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Impacts of the SFF scheme on the Norwegian research system

Sub-report I to the SFF evaluation panel

Siri Brorstad Borlaug, Liv Langfeldt, Magnus Gulbrandsen, Inge Ramberg

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Published by Nordic Institute for Studies in Innovation, Research and Education
Adresse P.O. Box 2815 Tøyen, N-0608 Oslo. Visiting Address: Økernveien 9, N-0653 Oslo.

Project No. 21067

Customer The Research Council of Norway
Address P.O.Box 564, 1324 Lysaker Visiting Address: Drammensveien 288, 0283 Oslo

Fotomontage NIFU

ISBN 978-82-327-0441-5 (online)

ISSN 1892-2597 (online)



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www.nifu.no

Preface

This report was commissioned by the Research Council of Norway (RCN) to serve as background information for an international scientific committee appointed to evaluate the SFF scheme. The report should be seen in conjunction with the parallel NIFU report providing bibliometric analysis and career mapping for the same evaluation (Sivertsen et al. 2019).

The members of the NIFU project team were Siri Brorstad Borlaug (project leader), Liv Langfeldt, Magnus Gulbrandsen and Inge Ramberg.

We are grateful to the many persons who contributed to this report in response to questionnaires and interviews, and who took the time to share their experiences and insight with us, including SFF participants and directors, researchers in the adjacent environment of the SFFs and representatives of the SFF host institutions.

Oslo, December 2019

Sveinung Skule
Director

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Summary

A key policy instrument for enhancing research excellence in Norway is the Centre of Excellence scheme (SFF – Sentre for fremragende forskning), introduced in 2002 and administered by the Research Council of Norway (RCN).

This report provides information on how this policy instrument has impacted the Norwegian research system. This includes impact on scientific activity and collaboration, researcher training and recruitment, as well as impact on the host organisations and interaction with society. The key data sources are questionnaires to present and former participants in the SFFs and to the (other) academic staff at the departments and research units that hosts the SFFs, interviews with rectors, leaders, deans and administrative personnel at the host institutions, and available documentation in terms of the SFFs' annual and final reports, their midterm evaluations and own impact cases.

Extensive positive impacts are reported from the participants and stakeholders, especially in terms of new important research topics, new collaboration and interdisciplinarity, whereas impact on host organisations in some cases are more mixed. Notably, identifying the impacts of research funding instruments is complicated, and the data sources for this report are not impartial: 'impact' is studied as perceived by the various beneficiaries of the scheme, and the focus is on understanding *how* the SFF scheme has affected the awarded groups, their institutions and their surroundings.

An international scientific committee will perform the evaluation of the scheme. Together with another report from NIFU including bibliometric and careers analysis of the SFF participants (Sivertsen et al. 2019), the mandate of this report, is to provide information to the committee about the impacts of the SFF scheme. As such the reports provide information about the scheme and not the individual centres.

The SFFs enable new important research topics, new collaboration and interdisciplinarity

Contributing to advancing scientific knowledge: The large majority of the SFF participants report that the SFF increased their opportunities to address new

important research topics, and to contribute to advancing scientific knowledge on key international research questions in their field. According to the majority of the PhD fellows, being part of an SFF has positively impacted their opportunities to work on questions perceived as important in the international research community and to discuss their work with senior researchers.

More international and interdisciplinary collaboration: According to the participants, the SFFs in most cases increased their involvement in interdisciplinary collaboration and their opportunities to draw on multiple academic fields in their research. The SFFs have spurred both national and international collaboration. The highest increase in international collaboration is found among the participants in the SFFs within the social sciences and humanities, and the highest increase in national collaboration is found among the participants in the SFFs within science and technology.

Lasting impacts: A large proportion of the former SFF participants build on the research from the SFF in their present research. They also report to have access to the competence/collaborators needed to continue the research lines of the SFF, and a large part also collaborate with the same senior researchers in Norway and abroad as during the SFF. A large majority of the previous PhD fellows who are still active in research report that they build on their PhD work in their present research, and still collaborate with the same senior researchers, but work on different research topics than for their PhD.

Long-term funding and new collaboration are key factors: When explaining how the SFF helped them advancing scientific knowledge on key international research questions in their field, new collaboration come up as the most frequent important factor. When asked what was the most important feature of the SFF funding for realising the research in the SFF, the large majority of the SFF leaders answered that the long-term funding was the most important.

Different success profiles: When dividing the SFFs into groups which score high on different indicator sets, including findings from Sivertsen et al. (2019), different factors contributing to the success appears from the survey replies: The group scoring top on citations, the midterm evaluation as well as increased collaboration with top universities, has to a larger extent (than the other SFFs) enhanced the participant's opportunities to draw on multiple academic fields, participate in interdisciplinary and international research collaboration, contribute to key international research questions and new important research topics, as well as their career opportunities, time for research, and involvement in research dissemination outside academia. The group scoring top on interactions with society, has to a larger extent increased the participants' involvement in research dissemination outside academia, their external funding, national research collaboration and PhD teaching/supervising.

Career impacts for PhD and Postdoc fellows

The participants in the SFFs report that the SFFs enhance their careers. Close to 80% of the former PhD fellows in the SFF agree that the SFF has been important for their career. Still, 33% of them agree (partly or strongly) that their career would have been the same if they had done their PhD work in an environment that was not an SFF. Other SFF participants (than the PhD fellows) also indicates that the SFF has increased their career opportunities, in particular the postdoc fellows. Compared to the general Norwegian figures the SFF staff hold temporary positions relatively long after completing their PhD (Sivertsen et al. 2019). When a large part of SFF participants still indicate important career impacts, this may be on other career tracks than a permanent position dedicated to research on the topics of the SFF.

Mixed impact on the host institutions

Development of support mechanisms and internal instruments: According to the research administrators, deans and rectors, the SFF scheme has contributed to the development of internal systems and mechanisms for supporting applications for large grants and guidelines for how grants should be handled. Predictable calls imply that the work with the applications starts early. The larger institutions offer a broader set of support mechanisms compared to the smaller. Some of the institutions (both large and small) have developed internal instruments to support young talents, as well as to strengthen the capacity of research groups so that they may apply for a large grant like SFF.

Integration of the centres in the organisation structure: Many of the first generation of SFFs were located at the central or faculty level, which generated challenges for interactions and integration with the departments. A general policy seems now to be that in order to integrate the SFFs into the plans and strategies of the host institutions and to ensure a commitment from the host, they are located at the department level.

The host institutions invest considerable resources: Rectors and deans underlined that the SFFs are important to the host institutions. An SFF signalises prestige and high quality and the hosts invest considerable resources – funding, time, infrastructure and office facilities, to ensure the centres' success. The scheme has also contributed to professionalise and institutionalise the relationship between partner organisations – especially the regional health authorities/hospitals and universities and between universities and research institutes.

Host relations and local support vary: The SFF leaders seem generally satisfied with the relationship to the host organisation and the support provided by the host. The large majority indicate a good relationship with head of department and

the faculty leadership, as well as good financial and administrative support from the host organisation. Still, there are some notable differences between fields at this point: a large part of those who do not have good relationships to the head of department or faculty leadership are within the social sciences and humanities, whereas a large part of those who do not have good financial and administrative support from the host organisation, are within the life sciences.

Some negative impact on other research lines: According to the department heads, hosting the SFFs in some cases implies less financial means or recruitment positions for other research in their department. The large majority of the SFF participants and a large share of other scientific staff at the host organisations perceive the SFF's impact on the allocation of resources within their department/unit as positive. Still, a small minority indicate high negative impacts on the resource allocation within the department.

Positive impacts on local research abilities, prestige and recruitment: The large majority of both SFF participants and other staff at the host departments find that the SFF has contributed to the building of strong research topics/research lines within the department/research units. Building one or few strong research lines within a department, may imply less resources for other research. In most cases, this is not perceived as decreasing the plurality of strong research topics/research lines within the department/unit.

Extensive researcher training, less impact on Bachelor and Master teaching: The SFF participants report a substantial increase in their teaching and supervising at PhD level. In most cases, the SFFs seem to have little impact on the participants' teaching on Bachelor and Master level. Still, within the social sciences and humanities close to one third of the participants report some decrease in their teaching at these levels. Moreover, for some SFFs within the social sciences and humanities, a few survey respondents added comments about negative consequences for the link between research and education in their department.

Impact on interactions with society outside academia

SFF participants report some increase in interaction with society: Even if societal impact is not a pronounced aim of the SFF schemes, a substantial part of the SFF participants find that the SFF has increased their interaction with society, in terms of involvement in knowledge transfer activities and/or research dissemination outside academia (about 40% report an increase, and about 40% report no change). Moreover, both SFF participants and other staff at the host departments indicate positive impacts on the departments' interaction with society outside academia. They also report positive impacts on the department's support and goodwill from outside academia.

Modes of interaction vary between fields and centres: A document-based mapping of modes of interactions in the first three SFF generations shows great variation between the centres and the fields. We find distinct field patterns; in the social sciences and humanities dissemination activities is the most common mode of interaction; in life science commercialisation; and in science and technology teaching and dissemination activities. Science and technology SFFs engage in more modes of interaction compared to the two other fields. Notably, in science and technology the majority engage in a range of interactions and few centres are relatively introvert. In the life sciences it is the opposite – some centres engage to a large extent, others relatively little, and in the social science and humanities the differences between the centres are minor.

Different pathways to impact: The societal impact cases reported by the SFFs clearly demonstrate the many differences between the SFFs in terms of fields of science/disciplines, degree of interdisciplinarity, degree of inter-organisational collaboration and degree of basic research and non-academic partners. This means that their pathways to impact vary a lot. Most of the cases describe uptake of research results rather than impact in a wide sense, and most of them tie impact to particularly original research carried out in the SFF or in a project or unit that hosted the SFF or was related to it. It is as such difficult to assess the added value of the SFF for the societal impact.

Challenges and negative impacts on the research system

The large majority of the SFF participants, other survey respondents and interviewed leaders at the host organisations report positive impacts from the SFFs. Still, some challenges and negative impacts are pointed to. These include:

Negative impacts on the working environment. Some staff at the host departments/units who do not participate in the SFF themselves report challenging work environment and conditions. The negativity relates to the perception of the SFF creating A and B teams in the department, a decrease in financial means and recruitment positions and less plurality of research lines. The social sciences and humanities are overrepresented among those who are negative. This goes together with less good relationships between the heads of department and the SFFs in the social sciences and humanities than in the other fields (as reported by the SFF leaders). Notably, the centres are highly attractive and signals prestige for the host institutions and the hosts invest considerable resources in the SFFs. According to a couple of survey comments this may lead to a ‘hands-off’ attitude from the host leadership when it comes to handling conflicts in the centre.

Generating systematic temporality. The scheme has, according to respondents, interviewees and Sivertsen et al. (2019) contributed to increase temporary positions such as postdocs and researchers on time limited contracts in HEIs. The

centres are time limited and there are limited permanent positions in the Norwegian system. Insecure career opportunities may lead to risk aversion, demotivation and stress for temporary employees, according to many participants.

