rules for representation on the board and a description of the director's powers of authority.

8.5 In the event a centre is awarded SFF status and funding, the host institution must prepare a report describing how the requirements and guidelines in this section are being addressed.

9 Staffing and responsibility for human resources

9.1 The centre is to be developed around researchers who have already demonstrated the potential for a high level of scientific achievement. When assessing the centre's plans, more importance will be attached to the potential to conduct innovative, scientific activities than to the previous scholarly production of key scientific personnel. It should be possible to work at a centre part-time, and staff members should be allowed to perform some of their previous duties at the collaborating institutions and enterprises, e.g. teaching, commissioned research and other ordinary activities. The host institution and the other participants in the SFF consortium, if any, are to decide among themselves how to handle the employer's responsibility for staff at the centre, cf. Section 3.2.

9.2 An important part of the centre's activities will be to provide researcher training in its field. Recruitment should include master's and doctoral students as well as postdoctoral research fellows. If the host institution is not authorised to confer master's and doctoral degrees itself, it must have a collaboration agreement with institutions that can.

9.3 When recruiting personnel, the centre is required to incorporate gender equality perspectives and actively strive to attract outstanding national and international researchers. In particular, the centre is to facilitate the exchange of staff members between consortium participants, if any, and international partners.

9.4 In the event a centre is awarded SFF status and funding, the host institution must prepare a report describing how the requirements and guidelines in this section are being addressed.

10 Distribution of responsibility between the Research Council of Norway and the host institution

10.1 The Research Council of Norway is responsible for providing basic funding for the SFF scheme, supervising the selection of the centres, drawing up uniform contracts for the centres, following up the centres on an ongoing basis in accordance with Research Council practice, performing evaluations and taking decisions on whether to extend a contract for a second five-year period.

10.2 The host institution is the party to the contract with the Research Council of Norway and bears the practical, scientific and financial responsibility for establishing, implementing and closing down the activities of the centre pursuant to the contract between the Research Council and the host institution, cf. Sections 1.2 and 2.3. The host institution is responsible for drawing up plans to safeguard the SFF investment in the long term, including after the cessation of the Research Council's funding of the centre. The host institution will usually be the largest supplier of scientific staff to the centre, and is expected to provide administrative support, appropriate premises and other infrastructure for the centre.

11 Financing

11.1 In its application for SFF status and funding, the host institution must submit, in addition to a project description, cf. Section 4, a cost and funding plan for the centre's first five-year period and potential subsequent five-year period, cf. Section 14.1. If funding is granted, these plans will form the basis for the contract on the establishment and operation of the centre between the Research Council and the host institution, cf. Section 1.2, and must be attached to that contract.

11.2 The funding plan is to be based on the principle that the Research Council of Norway in conjunction with the host institution, or with a SFF consortium consisting of the host institution and its partners, will jointly provide the resources required to perform the centre's activities, cf. Section 3.1. When selecting the centres, the Research Council will take into account the ability of the host institution and any consortium participants to contribute their own resources to the centre and will attach importance to the type of contribution they can provide. The Research Council requires that letters of intent from the planned SFF consortium participants regarding their participation in the financing of the centre during the first five-year period are attached to the final application for SFF status and funding.

11.3 Contributions may be provided in the form of own financing, staff placed at the disposal of the centre and/or essential infrastructure. The Research Council of Norway requires that the host institution and any consortium participants cover expenses for the premises, electricity, heating and other infrastructure for the centre, and that a reasonable amount of scientific equipment be placed at the disposal of the centre. Research funding that promotes the centre's activities, e.g. EU funding, project or strategic grants from the Research Council or other sources, may be counted toward the required contribution.

11.4 Upon signing the contract with the host institution, the Research Council of Norway will specify its grant to the centre for the first year of operations as well as the date on which the disbursement of funds will be effected. At the same time, the Research Council of Norway will issue a pledge for each year of the first five-year period, cf. Section 14.1. The overall budgetary framework for the first five-year period must be broken down by individual years so that the centre's activities may achieve the desired profile in accordance with the plans set forth in the project description. The Research Council reserves the right to adjust the annual pledges based on the centre's progress report, cf. Section 12.3, and any adjustments in a centre's funding plan and project description as a result of changes in research focus or the funding base. Pledges for a potential final five-year period will be made subsequent to any decision to extend the centre's period of operation, cf. Section 14.1. Allocations from the Research Council of Norway may be transferred from one year to the next.

11.5 The SFF scheme will allow changes in the composition of the partners in a SFF consortium over time in accordance with the rules set out in the provisions of the consortium agreement, cf. Section 3.1. Withdrawal from a consortium requires at least six months' notice. If the withdrawal of a consortium participant leads to a reduction in funding and loss of essential expertise, the centre's board must attempt to secure the resources needed to achieve the objectives stated in the project description. If the changes in the consortium mean that key conditions for the establishment of the centre are no longer met or have been altered significantly, the Research Council is entitled to terminate the contract with the host institution, cf. Section 14.3.

12 Scientific and administrative follow-up

12.1 The host institution must submit a progress report using the eRapport electronic reporting system of the Research Council of Norway by no later than 1 March of each year. The report must

contain detailed information on scientific, financial and administrative factors as input for the Research Council's annual report to the ministries for the previous year.