Developing the careers of young talents and female researchers. According to some interviewees and participants in the SFFs, the centres should have the task of being good examples of how to systematically support the career of young talents and female researchers, but this role is not taken by all centres. A challenge, according to the interviewees and participants, is that these efforts are not evaluated properly, and stated ambitions are not always achieved.

Funding for the 'afterlife' of the centres. The host institutions are responsible for the centre and its research activities after the termination of the SFF grant. According to some SFF participants and leaders at the host organisations the research activities are scaled down because of lack of funding. They claim there are fewer opportunities for external funding in some fields compared to others. Hence, the possibilities to build on and continue the research lines of the SFFs vary between fields. Several of the interviewees called for new funding instruments which may ensure that the SFFs do not end up with unused potentials.

A scheme for the large institutions. SFFs are highly attractive, and according to some of the interviewees it suits particular well large institutions with an international and basic research profile. On the system level this may contribute to creating a division between the different research organisations, and some expressed a worry that for instance research institutes may be excluded from the scheme.

1 Introduction

1.1 Background

Norway has, as many other OECD countries the past three decades, introduced Centres of Excellence (CoE) (OECD 2014; Aksnes et al. 2014). In 2002, the SFF scheme was established to promote quality in Norwegian research through supporting leading Norwegian research groups with the potential of contributing to the international research frontier. Flexible and long-term funding is granted for a period of 10 years through highly competitive calls for proposals. Since its inception, four generations of SFF centres have seen the light of day, 44 centres have been awarded SFF status, and about 4300 researchers, postdocs and PhD students have been affiliated with the centre. The centres vary in size, are found in different fields – some highly interdisciplinary – and are hosted by different types of institutions.

The scheme is currently being evaluated, and this report is commissioned by the Research Council of Norway (RCN) and aim to provide the international scientific committee responsible for the evaluation, with information about the working and impacts of the scheme. The terms of reference for the report/commission include the following questions addressing how the SFF scheme enhance scientific quality, as well as its different kinds of impact on the Norwegian research system:

1. Has the SFF scheme helped to enhance scientific quality, and if so, how?
2. Has the SFF scheme had any impacts on the research system?
 - 2.1 What impact has the scheme had on researcher training and recruitment?
 - 2.2 What impact has the scheme had on scientific collaboration (locally, nationally and internationally)?
 - 2.3 What impact has the scheme had on the host institutions?
 - 2.4 Has the SFF scheme had impacts on society outside academia?
 - 2.5 Has the scheme had any negative impacts on the research system, and if so, how?

These topics are addressed in chapters 2 to 7 in this report, and conclusions are summarised in the executive summary (as well as at the end of each chapter). In this chapter, we present background information on the SFF scheme, previous studies and evaluations and the data and methods for this report.

1.1.1 Brief political backdrop

The SFF scheme is a key policy instrument for enhancing the quality of research in Norway. It was set up to support leading research groups to advance the international research front. The idea of establishing the scheme was introduced in the Government white paper on research in 1999 (St.meld. nr.39 1998-99), following a proposal from the Research Council of Norway (RCN). RCN was in charge of preparing the scheme, which was officially launched with the selection of 13 centres in 2002.

Several factors have been important for the development and the further extensions of the scheme. Firstly, the scheme was a concrete response to a general worry about the level of academic quality in Norwegian research. During the 1990s and early 2000s, various evaluations of Norwegian disciplines and funding programmes had emphasised that although Norway had several cutting-edge research groups, there was a general uneven quality in research; a lack of strategic awareness and scientific leadership; unused potential in international publishing; recruitment problems and a lack of long-term and stable research funding (DNVA, 2007). Secondly, a number of other countries had already established similar excellence schemes. A few centres also existed in Norway, all with generally positive outcomes. These international and national forerunners served as models and paved the way for the more comprehensive SFF scheme. Thirdly, the establishment of the Fund for research and innovation from 1999 provided a new long-term funding source specifically designed for financing new research initiatives across sectors, disciplines and traditional “turf wars” between ministries as well as within RCN.

1.1.2 Studies of CoEs and CoE schemes

Centres of excellence have in the two-three last decades become a common instrument in a number of OECD-countries (Hellström 2018; Cremonini et al. 2017; OECD 2014; Aksnes et al. 2014; Bloch and Sørensen 2014; Orr et al. 2011). Key components of the CoE schemes are the allocation of competitive grants and concentration of long-term and flexible research funding to the best research groups. Contrary to competitive grants which target certain strategic topics, the CoE schemes are often open to all scientific fields and topics, and the centres are

generated through bottom-up initiatives. The schemes represent as such an institutional innovation as they offer opportunities for scientific renewal by giving the possibility to establish or expand a research unit that can span organisational (department, faculty and university) and disciplinary borders (Laudel and Gläser 2014).

Resources and organisational conditions

Studies of the role of the research environment in facilitating research performance and quality can be grouped into two overarching themes: availability of resources and organisational conditions (Hellström et al. 2017). Resources means both human and financial capital. The CoE grant offers the opportunity to recruit highly talented junior and senior scholars and the CoE label and the prestige it entails, aid to this goal (Balderstone 1995; Tijssen 2003). Studies further indicate that long-term and stable funding gives autonomy and flexibility which stimulate academic quality and performance (Pelz and Andrews 1966; Hemlin et al. 2008; Heinze et al. 2009; Salter and Martin 2001; Hollingsworth 2008; Langfeldt et al. 2010).

In terms of organisational conditions, the literature indicates that shared facilities and offices and social arenas; small research group size; flat structures and low level of bureaucracy; inspiring and facilitating leadership and good collaboration with host department and university management are important (Heinze et al. 2009; Hollingsworth 2008; Youtie et al. 2006).

The 'centre' concept

Building strong research group and critical mass is an important part of the CoE-idea. In terms of organisational structure, centres are often formalised (as opposed to regular research groups, they can have a board of directors and an advisory board, a dedicated centre leader, primary (or principal) investigators and a small administration (Boardman and Gray 2010, Langfeldt et al. 2013). Comparative studies show that the Norwegian scheme emphasises such structural aspects to a larger extent than the other Nordic schemes (Langfeldt et al. 2013; Borlaug 2016).

Still, the CoEs are not separate legal units, but subject to university jurisdiction and as such have limited authority, and they are funded for a limited period of time. CoEs may therefore embed the characteristics both of a department and a research group, representing (at least in some cases) a somewhat challenging construction (cf. Langfeldt et al. 2010). The centres are furthermore expected to achieve some sort of lasting effect and further life after the CoE grant has ended, by attracting other grants. This may pose challenges for the hosting institution in

terms of integrating the centres back into the ordinary structure (Rip 2011; Borlaug and Langfeldt 2019).

Host institutions

While research on large funding schemes has contributed to enhance our knowledge on how such grants may affect researchers' behaviours (Bloch et al. 2014; Langfeldt et al. 2015; Laudel and Gläser 2014), the issue of how and to what extent universities adapt to these policies still remains relatively underexplored. Studies of impact of large funding grants on universities argue that, while they provide prestige, reputation and money and are as such attractive to the universities, the grants do not enhance the host institution's organisational capabilities as the grant binds up resources, strengthen fields of research that might not have been built within the strategic planning of the university, and as such may reduce universities strategic capabilities (Edler et al. 2014). Some argue that the declining role of institutional funding and conversely the increase in external funding has posed a shift in authority from the research organisation's top management to the research group leader. Less dependence on institutional funding could mean that the research organisations lose their ability to influence research groups top-down (Verbree et al. 2015; Whitley and Gläser 2014).

A study of the call and selection process of the Swiss NCCR scheme, which grant is considerably larger than the SFF grant, showed that the scheme had large impact on the smaller institutions as these needed an explicit and transparent strategy for selecting and supporting NCCR applications (Langfeldt and Borlaug 2016). The large institutions, on the other hand, seem to apply a more implicit strategy in the sense that all may apply for a centre grant, and they support more proposals than they can afford in terms of co-funding, calculating that not all proposal will be successful. On this background, we expect that the SFF scheme may impact the institutions differently depending on type and size of the institution.

Impact on research practices, interdisciplinarity, risk-taking and growth dynamics

The CoE scheme includes an expectation of interdisciplinarity as the research in the centres is expected to explore emerging fields of science and create cooperation among scholars (Hellström et al. 2018). The link between excellence/forefront research and interdisciplinarity have been emphasised by many (Hemlin et al. 2008). In a study of the Swedish CoEs – the Linnaeus centres – Hellström et al. (2018) found that the scheme, by providing long-term proximity of specialism and slack from base funding, creates favourable conditions for interdisciplinarity.

Moreover, a study of the success and growth dynamics of CoEs in Norway, Sweden, Denmark and Finland found important impacts, in particular in terms of enabling more interdisciplinary collaboration and risk-taking and enhancing international recruitment to the research areas involved. It also found that when measured as increased citation rate of the researchers, the CoE grant seemed to add less to the relative citation rate of those already performing at the highest level, than for those performing at a somewhat lower level prior to the CoE grant. Opposite to what would be expected based on the literature of cumulative advantages, in some cases the CoE grants appeared more important for the success of groups who were not already high performing and for groups with few other funding options (Langfeldt et al. 2015a).

However, the impact of the centres on research practices and content may vary between fields due to their organisation of research and resource needs (Whitley 2000; Becher and Trowler 2001). Based on data from 2009-13, Borlaug and Langfeldt (2019) found that the SFF scheme had different impact in the humanities compared to other fields. The humanities SFFs contributed to increased research collaboration between different fields and made disciplinary and organisational boundaries more permeable, but did not substantially alter individual collaboration patterns. They further seemed to generate more tensions in their adjacent environments compared to SFFs in other fields. These findings indicate that we can expect that the SFF scheme will have different impact on research in different fields and on emerging vs. established groups/researchers.

CoEs, the research system and societal impact

Excellence initiatives in research often imply awarding high-performing units, with a concentration of larger amounts of funding to fewer excellent research units (Bloch et al. 2016; Pruvot and Estermann 2015; Scholten et al. 2018). This may impact the research system in different ways, for instance lead to a stratification and a conservation bias in science at the expense of innovation (Merton 1968; Luukkonen 2012). To ensure high quality and a successful scheme, already strong research units in terms of scientific performance may be selected, indicating a Matthew effect (Borlaug 2016). One consequence of the SFF scheme may therefore be that already well-established research lines are prioritised, possibly reducing the potential for less established research lines.

Excellence schemes (not just centres) seem to impact the distribution of core tasks at the HEIs. A recent Dutch study claims that the focus on excellent research leads to less attention and appreciation for the other core tasks of the university: education and knowledge exchange (Scholten et al. 2018). However, most CoE schemes do not include explicit criteria for relevance or societal impact, as this is covered by other schemes. There is nevertheless an expectation that the centres

should contribute to society outside academia, through a variety of both formal and informal channels of knowledge transfer (D'Este et al. 2018). The link between the schemes and education seems to be less explored in the literature.