12.2 The host institution must submit an annual report for the previous year to the Research Council of Norway by no later than 1 April of each year. The report must contain a description of the centre's scientific activities, a profit and loss account with notes and an auditor's report prepared by the host institution's auditor. Centres whose host institutions are audited by the Office of the Auditor General are exempt from submitting an auditor's report.

12.3 In consultation with the host institution, the Research Council of Norway will organise "site visits" of the centre at appropriate intervals. Based on the annual reports, the Research Council will perform a review of the progress made in the preceding year and the plans for the future. Representatives of the host institution and other SFF consortium participants, if any, the centre's board, the centre's management and the Research Council of Norway must be present. The Research Council may also invite Norwegian or international experts to participate in the meeting and comment on the progress and the plans.

12.4 About 3 ½ years after the centres are established, a midterm evaluation of each centre is to be conducted under the auspices of the Research Council of Norway. The evaluation will be conducted using a common process for all the centres and on the basis of a mandate decided by the Research Council's governing bodies. The evaluation is to assess the scientific results achieved by the centres relative to the original project description. Further, the evaluation is to assess the plans for the centres' scientific activities in the potential final five-year period. In addition, the Research Council of Norway will evaluate the administrative framework at each centre. The Research Council will draw up the mandate for the evaluation, which will primarily be based on the same principles and aspects for evaluation as those used in the previous midterm evaluations of the individual centres.

12.5 The midterm evaluation will form the basis for the decision regarding whether to continue the individual centre for the remainder of the total 10-year period or to terminate the centre's SFF funding and status after five years, cf. Section 14.1. The Executive Board of the Research Council of Norway, or a party authorised by the Executive Board, will take the final decision on the matter.

13 Right of ownership, right of use, licensing, publication of project results and confidentiality

The SFF scheme is regulated by the Research Council of Norway's General Terms and Conditions for R&D Projects regarding the right of ownership, right of use, licensing, publication of project results and confidentiality. If the centre is organised as a SFF consortium, cf. Section 3.1, the consortium agreement must contain provisions that govern these areas pursuant to the General Terms and Conditions for R&D Projects.

14 The centres' period of operation – cessation of SFF funding from the Research Council

14.1 Research Council funding for each centre is provided for a period of up to 10 years from the start-up date. A midterm evaluation of each centre will be conducted under the auspices of the Research Council approximately 3 ½ years after start-up, cf. Section 12.5. If the evaluation has a negative outcome, the centre's funding will be discontinued five years after the start-up date. If the evaluation is positive, the centre's period of operation will be extended to 10 years. Once SFF funding from the Research Council has ceased, be it after five or 10 years, the centre will no longer be part of the Centres of Excellence (SFF) scheme.

14.2 The Research Council of Norway will establish criteria for the evaluation and the decisions that will form the basis of the termination or extension of the centres after five years, cf. Section 12.5. The host institution must pay special attention to personnel related factors when closing down a centre. In particular, upon cessation of activity, a host institution must ensure that master's and doctoral students have the opportunity to pursue and complete their study programmes on schedule.

14.3 The host institution must ensure that plans are drawn up to effectively utilise the expertise and value added generated by the research activity under the SFF scheme in the long term.

14.4 Should a situation arise due to research-related, financial or other reasons which materially alters the assumptions underlying the establishment of a centre or means that a centre can generally no longer be operated on the basis of the principles described in this document, the Research Council of Norway is entitled to terminate the contract with the host institution pursuant to the provisions in the Research Council's General Terms and Conditions for R&D Projects, including the withdrawal of funding and SFF status.

6.2.4 SFF-IV, phase 1

The Centres of Excellence scheme (SFF)

1. About the programme

Objectives:

The SFF scheme gives Norway's foremost scientific circles the opportunity to organise their activities in centres that seek to achieve ambitious scientific objectives through collaboration and long-term basic funding.

- The research conducted at the centres must be innovative and have major potential to generate ground-breaking results that advance the international research frontier.
- The centres must work with ambitious ideas and complexproblems that require coordinated, longterm research activities within or across disciplines to achieve its objectives.

This programme/activity normally accepts grant applications from:
Universities, university hospitals, university colleges and research institutes that have an extensive basic research portfolio may serve as host institutions for the SFF centres.

Duration:
Open-ended

Overall budget:
The annual budget framework is approximately NOK350 million divided among the two generations of centres that are operating simultaneously. The Research Council provides funding for about 20 centres within this framework.

2. Announcement
Call for proposals for newCentres of Excellence (SFF) with start-up in 2017. The financial framework for this call is NOK150 million per year. The Research Council anticipates funding nine to 12 newcentres.

Deadline: 25.11.2015 13:00 CET

Messages:
• The call for proposals will become active as of 14 October 2015. The text of the call for proposals and the attachments is now final, however an English translation of Requirements and guidelines is pending.
• An information meeting for applicants was held on 2 June 2015. Additional information is made available on the SFF scheme's webpages (see link - in Norwegian only).
• Preparation of grant proposals requires substantial resources on the part of the applicant institutions. Institutions are therefore encouraged to submit a limited number of well-prepared proposals.

Status: Active

Amount of funding presumed available for this call for proposals:
Funding is available for new SFF centres within a total budget framework of NOK150 million per year. The recommended parameters for the Research Council's funding of each centre is NOK 8–13 million per year. Centres that can document particularly high operating expenses may seek up to an additional NOK 5 million in funding. Funding from the Research Council will cover a five-year period,

with a possible extension of an additional five years depending on the results of the midterm evaluation. No adjustment for inflation will be made.