1.1.3 Conclusions from previous evaluations

The first evaluation of the Norwegian SFF scheme, performed before the first SFF period had ended, pointed to important added value of the scheme. The funding and excellence status enabled the building of strong research communities, by attracting highly qualified scholars and securing additional funds, and in general increased the international visibility of Norwegian research (Langfeldt et al. 2010). It also pointed to potential impacts on the research landscape. The SFFs employed a large share of the doctoral students in many areas, as well as a large part of senior and researcher positions, which over time could impact the relative balance between fields of research. Moreover, the host institution's co-funding of the SFFs implied harder competition for the institution's internal funds and in some cases reduced resources for other research groups at the host institutions. Hence, there were mixed views about the net effects for the host institutions (Langfeldt et al. 2010:67).

The latest evaluation of the Danish CoE scheme, which has many similar features to the Norwegian scheme, found that it had a very positive impact on the quality of research in Denmark, created pools of excellence with a strong catalytic effect on universities and research institutions in general, and attracted talent and top researchers from abroad (Krull et al. 2013). As for the CoEs interaction with their host institutions, this evaluation concluded that the lack of integration which was found in the first evaluation of the Danish scheme (Banda et al. 2003), had been resolved and that the CoEs had an important effect on directing the priorities of the host universities 'toward academic excellence, competitiveness and internationalisation', and also had a spill-over effect to educational activities (Krull et al. 2013:37).

Key questions

In sum, previous studies and evaluations point to a need to address organisational and field differences in order to better understand the impacts of CoE schemes, as well as the complexities of cumulative advantages. Moreover, there is a need to follow up previous findings on how surrounding research groups are impacted, the impact on different host institutions and to get a nuanced understanding of different views on the net effects of the CoEs on the involved research fields. How is the SFF scheme influencing the different parts of the Norwegian research system, in what ways?

1.2 Data and methods

To best answer the questions, we used a mixed-methods approach, including documents studies, one survey to the academic staff at the departments that host(ed) the SFFs (Survey 1), and one survey to the PhD student (Survey 2), and interviews with stakeholders.

1.2.1 Document studies

The document studies included analysis of the following documents:

- The mid-term evaluations of the SFF-I, SFF-II and SFF-III centres
 - o Midway Evaluation of the Norwegian Centres of Excellence, A report submitted by an International Evaluation Committee, 10 November 2006. (SFF-I)
 - o Midterm Evaluation of Eight Centres of Excellence (SFF-II). 2011.
 - o Midterm Evaluation report of SFF-III. 2018.
- Annual reports for the SFF scheme (starting in 2006)
- Annual reports from the centres
- The final reports for SFF-I and SFF-II centres
- Impact case reports provided for the following recent RCN evaluations:
 - o Humanities (2017)
 - o Social sciences (2018)

In addition, the three first generations of centres were encouraged by the RCN to provide both scientific and societal impact studies. 23 centres delivered either one or several impact cases. In total 62 unique cases, whereof 26 societal impact and 32 scientific impact.¹ Most of the cases were from SFF III which are still running.

While the documents have informed our general understanding and knowledge of the centres, they have primarily been used to investigate the societal impact of the centres.

The final impact of a research unit like an SFF builds upon interactions with society. Modern evaluation methods shift the attention to the process and focus on the intermediary steps, called *productive interactions*, that are required to create societal effects (e.g. Spaapen & van Drooge 2011; D'Este et al. 2018). An interaction in this framework means a contact between a researcher and a societal stakeholder, and it is productive when the stakeholder sets in motion activities to transform the research towards a societal goal. Interactions can be direct

¹ The scientific impact cases served as background information, but are not explicitly used in this report.

(personal, face-to-face e.g. workshops), indirect (e.g through popular science publications, policy briefs) or financial (contract, economic contribution).

We use this framework, but a limitation is that we have only access to the research side of the interaction. To understand the nature and intensity of these interactions we mapped all the centres, based on annual and final reports, into a scheme which listed different modes of interaction. Based on the productive interaction framework we constructed two main modes: formal and informal interactions.

- Formal interactions
 - o Consultancy, contracted/joint research, networking, teaching/training, guidelines/protocols/norms, commercial activities (funding, spin-offs, products, services)
- Informal interactions
 - o Advisory work, dissemination activities, lectures for the community

We mapped the extent of these interactions based on the assumption that a relatively high number of them increases the propensity of societal impact. We gave each centre a score on the different modes of interaction ranging from 0-3 where 0 equals none, 1 equals low, 2 equals medium and 3 equals high. For each centre we went through annual reports and final reports and made specific search on key words for the different interactions. In order to develop a coherent and fair understanding of the scale, one researcher coded all centres.

As SFF IV centres only have been running for two years, we decided to omit them from the analysis, acknowledging that building and developing interactions take time.

For the societal impact cases, we read carefully through them and made a one-paragraph summary of each. We read the scientific impact cases to see whether they also contained information relevant for understanding the centres' societal contribution (several of the cases turned out to contain descriptions of both types of impact). The cases and summaries were used in an inductive pattern-matching approach where we focused on the following aspects:

- The research/results that formed the basis of the impact. What was it about? Who were involved? Was it based on people, projects and/or funding in addition to the SFF?
- The impact in terms of domain, type/stage and geography. Was it an impact on policy, industry, healthcare, the general public or other domain? Was it an impact in the broad sense of the term or more an intermediary outcome or productive interaction. Where did the impact happen?

- The link between the research and the impact. Here we emphasised the pathway and needed activities such as dissemination, communication and patenting.
- Partnerships: were there any other actors involved in the impact beyond the researchers from the SFF?
- Attribution: to what extent does it seem reasonable to claim that the result happened because of activities in the SFF rather than something else?

1.2.2 Surveys

Survey to SFF participants and stakeholders

A considerable number of researchers have been or are participating in or affected by the SFFs. To get the perspectives and experiences of stakeholders from all fields, host institutions and generations of SFFs, we invited past and present SFF participants as well as to those (presently) affiliated with the departments/ units housing the SFFs, to participate in a web survey. Hence, the survey covers the views and experiences of the SFF staff, as well as the views and experiences in the adjacent environment of the SFFs. The survey addressed the impact of the SFF scheme on respondents' activities and resources research and their organisations. The questionnaire was "routed" so that different groups received different set of questions. There were some separate questions for the SFF directors and the heads of the host departments. Moreover, for the two first generations (SFF1 and SFF2) there were questions on the period after the termination of the SFF grant (see Appendix 1).

Sampling of the SFF participants was based on lists provided by the RCN, whereas the sampling of those currently affiliated with the departments/units hosting the SFFs was based on the institutions' online presentation of their academic staff. Table A 3 in Appendix 1 lists the units included as hosts in the survey. The sampling resulted in a list of 3035 senior academic staff and postdocs/researchers at the host units (PhD fellows were not included).

The lists from the RCN contained a total of SFF 2724 participants (excluding those listed as PhD fellows, guest researchers or assistants). Web searches on their names, complemented with some assistance from the SFFs, yielded email addresses for 2444 of these.

The two lists were merged and cleaned, and duplicates identified, resulting in a list of 4652 persons to be invited to the survey. This includes 2441 SFF participants and 2211 persons presently affiliated with a (present or past) host unit but not with the SFF (table below).

Table 1.1 Invited sample – Survey to SFF participants and stakeholders

SFF relations	SFF generation participated/hosted					Total
	SFF1	SFF2	SFF3	SFF4	Multiple	
SFF	634	416	438	223	66	1777
SFF and host	139	120	234	99	72	664
Only host	456	376	818	359	202	2211
Total	1229	912	1490	681	340	4652

Survey to PhD students

To study the impact of the SFF scheme on research training and the research, competences and careers of the PhD students, we sent a questionnaire (web-survey) to all past and present PhD students in the SFFs. The survey addressed the role of the SFFs for the PhDs' research activities, career building, and international and interdisciplinary collaboration.

The survey was short (see appendix 1), and tailored to address those who have completed their PhD, as well as current PhD students (different questions to different groups, as well as some common questions). Sampling was based on lists of SFF participants provided by the RCN. These contained 1665 persons listed as PhD students in an SFF (including all generations of SFF). Web searchers on their names, complemented with some assistance from the SFFs, yielded email addresses for 1424 of these, and these 1424 were invited to participate in the survey.

Survey execution, response rates and limitations

In both surveys the respondents were given one month to reply, and several reminders were sent out to increase response rates (three reminders for the PhD survey (launched 21 August 2019), and four for the participant/stakeholder survey – launched 22 August 2019). The overall response rate was 43 per cent for the participant/stakeholder survey and 55 per cent for the PhD survey. Details for both surveys are given in the table below.

Table 1.2 Surveys to participants, stakeholders and PhD fellows: Samples and responses

	SFF participants and stakeholders	PhD fellows in SFF
Initial sample of invited persons	4652	1424
Excluded from the sample		
Invalid email addresses/automatic return	317	244
Outside target group; wrong email/person	35	11
Net sample	4300	1169
Replied	1850	639
Filtered out in first question (outside target group)*	*319	61
In target group and replied	1531	578
Response rate: Per cent of net sample who replied	43.0%	54.7%
Per cent of initial sample who were in target group and replied (1531 of 4652 and 578 of 1424 respectively in the two surveys)	32.9%	40.6%

* Includes one person who completed the survey and was subsequently deleted (by own request).

Response rates were somewhat higher in active than in completed SFF, and considerably higher among those who were affiliated with both the SFF and the host. See Table A 1 and Table A 2 in Appendix 2. The involved leadership is well covered with 46 SFF directors and 55 department heads among the respondents.

Respondents may have different reference frames and interpret questions differently. Hence, clear and specific questions are needed to enhance the validity and reliability of responses. In formulating the questionnaires, we aimed to avoid imprecise, complex and ambiguous questions, and reformulated or dropped questions that appeared difficult to the pretesting group.² In addition, respondents were free to skip any individual question, and most questions have ‘cannot say’ or other/free text reply alternatives. These options were given to increase the response rate and the reliability of the results by avoiding respondents exiting the survey when encountering a difficult question or selecting a random answer to be able to proceed to the next question.

There are still limitations and sources of error in the data: Respondents may interpret questions in different ways, and also misunderstand what is meant by an SFF or have limited memory of their SFF relations. For example, respondents who are/have been affiliated to multiple SFFs and other centres, or multiple organisation hosting SFFs and other centres, may not be able to fully separate the centres. They may also answer strategically, e.g. exaggerate positive or negative experiences in line with their general perceptions of the SFF scheme and how they would like the scheme to be evaluated (see also Section 1.2.4 below, on limitations in identifying impact based on stakeholder experiences). When possible, we relate the survey results to the results from the career mapping and bibliometric

² This was a smaller group of relevant colleagues and stakeholders, there was no time for rigorous pretesting

analyses (Sivertsen et al. 2019), to expose possible biases and limitations in the added value of the SFF scheme as reported by the stakeholders.

1.2.3 Interviews with selected stakeholders

While the surveys address the impact of the scheme on the adjacent environments at the host department and cover a large part of the relevant stakeholders, it only partly covers the scheme's potential impacts on the host institutions. In addition to scholarly impacts (on research collaboration, interdisciplinarity, publication practise etc), this may include impacts on the host institution's priorities and strategies; the development of internal instruments to support research; the support of centres after the termination of the SFF grant; distribution of financial resources and the host's ability to cater for and support interdisciplinary research. The host institutions are dissimilar, covering large and small multidisciplinary universities, specialised universities and university colleges and research institutes. They have also different experiences in hosting SFFs, for instance UiO has hosted 17 centres, while some institutions have hosted one or two, and have thus more limited experiences. To investigate the long-term impacts, we therefore chose to primarily interview at universities with more than one SFF, but we also included one research institute as the institute sector has hosted four centres.