Guidelines and important considerations relevant to all types of applications in this call for proposals:

Assessment procedures and assessment criteria
Grant proposals will be assessed as described in the document "Assessment procedures SFF-IV". The assessment criteria that will be used in the application review are described in the document "Assessment criteria for SFF-IV"(see link under Attachments).

Funding
As a general rule, an SFF centre will have several different funding sources: the Research Council, the host institution, the collaborating partners, competition-based research commissions, and other funding. The Research Council makes a distinction between *basicfunding* consisting of agreement-regulated income and *supplementary funding* comprising all other income, including income from existing and new competition-based research contracts.

Basic funding
The Research Council's grant awarded to an SFF centre is part of the centre's basic funding. The Research Council does not require the centre's participants to contribute their own resources for basic funding. However, an SFF centre has scientific objectives and a level of complexity that will normally require a substantially higher level of funding than the Research Council's grant. It is therefore recommended that the institution responsible for the SFF centre and/or the centre's partners with collaboration agreements contribute to the basic funding amount. In addition, contributions from other parties, such as foundations and private and public organisations, may be included in the basic funding. The centre's overall basic funding will serve as the basis for the contract with the Research Council.

The basic funding must finance activities that support the centre's objectives. This may include payroll and indirect costs (including costs related to visiting researchers), minor operating costs associated with research infrastructure, and travel and meeting expenses. Basic funding may also be used for the "own funding" of external projects that fall within the centre's scientific scope of activities. Please refer to the Research Council's website for more detailed information about howto enter expenses in the budget in the application form.

The recommended framework for the Research Council's grant for basic funding of each centre is NOK 8–13 million per year. Centres that can justify particularly high operating expenses may seek up to an additional NOK5 million per year. Examples of particularly high expenses include the lease of research infrastructure (Research Infrastructure Resource costs), special costs related to fieldwork, expeditions, etc., and the procurement of especially expensive chemicals/materials for experiments. The Research Council expects that the centres will use national research infrastructures and other existing research infrastructures
whenever possible.

Supplementary funding
The Research Council requires the host institution and any collaborating partners to obtain and include in the centre new competition-based research commissions that support the centre's research objectives. Existing projects may also be included in the supplementary funding. The optimal amount of supplementary funding will vary from centre to centre, and the applicant will be asked to state a realistic financial framework for this funding. Supplementary funding for the centre

will not be part of the contract with the Research Council. However, the extent to which the centre achieves the stated framework for supplementary funding will be monitored through progress reports, mid-term evaluation and final evaluation.

Location
The centre must, as a general rule, consist of research groups co-located at the centre's premises at the host institution. Centres involving collaborating partners must facilitate close interaction between all researchers affiliated with the centre, for instance through extended research stays at the host institution. The physical organisation of the centre is included in the assessment criteria.

Grant application requirements
• The grant application and all attachments are to be submitted in English.
• The "Project timetable" and "Budget" in the electronic application form should cover the first 5-year period. All other items including the project description and attachments cover the entire 10-year period.
• The grant application must be submitted by the highest administrative level at the institution, which must also serve as the project administrator for the application.
• The same person may not serve as the director of more than one centre.
• Centre expenses that are covered by basic funding must be specified in the budget according to the full cost principle. Applicants from the university and university college sector must use the TDI model (common full costing methodology).
• "Track records"must be formulated as described in the document "ERC Work Programme 2015"(see link under Attachments).

Mandatory attachments in phase 1
• The project description must be 6pages in length (see "Project description requirements phase 1"under Attachments). The first page must contain an exact copy of the "Primary and secondary objectives of the project" and "Project summary" from the elctronic application form (total of max. 3000 characters). The project description will predominantly be assessed in relation to the assessment criteria "Research"and "The organisation of the centre".
• CV (two pages) + the ERC "Ten-year track record"(two pages) for the centre director. The CV must among other things emphasise the individual's research management experience. This attachment must not exceed four pages.
• CV (two pages) + the ERC "Ten-year track record"(two pages) or "Early achievements track record (starting/consolidator)"(two pages) for a total of two to sixprincipal investigators. The attachment for each principal investigator must not exceed four pages.
• If the centre director or one of the principal investigators is not employed by a Norwegian institution when the proposal is submitted, but employment is planned either at the host institution or at one of the Norwegian collaborating partners, a letter of intent (maximum one page) must be submitted, where he/she confirms his/her willingness to accept employment by the host institution or one of the collaborating partners if the project is funded. The planned percentage of full-time equivalent (employment/position) must also be included in the letter.
• Funding plan and cost plan for 10 years. "SFF-IV 10-year budget" (see link under Attachments. Note that this form was updated on the 15th of September).
• If funding is sought for particularly high operating expenses, the scientific reason for this must be provided in a separate attachment (see "Template - Description of particularly high operating costs" under Attachments).
• Information relating to the application assessment process must be provided in the template "Form for additional information for application to SFF-IV, phase 1"(see link under Attachments):

    • Suggestion for up to four impartial experts (name, title, email, address) who may be used in phase 2 if the application advances. Applicants who seek funding for interdisciplinary centres are encouraged to propose interdisciplinary experts, or experts in all of the centre's subject

areas. If relevant, applicants may also provide a list of potential experts whom they do not wish to be used due to scientific or personal disagreements.
• The choice of scientific subcommittee to assess the grant proposal in phase 1.
• If the grant proposal is interdisciplinary: Choice of the second scientific subcommittee to assess the grant proposal in phase 1. An additional summary of 2 000 characters may be submitted for use by the second scientific committee, if desired.