To cover different views and experiences, we have interviewed individually rectors/pro-rector (5), research institute leader (1), deans/deans of research (4) and administrative personnel with knowledge of the scheme (5). In addition, we had one group interview with vice rector and deans of research at UiO.

The centres are very heterogenous facing different opportunities and challenges depending on their field(s) and host. We have therefore chosen to not interview centre leaders or participants because this would only give voice to some centres. However, the centres are covered through the survey and the final reports, and the centre leaders will be interviewed by the international committee that will provide the final conclusion of the evaluation.

1.2.4 Delimitations and limitations

'Impact' and 'scientific quality' based on stakeholder experiences

The questions to be answered concern the '*impact*' of the SFF scheme. It is generally hard to identify the impacts of different research funding schemes, as research is funded by multiple sources and researchers are involved in multiple collaborations and projects (Langfeldt et al. 2015b). Even when grants are large and long-term, as those awarded by the SFF scheme, and have obvious influences on the

recipients as well as their surroundings (Langfeldt et al. 2010), impacts in the strict sense may be hard to demonstrate, both because there is no mapping/analysis of the 'before-the-grant-situation' and because of general attribution problems. Hence, isolating the impacts of the SFF schemes is complicated, and counterfactual questions as e.g. how much of the co-funding and collaboration would be realised also without the SFF grant, cannot be fully answered.

In this report, 'impact' is studied as perceived by the various stakeholder groups, focusing on how the scheme has worked, and what they perceive as the most important and valuable impact, as well as possible negative impacts and how the scheme could be improved. Hence, we rely upon the perceptions of the involved actors and their memory in attributing impact to the SFF scheme. To get a comprehensive and nuanced picture, we include a large number of actors, and also actors in the adjacent environment of the SFFs.

'*Scientific quality*' is another term in the request from the RCN that calls for clarification. The literature identifies three basic aspects of research quality notions: (1) the plausibility/solidity, including methodological soundness and research integrity, (2) the originality/novelty, and (3) the value of the research, in including value for advancing science/the field of research, as well as societal value (Langfeldt et al. 2016). Each of these aspects may have very different content in different fields of research, and also in different evaluation contexts (Lamont 2009). Hence, 'research quality', as well as 'scientific quality',³ is contested and elusive, and the dynamics of science imply that there is no general consensus about what 'scientific quality' means or how to identify it. E.g. what is perceived as the most solid and significant contributions to a specific research field varies over time and between peers/evaluators.

In this report, analysis of 'scientific quality' is based on the perception of the involved stakeholders, e.g. whether and how they perceive that the SFF has helped produce better research.

Limitations in analysing impacts of the SFF scheme

As noted in above, isolating the impacts of the SFF scheme is complicated, 'impact' is studied as perceived by the various stakeholder groups, focusing on understanding *how* the SFF scheme has affected the awarded groups, their institutions and their surroundings. Groups outside the SFFs are included in the survey (staff in host departments not affiliated with SFF). Still, these groups are not groups for regular comparison. The reason for including these groups in the survey (and interviews with leaders at host organisations) is to understand how the SFF scheme

³ We take 'scientific quality' to include the same aspects as 'research quality', except for the external parts of the value of science, i.e. 'scientific quality' includes value for advancing science/the field of research, but not societal value/value outside science.

affect them, and get more comprehensive data and a more nuanced picture of the various ways the scheme impacts the Norwegian research and research institutions. The purpose is not to compare the members of the SFFs with groups who have not benefited from the SFF scheme – as would be needed to perform impact analysis in the strict sense.

Another possibility would be to include e.g. non-awarded SFF applicants for comparisons, and study differences between awarded and non-awarded applicants, as was done in the SFF evaluation in 2010 (Langfeldt et al. 2010). In this project we have chosen not to do this. The views and experiences of the adjacent environment of the SFFs are more relevant (than those of rejected applicants) to answer the questions posed by the RCN. Moreover, survey and interview data collected at one point of time would not give the hard data needed to fulfil the requirements of impact analyses (i.e. identify the situation before and after the grant, and compare awarded and non-awarded groups which are otherwise similar).

2 Impact on researcher training and recruitment

2.1 Impact on PhDs and researcher careers

Impact on the work of the PhDs

Identifying impact of a policy measure based on the views in its target group is far from a straightforward task. To get information of *how the SFFs influenced the PhD fellows*, the questionnaire to this group contained a number of questions about their situation compared to what they thought would be their situation if they had done their PhD work without being part of an SFF. Notably, in many cases the SFFs are reported to have similar impact for all PhD students in the host departments, regardless of whether they were formally participating in the SFF.⁴ Hence, being at a department with an SFF may impact the research environment of a PhD fellow (e.g. seniors to discuss with; research facilities available) regardless of their SFF affiliation. In the survey, the PhD fellows were asked to indicate their basis for their replies concerning impact: 46% indicated that they compared with the situation for PhD students in their department who was not part of the SFF, and 36% indicated that they compared with a situation outside their department.⁵ Hence, in some cases the replies may underestimate the full impact of the SFF, as the PhD fellows compared with the situation for PhD fellows in their department who were not formally part of the SFF, but still benefited from it.

Figure 2.1 shows the answers to the questions on impact of the SFFs on the PhD fellows' work. The large majority report positive impact, whereas few reports negative or mixed impact. The highest percentages (above 60%) of positive impact are found on the PhD fellows' opportunities to work on questions perceived as

⁴ Of the respondents in the PhD survey, 17% reported that the SFF 'to a high extent', and 39% 'to some extent', had similar impact to all PhD students in their department. 8% answered 'not at all' whereas the remaining answered 'cannot say/not relevant' (Appendix 3, Q12 by field).

⁵ If they were unsure about whether the SFF impacted/would impact their PhD work, they were instructed to select the 'cannot say' alternative (5 to 31% did so, see Figure 2.1).

important in the international research community, to discuss their work with senior researchers, to participate in seminars relevant to their research, and in internal research collaboration, and to collaborate with other junior scholars working on similar topics. Moreover, a majority reports positive impacts on the research questions addressed in their PhD thesis, their advisors' academic qualifications in the field of their thesis, and their opportunities to participate in interdisciplinary research and to visit research groups abroad.

The questions where a majority replies that there is no impact or that the question is not relevant or that they cannot answer it, relate to user collaboration, knowledge transfer activities and dissemination outside academia, their competences in research management and their opportunities to achieve a position abroad after their PhD. Still 22 to 37 % of the PhD fellows find that the SFF has had positive impacts on these aspects.

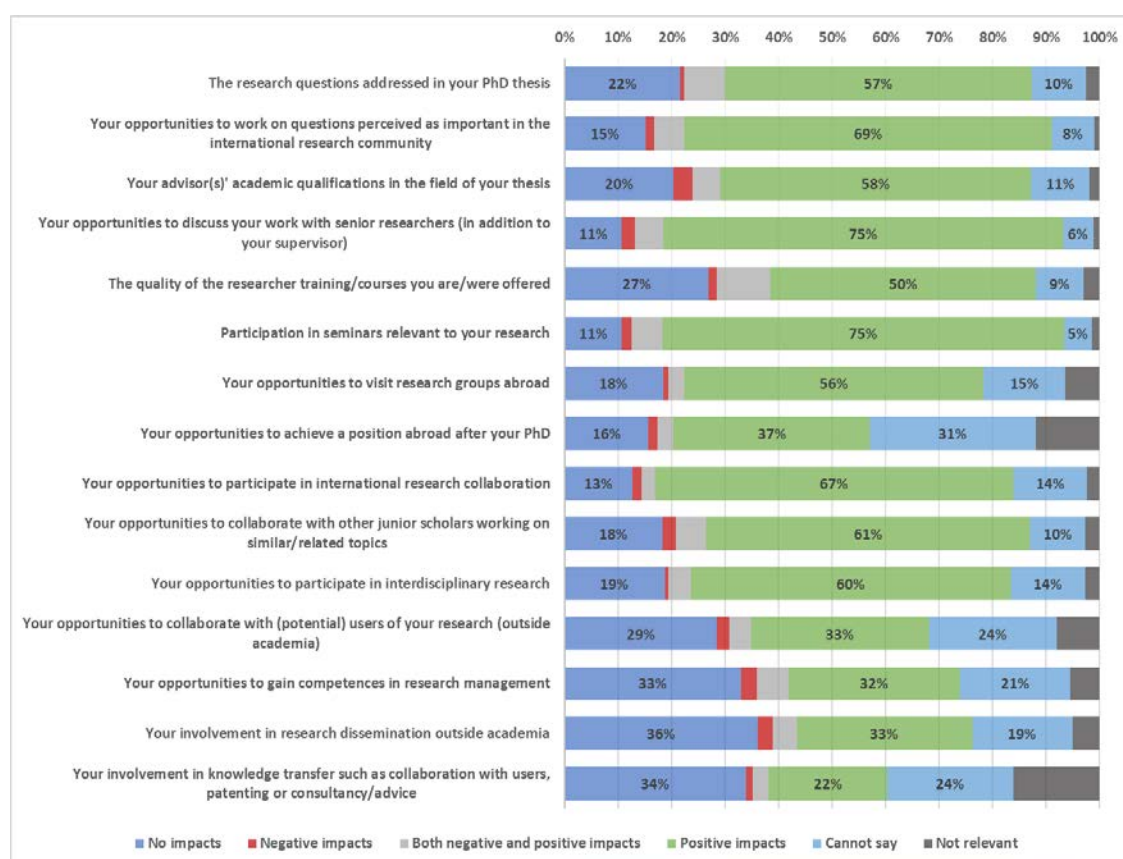


Figure 2.1 Please indicate in what way being part of the SFF has impacted the following aspects of your PhD work (N=534, Source: PhD survey Q10).

Adding up the answers to the questions about impact⁶ we find some differences between groups. Overall, the male PhD fellows report a bit more positive impacts

⁶ Based on the average score for the replies to all items in question 10 for each respondent.

than the female, and those who participated in the G(eneration)1 and G3 SFFs report more positive impacts than those who participated in the G2 SFFs. Part of the explanation for females more often reporting no impacts may be that they more often compared with the situation of PhD fellows inside their department who also benefited from the SFF, whereas male PhD fellows more often compared with a situation outside their department.⁷ Another explanation is that male PhD fellows are overrepresent in science and technology where we find much more positive impact on some particular items (see below, and Appendix 3, Q10 by gender). We find no obvious explanation for the differences between the SFF generations.

On some of the items, there are also some notable differences between fields and between the PhDs who have and have not been postdoctoral fellows in an SFF. Within science and technology, there are more positive impact on the research questions addressed in the thesis and on involvement in knowledge transfer activities and user collaboration. Within the life sciences there are some more positive impact on the advisors' qualifications in the field of the thesis and the research training/courses offered. Within social sciences and humanities there are some more positive impact on opportunities to international research collaboration, visiting research groups abroad, and achieving a position abroad after the PhD (Appendix 3, Q10 by field).

The PhDs who have also had an SFF postdoc position indicate more positive impact on most items, and in particular the research questions addressed in the thesis, the quality of the research training/courses, seminar relevant to their research, international research collaboration and the opportunities to achieve a position abroad (Appendix 3, Q10).

Career opportunities

In general, the former PhD fellows are quite positive concerning the role of the SFF on their career. 79% strongly or partly agree that the SFF has been important for their career, 67% that their network from the SFF has been important for their career, 63% that the opportunities they were given in the SFF have given a motivation for a further researcher career, and 51% that the prestige of the SFF has been important for their career. Still, 33% agree (partly or strongly) that their career would have been the same if they had done their PhD work in an environment that was not an SFF (Figure below). The PhD fellows who have also been postdocs in an SFF indicate some higher career impacts, particularly from their academic network of the SFF and the prestige of the SFF (Appendix 3, Q14). Impacts are much the same across the fields of research, but the motivation for a further researcher career – resulting from the opportunities given in the SFF – seem higher

⁷ 52% of the female and 41% of the male compared with a situation within their department.

in the social sciences/humanities and science/technology than in the life sciences (Appendix 3, Q14 by field).

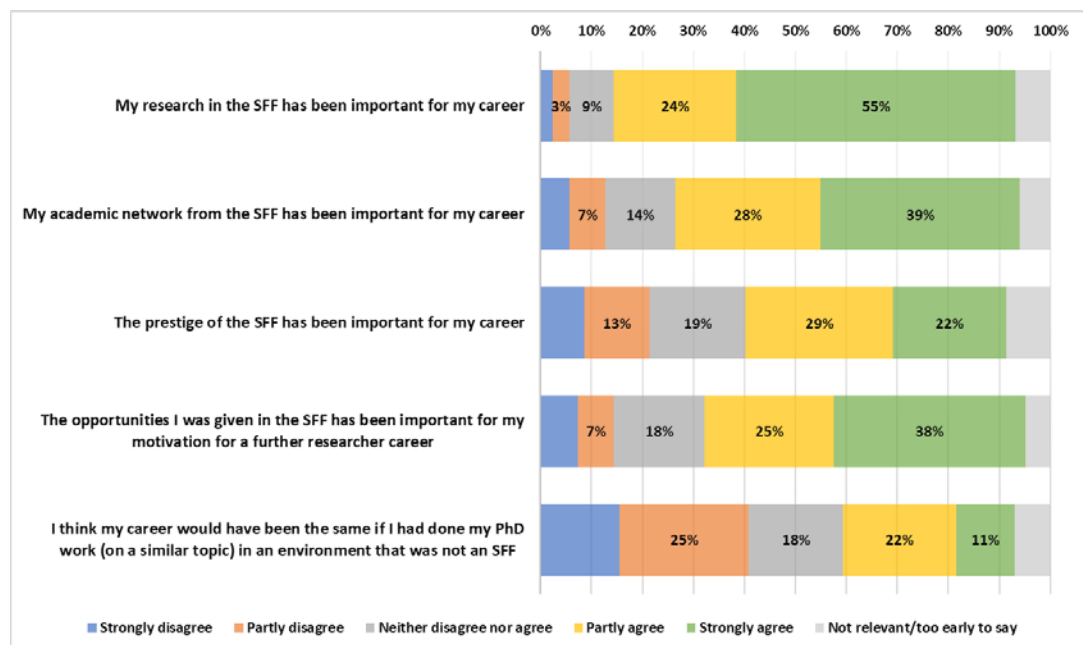


Figure 2.2 Please respond to the following statements regarding the role of the SFF for your further career (N=370, Source: PhD survey Q14).

Adding to this, positive career impacts of the SFFs are reported also in the survey to the SFF participants (other than the PhD fellows). A large part indicates that their participation in the SFF has increased their career opportunities, and more so the postdoc fellows: 56% of those who were SFF postdoc fellows and 41% of the remaining SFF participants indicate clear or some impact on their career opportunities⁸ (Appendix 4, Q3).

The results are also positive concerning the PhD fellows' ability to build on their SFF research and collaboration in their further research career. A large majority of the previous PhD fellows who are still active in research report that they build on their PhD work in their present research, but work on different research topics than those for their PhD (Figure below). A large part of them (70% 'to a high extent' or 'to some extent') still collaborate with the same senior researchers in Norway as during their PhD, and many also collaborate with the same seniors abroad (50%). Looking into variation between groups, we find that the PhD fellows within the social sciences and humanities, and those who have also been a postdoc in an SFF, more often indicate that they build on their SFF research in their further

⁸ The postdocs in this survey had not been PhD fellow in an SFF. Those who had also been a PhD fellow were invited only to survey to the PhD fellows.

research career (Appendix 3, Q13 by field and by postdoc). To build on their previous research may include e.g. to continue a research line/do research on the same kind of research questions and topics, or to use acquired research competences/theories/methods. Hence, the question may have been understood in different ways. As a substantial part of the former PhD fellows reply that they now work on different topics than those for their PhD, we assume that many have interpreted the question (about whether they build on their PhD research) in a broad sense.

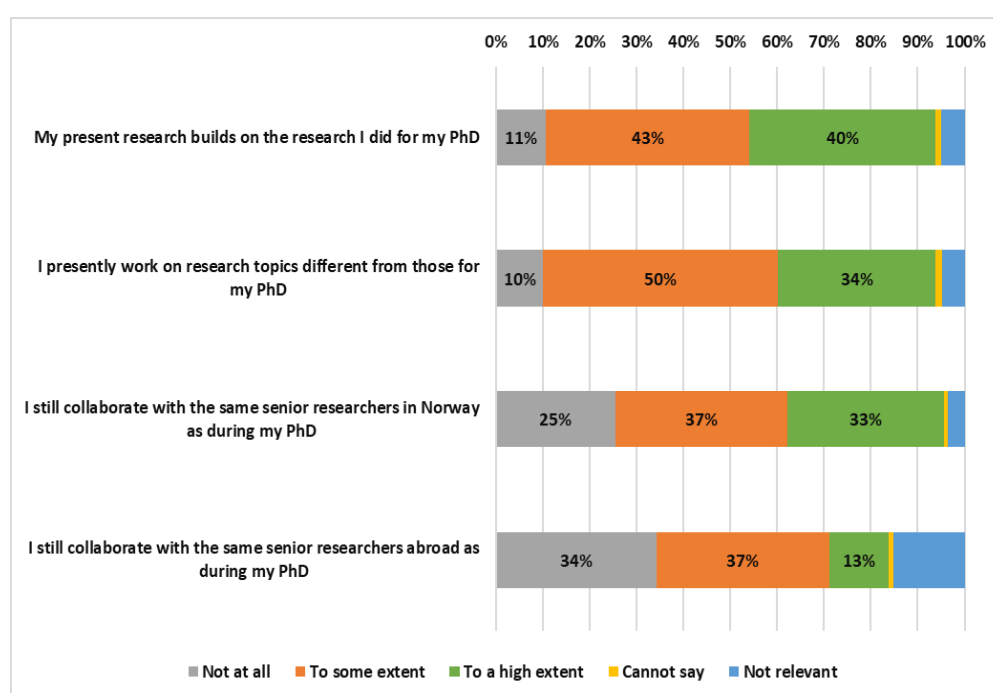


Figure 2.3 Please indicate to what extent you have continued your research lines/topics and collaboration from the SFF after your PhD fellowship (N=357, Source: PhD survey Q13).

Whereas a large part of the past PhD students who replied to the survey are now employed at higher education and research institutions (Appendix 3, Q2), a large part of the current PhD fellows in the SFF express motivation for future work also in other sectors. When given the opportunity to express multiple preferences, 42% include a 'researcher/analyst position in private sector/industry' among their preferences, and 38% include 'researcher/analyst position in public sector'. Varieties between research domains are shown in the figure below.

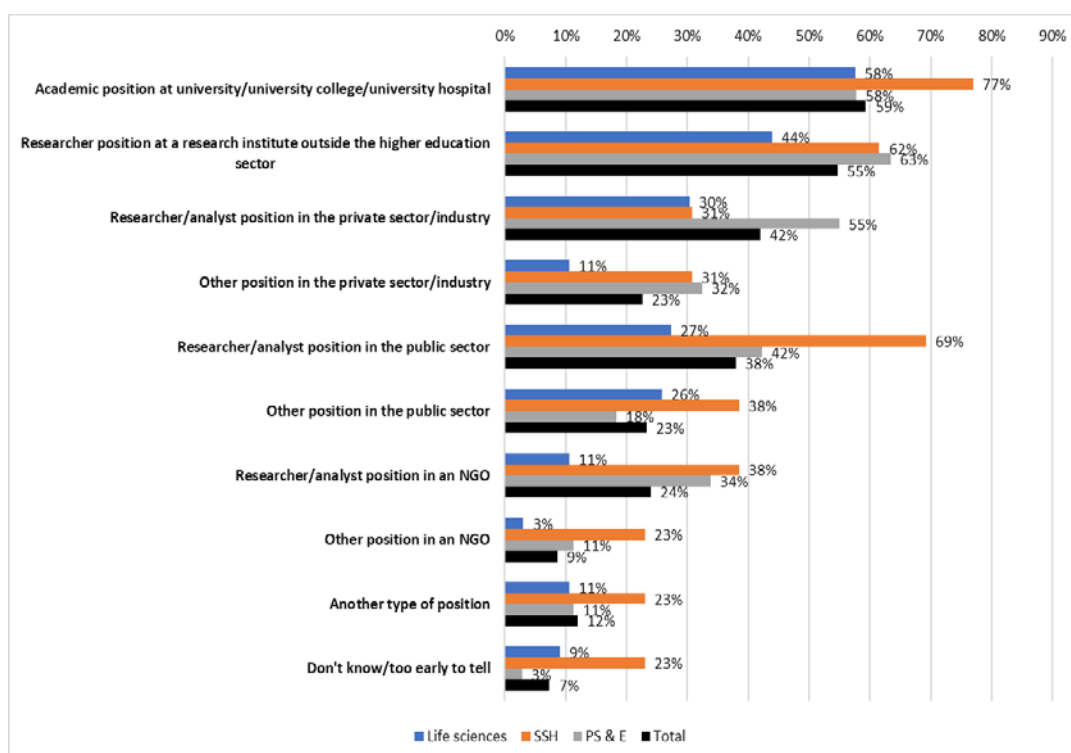


Figure 2.4 What kind of carer would you prefer once you have completed your doctoral degree? (You may select more than one) (N=150, Source: PhD survey Q15).

2.2 Teaching and training

In most cases, the SFFs seem to have little impact on the participants' teaching on Bachelor and Master level, but participants report a substantial increase in their teaching and supervising at PhD level (Figure below). A large majority reply that their *Bachelor level teaching* has not changed, or that the question is not relevant/they do no such teaching (73%). Still, more reply that their Bachelor level teaching has decreased (16%) than increased (8%). Notably, there is substantially more decrease within the SFFs in the social sciences and humanities (30%) than within the other SFFs (Appendix 4, Q3 by field).