All attachments must be submitted in PDF format. Choose attachment type "Project description" for the project description. All other attachments should be submitted under "other items". Please note that each page of Excel documents must be converted to PDF format.

Other attachments than those specified above not be included in the application assement process.

Other attachments
The host institution is responsible for sending in a complete list of their own applications (see "List of applications from host institution" under Attachments). Please send the list by email to Hilde Albech ha@rcn.no no later than November 25.

Except for the above mentioned attachments, no other attachments, such as letters of support etc, shall be submitted. Such documents will not be included in the assessment procedure.

The Norwegian-language call for proposals is the legally binding version.

Grant proposals that do not satisfythe requirements or contain the mandatory attachments will be rejected.

See also
Norwegian Centres of Excellence (SFF)

Other websites
More information about the call on the SFF web site (Norwegian only)

Attachments
Assessment criteria for SFF-IV
Project description requirements phase 1
ERC Track record description
SFF-IV 10 Year budget
Template - Description of particularly high operating costs
Form for additional information for application to SFF-IV, phase 1
Assessment procedures SFF-IV
SFF-IV Scientific Selection Committee
Requirements and guidelines

Other support
General requirements for Other support

Requirements and criteria for this type of application:
The call will be active as of October 14, six weeks prior to the call deadline. From October 14 applications can be created and submitted. Please note that an application can be resubmitted an unlimited number of times up until the call deadline. The last submitted application will be the only one assessed be the Research Council of Norway.
Earliest permitted project start: 01.01.2017

6.2.4.1 Assessment criteria for SFF-IV

Proposals submitted for funding under SFF-IV will be assessed in relation to four main criteria in both phase 1 and phase 2 of the review process:

1) The research
2) The centre director
3) The principal investigators
4) The organisation of the centre

The project description in phase 1 is limited to five pages (+ one page copied from the summary and objectives in the application form), and the assessment must therefore focus on the basic ideas and methods of the planned research and the organisation of the centre. The project description in phase 2 is limited to 15 pages, and the assessment will review the research, methods, work plans and organisation in greater detail.

The four main criteria:

1) The research

- To what extent are the proposed research and objectives ambitious, with the potential to achieve ground breaking results?
- To what extent does the proposed research address important research challenges that will have a high impact on international research themes and research methods?
- To what extent is the outlined scientific approach feasible?

Three additional questions will be assessed in phase 2, based on the full project description:

- To what extent are the objectives beyond the state of the art (e.g. novel concepts and approaches, development of novel methodology or development across disciplines)?
- To what extent is the proposed research methodology appropriate to achieve the goals of the centre?
- To what extent are the proposed timescales and resources necessary and properly justified?
- If the centre applies for extra operating costs (if requested total funding form RCN is more than NOK 13 Million per year), to what extent are the particularly high operating costs necessary and properly justified?

2) The centre director

- To what extent is the track record of the centre director characterised by the ability to propose and conduct ground-breaking research and research that goes beyond the state-of-the art?
- To what extent has the centre director demonstrated sound leadership of research activities, including training and advancement of early career researchers?
- To what extent is the centre director qualified to lead an initiative of this size?

3) The principal investigators

- To what extent are the principal investigators' track records characterised by the ability to propose and conduct ground-breaking research and research that goes beyond the state-of-the art?
- Does at least one of the principal investigators, in addition to the centre leader, have an accomplished track record?
- If some of the principal investigators are early career researchers, to what extent are their track records characterised by the ability to propose and conduct ground-breaking research and

research that go beyond the state-of-the art, appropriate to their research field and career stage?
- If some of the principal investigators do not have an accomplished track record, to what extent do they have expertise of essential importance to the research and a CV documenting high-quality research?

4) The organisation of the centre
- To what extent is the successful accomplishments of the main research objectives dependent on the described research collaboration in the proposed centre?
- To what extent is the described research team and expertise optimal for the proposed research?
- To what extent are the structure, physical organisation and size of the centre optimal for the proposed research?
- To what extent is the research internationally oriented?
- To what extent is the proposed centre supported by the host institution management?

Three additional questions will be assessed in phase 2, based on the full project description:
- To what extent does the centre create an environment that will attract and train research talents beyond what could be attained in the individual research groups?
- To what extent are there good plans for international mobility of researchers, contributions from top international researchers or international networks?
- To what extent do the host department and the institutions involved have or plan to acquire the required scientific and technical expertise and research infrastructures to support the group?

In phase 2, proposals will be assessed in relation to the criteria below in addition to the four main criteria. While these criteria will be weighted less than the main criteria, they must still be adequately met for a proposal to qualify for funding.

- Are the plans for popular science dissemination and involvement of any key users of the research results appropriate?
- If the scientific field is characterised by a gender imbalance, are the plans to support development of research talents of the under-represented gender towards qualification for more senior-level positions appropriate?
- Are the plans for preparing and submitting proposals to Horizon 2020 or other international funding schemes appropriate for this field of research?

Before any contracts are drawn up, projects will be checked to ensure that they maintain high ethical standards and give adequate consideration to any potential impacts (positive or negative) on the natural environment (external environment), when this is relevant.