For Master level teaching and supervising we find a partly similar pattern: A majority reply that their Master level teaching and supervising has not changed or the question is not relevant (57%). And also here there is substantially more decrease within the SFFs in the social sciences and humanities (27%) than within the other SFFs (Appendix 4, Q3 by field). But overall more reply increased (30%) than decreased (12%, figure below). Both for Bachelor and Master level teaching, the proportion with decreased involvement is a bit higher among those in full professor, leader and similar positions, than among those in other positions.

As for PhD teaching and supervising, 52% report that it has increased, and very few that it has decreased (3%). No large differences between the SFF generations in teaching and supervising appear from the data.

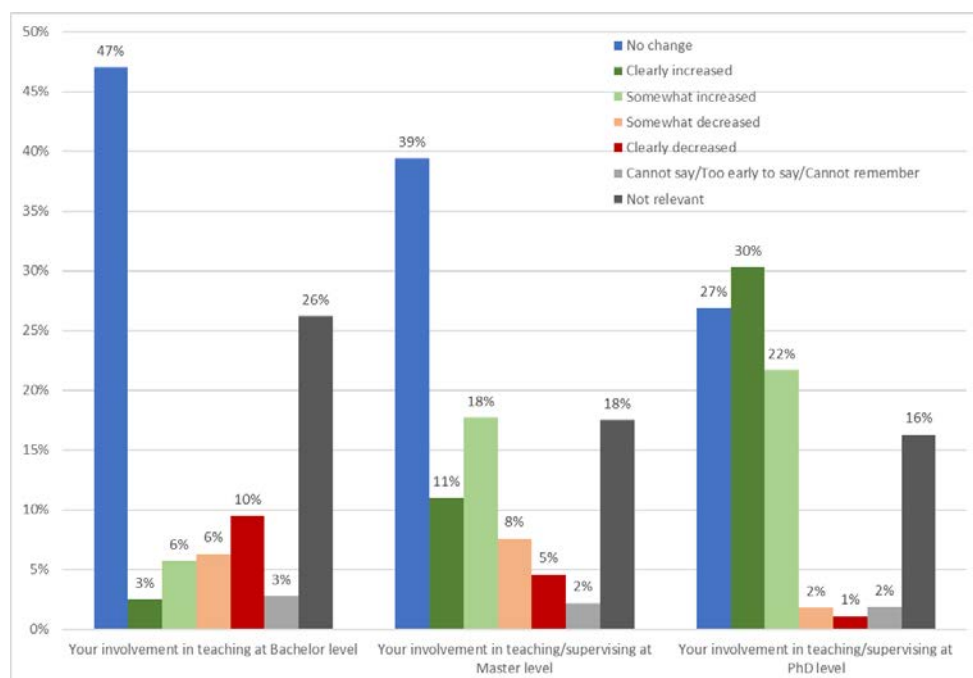


Figure 2.5 How did you experience your situation in the SFF compared to your previous situation regarding the following issues? (N=824, Source: SFF participant and stakeholder survey Q3).

The replies from the department heads, substantiate that the SFF staff contributed more to Master than Bachelor level teaching. 83% of them reply that the SFF contributed to Master level teaching and 57% to Bachelor level teaching (Appendix 4, Q12).

Moreover, the survey data indicate that the SFFs in many cases have had positive impact on the study programmes in the host departments. In total 56% reply that the SFF has had positive impact and 5% indicate negative impact.⁹ Among host staff who were/are not part of the SFF, these figures are a bit less positive: 41% indicate positive impact and 10% indicate negative impact (Table in Appendix 4, Q7j by SFF participation).

⁹ For the remaining, 10% indicate both positive and negative impacts and 30% reply 'no impact' or 'too early to say/cannot say'.

2.3 Expertise in areas important to Norway

According to the SFF participants and the host departments, the SFFs have had positive impact on the competence-building in areas important for innovation, sustainability or public sector in Norway. The SFF participants are somewhat more positive than staff at the host department who have not participated in the SFF: of the SFF participants who are at the host department in 2019, 68% indicate (high or moderate) positive impacts on competence-building in important areas. Very few indicate negative impacts (Figure below).

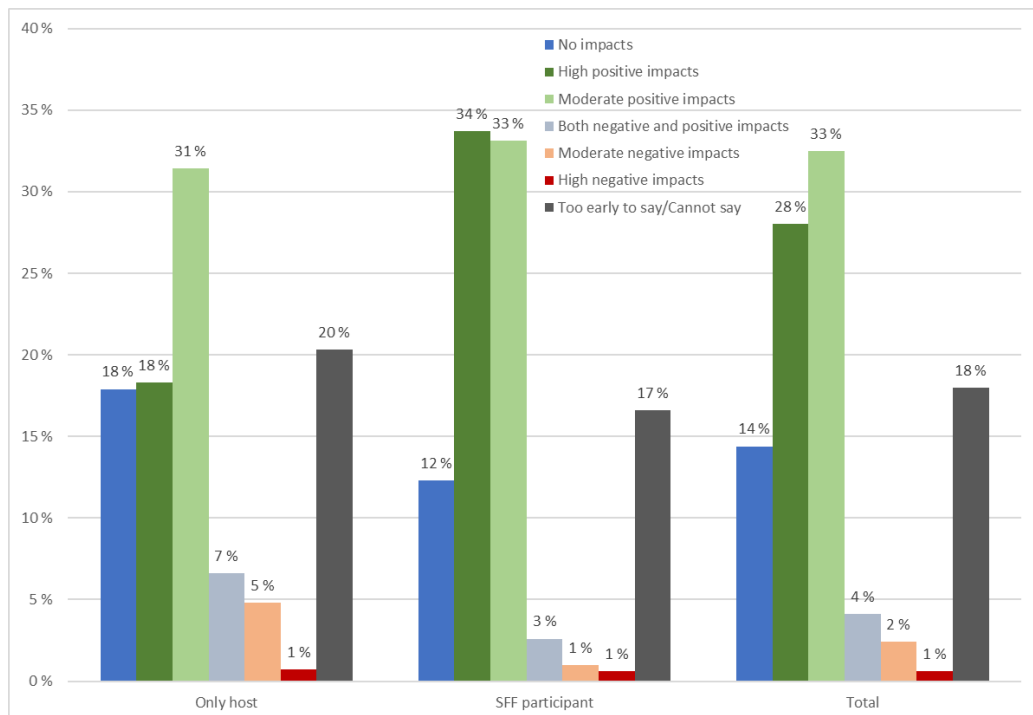


Figure 2.6 Impact on competence-building in areas important for innovation, sustainability or public sector in Norway (N=785, Source: SFF participant and stakeholder survey Q7: Based on your experiences, what kind of impacts have SFF(s) had in your department?).

As for the staff who do/did not participate in the SFF, we find some differences between research areas. In all fields the large part is positive, especially within the life sciences where 64% indicate (high or moderate) positive impacts on competence-building in important areas. Staff at social sciences and humanities departments/units emerge as the least positive, with 36% indicating positive impacts and 9% negative impacts (Figure below).

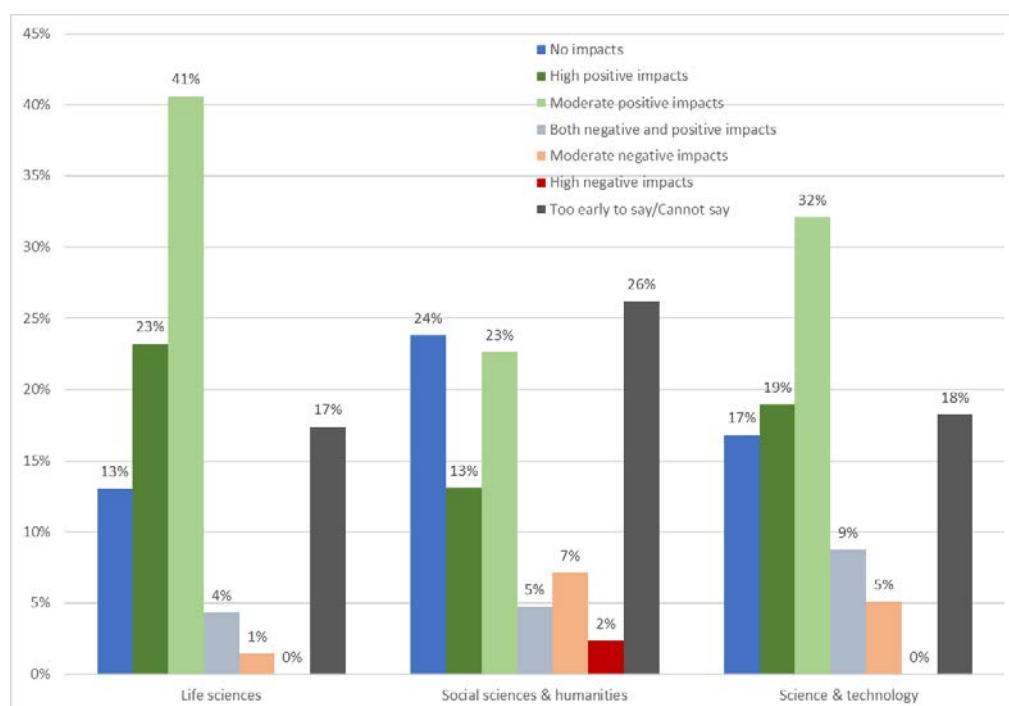


Figure 2.7 Host staffs' views on the impact on competence-building in areas important for innovation, sustainability of public sector in Norway (Source: SFF participant and stakeholder survey Q7: Based on your experiences, what kind of impacts have SFF(s) had in your department? N=290, SFF participants not included).

2.4 Summary

Positive career impacts: The participants in the SFFs report that the SFFs enhance their careers. Close to 80% of the former PhD fellows in the SFF agree that the SFF has been important for their career. Still, 33% of them agree (partly or strongly) that their career would have been the same if they had done their PhD work in an environment that was not an SFF. Other SFF participants (than the PhD fellows) also indicate that the SFF has increased their career opportunities, in particular the postdoc fellows. Moreover, a large majority of the previous PhD fellows who are still active in research report that they build on their PhD work in their present research, and still collaborate with the same senior researchers, but work on different research topics than those for their PhD.

Enhanced research environment: According to the large majority of the PhD fellows, being part of an SFF has positively impacted their opportunities to work on questions perceived as important in the international research community, to discuss their work with senior researchers, to participate in seminars relevant to their research, and in international research collaboration, and to collaborate with other junior scholars working on similar topics. Some also report positive impact

on collaboration with users outside academia and dissemination outside academia (33%), knowledge transfer activities (22%).

Teaching and training: The SFF participants report a substantial increase in their teaching and supervising at PhD level. In most cases, the SFFs seem to have little impact on the participants' teaching on Bachelor and Master level. Still, within the social sciences and humanities close to one third of the participants report some decrease in their teaching at these levels.

3 Impact on scientific activity and collaboration

3.1 Research activities / advancing knowledge

The SFF participants report a number of positive impacts from SFF participation on their research conditions and activities. Foremost, they find that their opportunities to address new important research topics, and contributing to advancing scientific knowledge on key international research questions in their field, are increased (Figure below).