6.2.4.2 Requirements and guidelines for SFF-IV

Oslo, 25 April 2016

This document describes elements that are to be incorporated into the contracts between the Research Council of Norway and the new Centres of Excellence (SFF) with start-up in 2017. This document replaces "The Centres of Excellence Scheme (SFF) – Requirements and Guidelines", which was an attachment to the contracts for SFF-III.

The Norwegian version of this document is the legally binding document.

A description of the Research Council of Norway's R&D Project Agreement Document/contract for R&D projects where these special items are to be inserted may be found by clicking on the links below:

- http://www.forskningsradet.no/en/Contract_and_reporting/1138882213515
- http://www.forskningsradet.no/prognett-sff/Utlysning_2015_og_FAQ/1254004951008.

Please see example of text in agreement document "Eksempel på tekst i avtaledokument – engelsk" under "Dokumenter".

The text in the grey boxes comprises information, advice and recommendations for applicants under the SFF-IV call for proposals. This text is not to be included in the contracts for SFF-IV.

Project Owner (host institution)

The Project Owner agrees to assist the SFF centre by facilitating co-location of the research groups and providing premises for this purpose. The Project Owner must also provide administrative services to the centre.

The Project Owner is responsible for providing a document stipulating "Guidelines for SFF centres at the host institution". These guidelines are to be drawn up at the institutional level[1] and should apply to all SFF centres at the institution. The purpose of these guidelines is to ensure that the SFF centres are supported at the rector/dean/director level in the host institution.

Contract negotiations meeting

Prior to the finalisation of a contract, a contract negotiations meeting will be held between the Project Owner (via a representative of the host institution's management the centre director, representatives of the management of any collaborating partners, and the Research Council of Norway. Other key individuals may also participate in the meeting.

The document "Guidelines for SFF centres at the host institution" is to be drawn up prior to the meeting.

In addition, a timetable for establishment of the centre must be presented. Premises suitable for colocation are expected to be made available to the centre by the host institution at the earliest possible date and at the latest one year after the entry into force of the contract.

Centres that have applied for up to NOK 5 million in additional funding per year from the Research Council (for particularly high operating expenses) must present a scientific justification

for these costs, a description of the costs and a funding plan for how these costs will be covered (which may include other funding than the SFF grant).

The following points are recommended for inclusion in the "Guidelines for SFF centres at the host institution". Additional items may also be included.

- How will the SFF centre be incorporated into the host institution's organisation (under a faculty or a department, or can this be decided for the individual centre)?
- The host institution's responsibility vis-à-vis the centre. The host faculty's or host institute's responsibility vis-à-vis the centre.
  - Suitable premises for co-location of the centre must be made available.
  - Administrative functions such as office functions, accounting functions, adaptation and regular update of the centre's website, and other centre-specific services must be provided.
- Requirement to enter into internal agreements with any other department or faculties at the host institution that are participating in, but not leading, the centre. Such agreements may be tailored to the individual centre, and may encompass e.g. maintaining the centre's scientific expertise at the collaborating departments during the centre's period of operation, contributions to cover the centre's operating costs or access to research infrastructure.
- Powers of authority of the centre director.
  - Set out the centre director's scientific and organisational autonomy. Within the parameters of the project description, cost plan and funding plan, the director is to have considerable independence in terms of the research and organisation of the centre as well as in questions involving the recruitment of staff to the centre.
- Can the centre director be released from teaching duties during part or the entirety of the centre's period of operation? If so, will the director accrue time for sabbatical leave?
- Processes for employing doctoral and post-doctoral fellows and researchers in temporary or permanent positions at the centre. The SFF centre's employment processes should be as expeditious as possible to avoid losing the best candidates to other countries. Employment-related decisions should be dealt with by the fewest possible boards and committees.
- Mandate, responsibility and powers of authority of the SFF centre board. If the host institution is open to establishment of a centre without a board (in cases where the centre does not have collaborating partners), a description must be provided of how the function of a centre board will be dealt with within the host institution's ordinary system of governance.
- Cooperation between the host institution and the centre on a strategy for continuing the best research and competencies (also interdisciplinary) after termination of the centre.

The items above may also be relevant for inclusion in collaboration agreements between the partners in an SFF centre.

Collaborating partners

The Project Owner may, based on grounds given by the centre director relating to the centre's scientific progress, remove or replace collaborating partners during the centre's period of operation. Any changes in the composition of the partners as outlined in the agreement document will require the prior written approval of the Research Council of Norway.

Governance and administration

Centre director

The centre is to be headed by a director. The centre director is to serve as project manager pursuant to the general terms and conditions of the contract between the Research Council of Norway and the Project Owner (host institution). The centre director is to be employed by the host institution.

The centre director is expected to use a considerable portion of his or her work time to lead the centre during its entire 10-year period of operation.

The Research Council will not approve a change of centre director unless there are very weighty reasons to do so. The Research Council is to be informed prior to the submission of a formal application for a change of director. The proposed new director must have the same scientific qualifications, expertise and experience in research management as the current director. The Research Council will, when needed, obtain a scientific assessment of the qualifications of the new director.

The only exception is in cases where a change of centre director is described in the SFF application and the new centre director has been assessed by experts and the scientific selection committees during the application review process. In such cases the Research Council will automatically approve the change. It is possible to choose a solution in which two centre directors alternate in filling the position during the centre's period of operation so that both are deeply involved in the centre during its lifetime.