Moreover, a clear majority indicate better access to research facilities, equipment, data registries or biobanks, and technical staff or other research support services. The ability to attract external research grants is also improved: 25% indicate 'clearly increased' and 24% 'somewhat increased' on this item. The most positive replies on this item come from the SFFs within the social sciences and humanities where 33% indicate a clear increase in their ability to attract external research grants (Appendix 4, Q3 by field).

When it comes to time available for research, the picture is a bit more mixed. 40% indicate that there is no change in their time available for research, whereas 40% indicate that it is (somewhat or clearly) increased, and 9% that it is (somewhat or clearly) decreased.

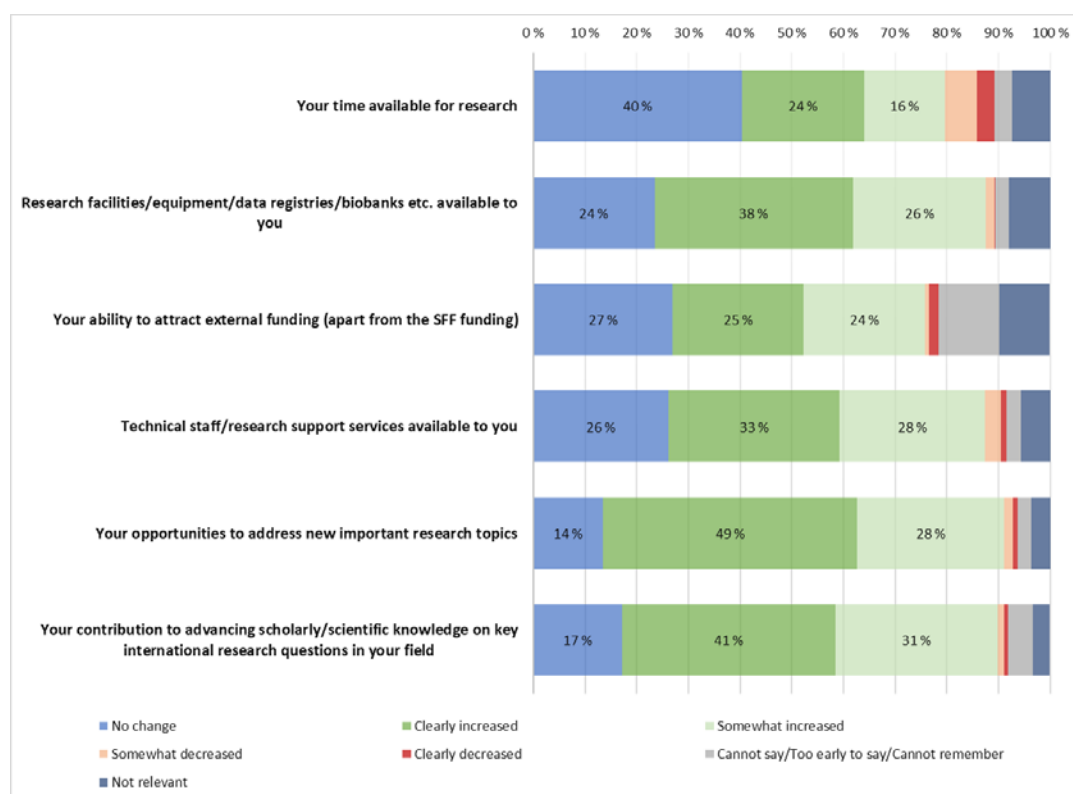


Figure 3.1 How did you experience the situation in the SFF compared to your previous situation (the time before the SFF) regarding the following issues? (N=825, Source: SFF participant survey Q3).

When explaining how the SFF helped them advancing scientific knowledge on key international research questions in their field, new collaboration/new partners come up as the most frequent important factor. Of those who had replied that the SFF clearly increased their contribution to advancing scientific knowledge on key international research questions, 99% pointed to new collaboration/partners as an important or partly important for this. More resources, in terms of time, staff or facilities were important or partly important for 92%. Increased visibility and increased ambitions were also important or partly important for close to 90%, and increased risk-taking for 67%, of these participants (Figure below). The figures are much the same across the three research areas, apart from the increase in risk-taking where the figures for the social sciences and humanities are somewhat lower (35% of those in SFFs within the social sciences and humanities answer that this was not important or not relevant, see Appendix 4, Q4 by field).

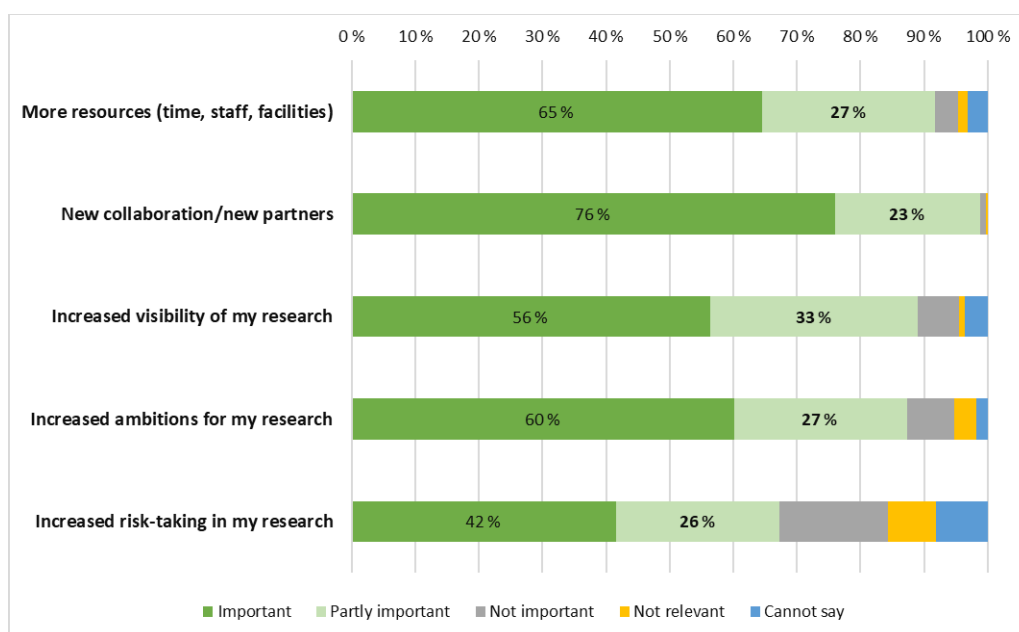


Figure 3.2 You have answered that the SFF helped you advance scholarly/scientific knowledge on key international research questions in your field. Please indicated in which way the SFF enabled this (N=338, Source: SFF participant survey Q4).

The SFF funding differs from ordinary research grants in many ways. When asked what was the most important feature of the SFF funding for realising the research in the SFF, the large majority (85%) of the SFF leaders answered that the long-term financing was the most important. They were asked to select between the flexibility of the funding, the size of the funding and the long-term financing. There was also an 'Other' option which no one selected. Still, selecting between the three key characteristics of the SFF funding was not necessarily easy, and five of the SFF leaders commented that all three aspects were important. The figure below indicates somewhat less emphasise on the long-term funding within the life sciences – three leaders here selected the size of the funding and one the flexibility of the funding. Among the leaders of SFFs within the social sciences/humanities and sciences/technology, one leader selected the flexibility of the funding and one the size of the funding – the rest selected the long-term financing.

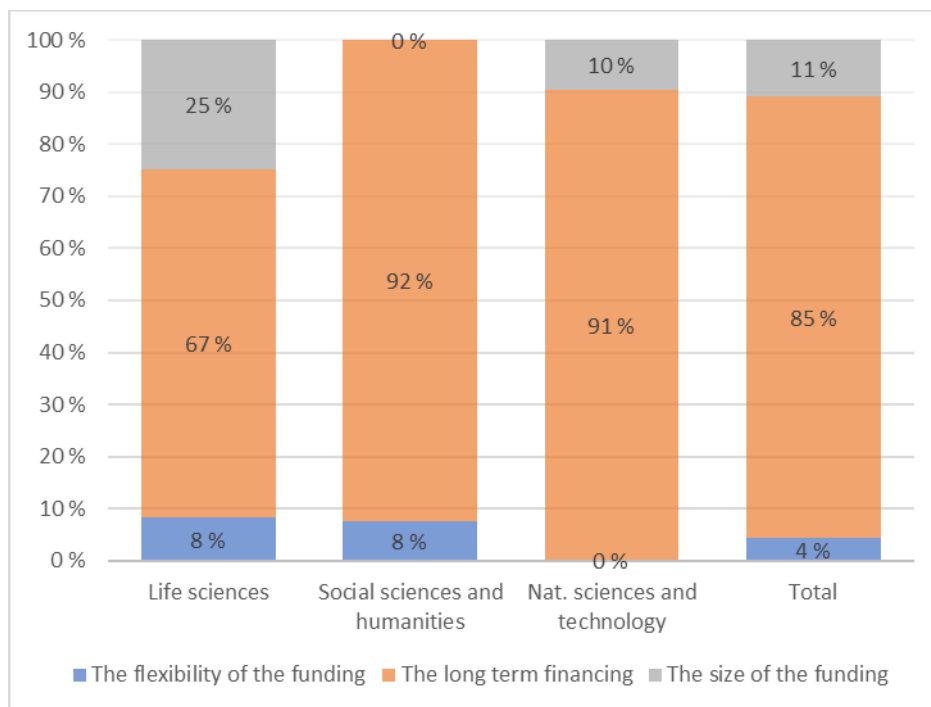


Figure 3.3 Which feature of the SFF funding is/was the most important for realising the research in the SFF? (SFF leaders N=46, Source: SFF participant and stakeholder survey Q11).

According to the majority of the participants, the SFF and its planned research had sufficient funding and the centre leader was competent (Figure below). Moreover, the majority agree or partly agree that the working environment was based on team work and sharing of ideas and research results. The SFFs within the social sciences/humanities differ a bit on these issues, probably reflecting more general characteristics of the fields: A somewhat higher proportion agree that the working environment was based on sharing of ideas and research results, a somewhat lower proportion that it was based on team work, and a higher proportion answer that they did most of their research alone. There is also a far higher proportion within the social sciences/humanities who answer that the SFF had sufficient funding (Appendix 4, Q5 by fields).