Centre board

Centres involving collaborating partners are to have a designated board. Centres that employ personnel from multiple faculties or institutes at a university or university college are also recommended to have a designated board. In cases where a centre is concentrated in a single institute (or in the host institution), the centre may choose to have a designated board or be subject to the Project Owner's ordinary system of governance.

- The board's main task is to enable the centre to function optimally in order to fulfil its objectives to produce outstanding/excellent research results within its defined research areas.
- The board should function as a genuine decision-making body. One way to achieve this is to have a representative of the Project Owner (e.g. the vice-dean of research) serve as board chair, with membership from the other collaborating partners at the dean/director level[2]
- The board is to include at least one representative of each collaborating partner.
- The board is to ensure that the host institution and collaborating partners support decisions made at the centre.
- The board is to ensure that cooperation between the centre, the Project Owner (host institution) and any collaborating partners proceeds smoothly.
- The board is to ensure that the host institution and collaborating partners create a framework that allows the centre to operate optimally.
- The board is to be informed of the centre's strategies and of planned initiatives for obtaining additional funding for projects that support the centre's research objectives.
- The board is to determine whether a newly financed research project supports the centre's research objectives and can thus be reported to the Research Council of Norway as "supplementary funding".

- The board is to approve the centre's accounts and annual report.

Scientific advisory committee

The centre is to have a scientific advisory committee that takes part in discussions of the centre's research strategy and research challenges throughout the centre's entire period of operation. The centre may also seek other types of advice from the committee. It is common to include top international researchers as members of the scientific advisory committee.

The names of and contact information for the members of the scientific advisory committee are to be included in the contract between the Project Owner and the Research Council of Norway. The centre board may change the composition of the committee. The Research Council must be notified of any changes.

Deputy director, researchmanagement group and administrative leader

The centre director is free to choose the type of management that best suits the centre's research objectives. Most centre directors choose to have a deputy director. A centre's research management group may take scientific and strategic decisions and discuss ongoing research. There are many ways to put together a research management team, it may be comprised of, for example, all or selected principal investigators, a group of experienced and early career researchers, an adjunct professors from abroad, etc. The centre must have an administrative leader. Some centres have a single administrative leader with extensive scientific expertise. Some centres have a financial officer, a travel coordinator, a media officer, an organisational psychologist, a strategic planning, project and grant proposal coordinator, and/or an individual responsible for assistance in writing grant proposals for Horizon 2020/ ERA. There are numerous possibilities, and the various administrative leaders will need different support functions depending on what they cannot cover themselves.

Staffing and researcher training

International researcher exchange

The centre is to enable Ph.D. students, postdocs and researchers to conduct research stays with outstanding research groups abroad and for employing leading researchers from abroad in adjunct professor positions or allowing them to conduct shorter or longer research stays at the centre.

Gender balance

In the event of gender imbalance among associate professors/professors in the research field, the centre is to establish measures to develop and qualify research talents of the underrepresented gender for senior positions at the centre and assess on an ongoing basis possibilities for employing top researchers of the underrepresented gender.

Ph.D. students, postdocs and early career researchers

The SFF centres are to contribute to doctoral education, and it is recommended that the centre employs at least as many doctoral fellows and post-doctoral fellows.

One of the aims of the SFF scheme is to train the leading researchers of tomorrow. The centre is to build up a productive research environment with the participating research groups to ensure that Ph.D. students and early career researchers gain a wider range of experience than if they worked in a single research group. Ph.D. students and early career researchers must be given the

opportunity to participate in scientific seminars beyond those connected with their own research project as well as frequent opportunities to participate in informal discussions with colleagues who have a different research focus. The centre is to facilitate the exchange of staff members between the collaborating partners (including researchers).

Temporary researchers
The aim of the centre is excellent research, and the research focus of the centre may take new directions that provides greater opportunities for ground-breaking research during the centre period. We recommend taking this into consideration when determining the length of employment contracts.

Funding

The centre's *basic funding* is to be entered into the funding plan under Article 6 of the R&D Project Agreement Document.
http://www.forskningsradet.no/no/Artikkel/Avtaledokumentet_i_FoUkontrakter/1253984310374.

R&D Project Agreement Document for the initial five-year period
The R&D Project Agreement Document specifies the Research Council's pledges for each year of the centre's initial five-year period of operation. The contract includes the project description setting out the centre's planned research activities for the entire 10-year period of operation as well as an attachment specifying the centre's cost plan and funding plan for this 10 year-period. This attachment specifies both basic funding and estimated supplementary funding for the centre.

If the midterm evaluation concludes that the centre can be continued, the Research Council of Norway will enter into a new contract with the Centre for a second five-year period. In this case, the contract for the second five-year period must include an updated project description and updated cost and funding plans.

In the event of changes to the contract that encompass changes to the funding plan for the initial five-year period of operation, the proportion of basic funding provided by the Research Council for this period after changes may be maximum 50 per cent of the Council's funding for the entire 10-year period of operation.

Supplementary funding comprises all other income, including income from existing and new competition-based research contracts that supports the centre's research objectives. The planned financial framework for supplementary funding for the centre is described in the project description.

Reporting

The Project Owner must submit a progress report for the previous year to the Research Council of Norway by no later than 1 March of each year.

The Project Owner must submit an annual report for the previous year to the Research Council of Norway by no later than 1 April of each year. The report must contain specified information

on scientific results and projects, the centre personnel, financial and administrative factors. There is no template for the annual report, so centres are free to draw one up.

In all scholarly articles the authors must state that the research has been partially funded under the Research Council of Norway's Centres of Excellence scheme. This applies both to research financed by basic funding and research financed by supplementary funding. The centre director is responsible for following this up.

> The following terms and information MUST be included in all publications:
> English: "Research Council of Norway"+ "Centres of Excellence"+ the project number.
>
> Norwegian: "Norges forskningsråd"+"Sentre for fremragende forskning"+prosjektnummeret.
>
> Proposed sentences that may be used:
> English: "This work was partially funded by the Research Council of Norway under its Centres of Excellence scheme, project number yyyyyy."
> Norwegian: "Dette arbeidet er delvis finansiert av Norges Forskningsråd gjennom ordningen Sentre for fremragende forskning, prosjekt nummer yyyyyy."

Site visits

In consultation with the Project Owner, the Research Council of Norway will organise "site visits" of the centre at appropriate intervals. At the site-visits the Centre will present ongoing research and the organization of the Centre. The site-visit is a communication arena between the Centre and the Research Council. The centre's annual reporting will be discussed at the site-visit. Representatives of the Project Owner, any collaborating partners, the centre board, the centre administration and the Research Council of Norway are required to be present. The Research Council may invite national or international experts to participate in the meeting and provide comments on progress and plans.

Midterm evaluation

About three-and-a-half to four years after the centres are established, a midterm evaluation of each centre is to be conducted by the Research Council of Norway. The evaluation will be conducted using a common framework for all the centres. that has been approved by the Research Council's governing bodies.

The Research Council will draw up a mandate for the midterm evaluation. The main features of the mandate will build on the same principles as previous midterm evaluations of SFF centres.

The Research Council will use a panel of specialists in the subject areas covered by the individual centre to assess the scientific aspects of that centre. Generalists will be used to view the centres in relation to one another.

The midterm evaluation will be based on the same assessment criteria employed in the application review process. The main focus will be on the most important scientific (ground breaking) results generated by the centre thus far. Importance will also be attached to the other assessment criteria from the application review process.

The potential of current research activities will be discussed. Any scientific changes to the centre's ongoing research made underway and in the work plan for the final five-year period of operation will also be assessed by the specialists in the midterm evaluation. Organisational and administrative factors will be assessed on the basis of how well they support outstanding research and researcher training at the centre.

The midterm evaluation will also assess how well the centre has achieved the framework for supplementary funding described in the application and whether it has achieved other internally defined performance targets. The internally defined performance targets beyond those encompassed by the assessment criteria are to be described in a separate paragraph in the project description for phase 2: "How to measure centre success after 4/10 years".

On the basis of the midterm evaluation of each centre, the Research Council will determine whether funding for the individual centre should be continued or terminated. The report will be made publicly available.

Final evaluation

The Research Council of Norway may conduct a final evaluation of each centre. This evaluation will focus primarily on the most important results achieved by the centre. The centre will also provide a brief description of plans to continue its best research. The final evaluation will be less comprehensive than the midterm evaluation, but will culminate in a report that will be made publically available.

The final evaluation will also assess the extent to which the centre has achieved the stated framework for supplementary funding.

[1]If it is not appropriate to draw up these guidelines at the institutional level, they may be drawn up at the faculty level, for example. In all cases, the institution's core responsibilities vis-à-vis the centre (e.g. to provide suitable premises) must be supported at top management level.

[2]If this is not expedient, the dean/director in question must grant powers of authority to the individual he or she delegates to the board position.

6.3 Previous and existing SFFs

Table 1. Previous and existing SFFs. Planned future centre directors are shown in parenthesis.

Acronym	Centre name	Host institution	Project manager(s) (in chronological order)	Generation
APC	Aquaculture Protein Centre	Norwegian University of Life Sciences (NMBU)	Trond Storebakken/Margareth Øverland	SFF-I
BCCR	Bjerknes Centre for Climate Research	UNI Research AS	Eystein Jansen	SFF-I
CASTL	Centre for Advanced Study in Theoretical Linguistics	Univ. of Tromsø – The Arctic University of Norway	Curt Rice/Marit Westergaard/Peter Svenonius	SFF-I
CBM	Centre for the Biology of Memory	Norwegian University of Science and Technology (NTNU)	Edvard Ingjald Moser	SFF-I
CESOS	Centre for Ships and Ocean Structures	Norwegian University of Science and Technology (NTNU)	Torgeir Moan	SFF-I
CIPR	Centre for Integrated Petroleum Research	UNI Research AS	Arne Skauge	SFF-I
CMA	Mathematics for Applications	Univ. of Oslo	Ragnar Winther	SFF-I
CMBN	Center of Molecular Biology and Neuroscience	Univ. of Oslo	Ole Petter Ottersens/Tone Tønjum	SFF-I
CMS	Periphery and Centre in Medieval Studies	Univ. of Bergen	Sverre Håkon Bagge/Leidulv Melve	SFF-I
CSCW	Center for the Study of Civil War	Peace Research Institute (PRIO)	Scott Gates	SFF-I
ICG	International Centre for Geohazards	NGI - Norwegian Geotechnical Institute	Farrokh Nadim	SFF-I
PGP	Physics of Geological Processes	Univ. of Oslo	Jens Gottfried Feder/Bjørn Jamtveit	SFF-I

Q2S	Center for Quantifiable Quality of Service in Communication Systems	Norwegian University of Science and Technology (NTNU)	Peder Johannes Emstad/Svein Johan Knapskog	SFF-I
CBC	Center for Biomedical Computing	Simula Research Laboratory AS	Hans-Petter Langtangen/Joakim Sundnes	SFF-II
CCB	Centre for Cancer Biomedicine	Univ. of Oslo	Harald Stenmark	SFF-II
CEES	Centre for Ecological and Evolutionary Synthesis	Univ. of Oslo	Nils Christian Stenseth	SFF-II
CGB	Centre for Geobiology	Univ. of Bergen	Rolf-Birger Pedersen/Ingunn Hindenes Thorseth	SFF-II
CIR	Centre for Immune Regulation	Univ. of Oslo	Ludvig M. Sollid	SFF-II
CSMN	Centre for the Study of Mind in Nature	Univ. of Oslo	Christel Fricke/Olav Gjelsvik	SFF-II
CTCC	Centre for Theoretical and Computational Chemistry	Univ. of Tromsø – The Arctic University of Norway	Kenneth Ruud/Trygve Ulf Helgaker	SFF-II
ESOP	Equality, Social Organization and Performance	Univ. of Oslo	Karl Ove Moene	SFF-II
AMOS	Centre for Autonomous Marine Operations and Systems	Norwegian University of Science and Technology (NTNU)	Asgeir Johan Sørensen	SFF-III
CEMIR	Centre of Molecular Inflammation Research	Norwegian University of Science and Technology (NTNU)	Terje Espevik	SFF-III
CBD	Centre for Biodiversity Dynamics	Norwegian University of Science and Technology (NTNU)	Bernt-Erik Sæther	SFF-III
CNC	Centre for Neural Computation	Norwegian University of Science and Technology (NTNU)	May-Britt Moser	SFF-III
CCBio	Centre for Cancer Biomarkers	Univ. of Bergen	Lars Andreas Akslen	SFF-III

BCSS	Birkeland Center for Space Science	Univ. of Bergen	Nikolai Østgaard	SFF-III
CISMAC	Centre for Intervention Science in Maternal and Child Health	Univ. of Bergen	Halvor Sommerfelt	SFF-III
CERAD	Centre for Environmental Radioactivity	NMBU	Brit Salbu	SFF-III
MultiLing	Center for Multilingualism in Society across the Lifespan	Univ. of Oslo	Elizabeth Lanza	SFF-III
CEED	Centre for Earth Evolution and Dynamics	Univ. of Oslo	Trond Helge Torsvik/Carmen Gaina	SFF-III
NORMENT	Norwegian Centre for Mental Disorders Research	Univ. of Oslo	Ole A. Andreassen	SFF-III
PluriCourts	PluriCourts - Centre for the Study of the Legitimate Roles of the Judiciary in the Global Order	Univ. of Oslo	Geir Ulfstein/Andreas Føllesdal	SFF-III
CAGE	Centre for Arctic Gas Hydrate, Environment and Climate	Univ. of Tromsø – The Arctic University of Norway	Jurgen Mienert/Karin Andreassen	SFF-III
QuSpin	Center for Low Dissipation Quantum Spintronics	Norwegian University of Science and Technology (NTNU)	Arne Brataas	SFF-IV
PoreLab	Porous Media Laboratory	Norwegian University of Science and Technology (NTNU)	Alex Hansen	SFF-IV
SapienCE	Centre for Early Sapiens Behaviour	Univ. of Bergen	Christopher Henshilwood	SFF-IV
FAIR	Centre for Experimental Research on Fairness, Inequality, and Rationality	Norwegian School of Economics and Business Administration (NHH	Bertil Tungodden	SFF-IV
CFH	Centre for Fertility and Health	Norwegian Institute of Public Health	Per Magnus/(Siri Håberg)	SFF-IV

CanCell	Centre for Cancer Cell Reprogramming	Univ. of Oslo	Harald Stenmark	SFF-IV
HTH	Hybrid Technology Hub	Univ. of Oslo	Stefan Krauss	SFF-IV
Hylleraas	Hylleraas Centre for Quantum Molecular Sciences	Univ. of Oslo	Trygve Ulf Helgaker/(Kenneth Ruud)	SFF-IV
RoCS	Rosseland Centre for Solar Physics	Univ. of Oslo	Mats Carlsson	SFF-IV
RITMO	Centre for Interdisciplinary Studies in Rhythm, Time and Motion	Univ. of Oslo	Anne Danielsen/(Alexander Jensenius)	SFF-IV

6.4 Gender balance among proposed and actual SFF centre directors

This table shows all project leaders in the submitted CoE applications. The project leader is normally the centre director, but this overview does not take into account any leadership transfers, whether or not they were planned in the application submitted.

Generation	Phase	Total # applications	Male project leader	Female project leader
SFF-I[1]	Phase 1	129	125	4 (3,1%)
	Phase 2[2]	40	39	1 (2,5%)
	Funded	13	13	0 (0%)
SFF-II[1]	Phase 1	98	84	14 (14,3%)
	Phase 2	26	23	3 (11,5%)
	Funded	8	7	1 (12,5%)
SFF-III[3]	Phase 1	139	106	33 (23,7%)
	Phase 2	29	23	6 (20,7%)
	Funded	13	10	3 (23,1%)
SFF-IV[3]	Phase 1	150	118	32 (21,3%)
	Phase 2	34	27	7 (20,6%)
	Funded	10	9	1 (10%)

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