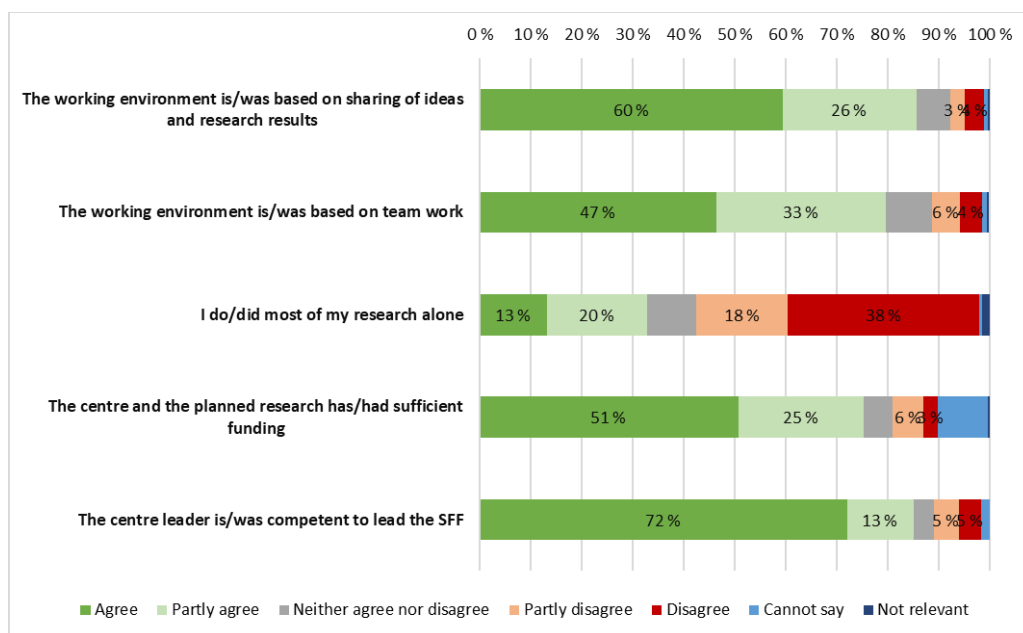


Figure 3.4 To what extent do you agree with the following statements about the SFF (N=777, Source: SFF participant survey Q5).

According to the SFF leaders, the large majority of the SFF have/have had shared physical facilities, joint scientific seminars/workshops and social arrangements (Figure below). Shared physical facilities seem somewhat more common for the SFFs within the life sciences (67% answer ‘to a high extent’), and joint social arrangements in the social sciences/humanities (84% answer ‘to a high extent’, see Appendix 4, Q10 by field).

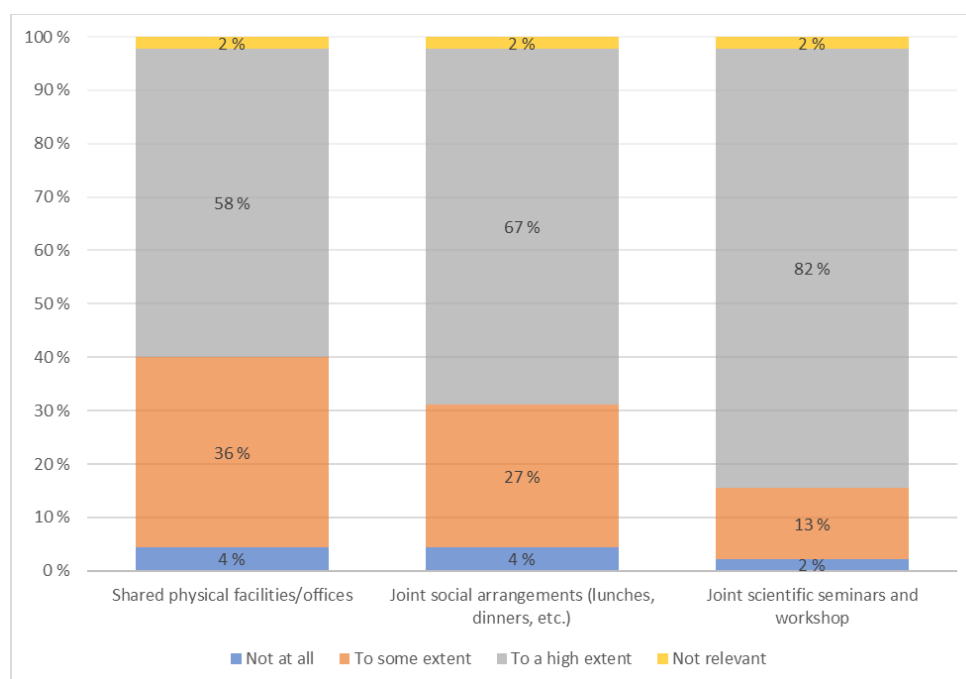


Figure 3.5 Interactions within the SFF. Please indicate to which extent the participants in the SFF has/had: (SFF leaders, N=45, Source: SFF participant and stakeholder survey Q10).

The SFFs are set up for a fixed period, and partly rely on temporary staff. Looking at the SFFs' impact on the research activities of the participants after the SFF period, we find that a large proportion of the former SFF participants build on the research from the SFF in their present research (35% to a high extent and 42% to some extent). They also have access to the competence/collaborators needed to continue the research lines of the SFF (35% to a high extent and 43% to some extent), and a large part also collaborate with the same senior researchers in Norway and abroad as during the SFF (Figure below). However, some have changed research line/topic because they found other lines/topics more interesting (47 % to some or high extent), or because they could not get funding for the SFF topic (25% to some or high extent). Those who held a postdoc position in the SFF somewhat more often indicate that they (to some or high extent) have changed their research topic/line (53% because other topics/lines were more interesting, and 31% because of lack of funding for the SFF topic, see Appendix 4, Q15 by postdoc). These are persons in temporary positions and in the beginning of their career. Some may have received multiple job offers after their postdoc fellowship and chosen something (partly) different from their SFF topic. Others may have wanted to continue with their SFF topic, but not been able to obtain a position/funding that allowed so.

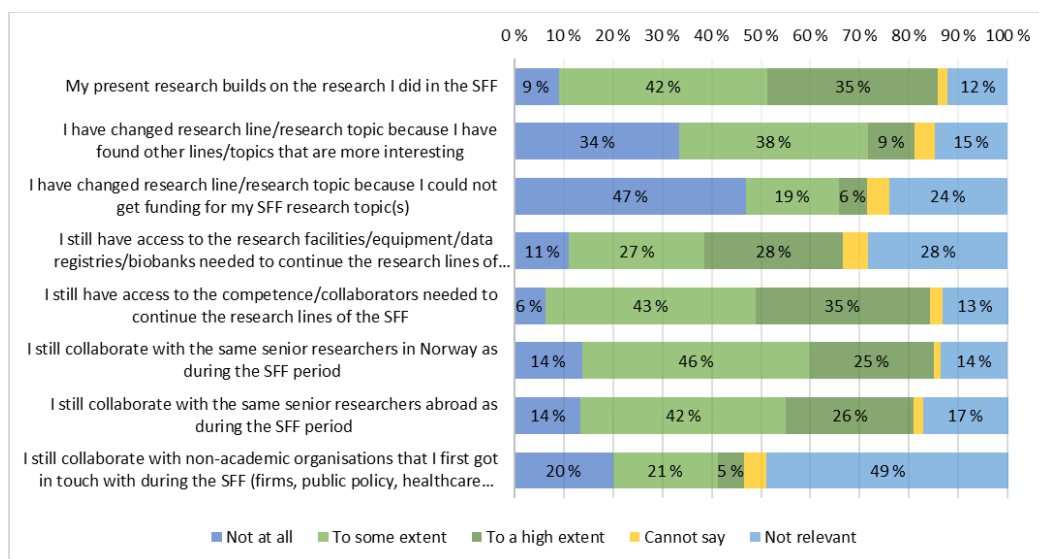


Figure 3.6 The situation after the SFF grant. Please indicate to what extent you have built on or continued the research activities of the SFF after the ending of the SFF-funding from the RCN (former SFF participants, N=409, Source: SFF participant and stakeholder survey Q15).

3.2 Interdisciplinary collaboration

The long-term and flexible SFF funding is presumed to enable interdisciplinary research. According to the participants, the SFF in most cases increased their involvement in interdisciplinary collaboration and their opportunities to draw on multiple academic fields in their research. Figures are much the same across the four SFF generations and across research areas, but slightly higher within science and technology (Appendix 4, Q3f and Q3o by field). Very few indicate that their interdisciplinary collaboration or their opportunities to draw on multiple academic fields have decreased. 19% indicate that their opportunities to draw on multiple academic fields has not changed, and 24% indicate that their interdisciplinary collaboration has not changed. These may already have been involved in much multidisciplinary research and interdisciplinary collaboration before the SFF, or their work in the SFF may not have included much interdisciplinarity. Considering the participants' indication of the level of multi-disciplinarity in their research, we assume that the latter is often the case. On average, those who indicate that their interdisciplinary collaboration or opportunities to draw on multiple fields have not changed, also indicate a lower level of multi-disciplinarity in their research, compared to those who increased their inter/multi-disciplinarity (Table A 4 in Appendix 2).

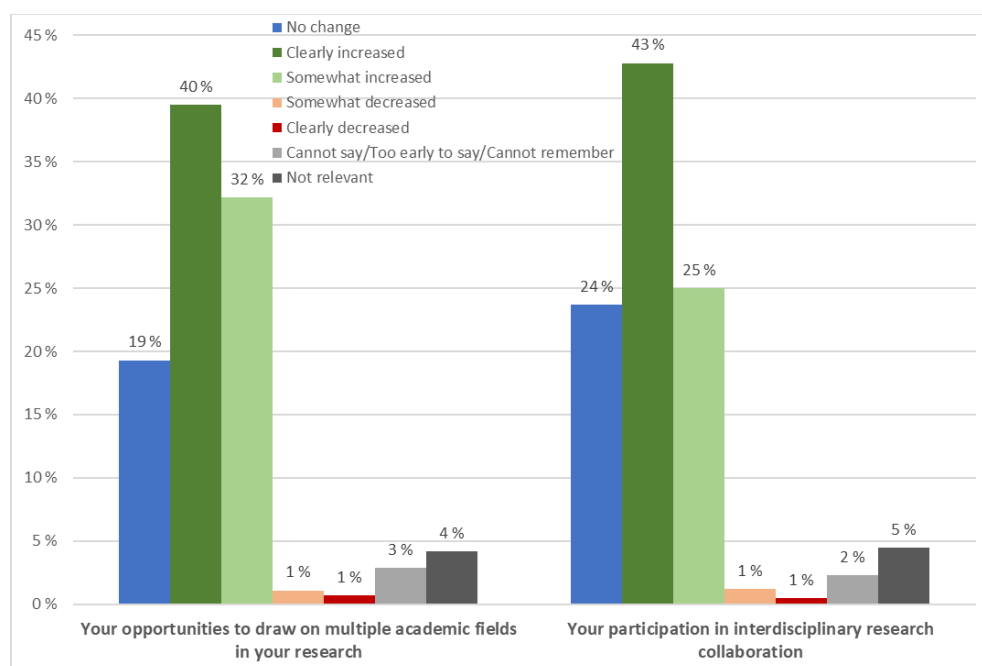


Figure 3.7 How did you experience the situation in the SFF compared to your previous situation (the time before the SFF) regarding the following issues? (N=825, Source: SFF participant survey Q3).

3.3 National and international collaboration

Overall, the SFFs seem to have spurred both national and international collaboration. A large majority of the participants (72%) report that their international research collaboration is clearly or somewhat increased, and 64% report that their national research collaboration is clearly or somewhat increased (Figure below).

The highest increase in international collaboration is found among the participants in the SFFs within the social sciences and humanities, and the highest increase in national collaboration is found among the participants in the SFFs within science and technology, whereas there is a somewhat higher proportion of no change of international collaboration within the life sciences (Appendix 4, Q3d and Q3e by field). This is in line with the bibliometric data (Sivertsen et al. 2019) where a large part of the SFFs which did not increase their co-authorship with the top 42 universities in the world, are in the life sciences. Notably, several of these were among those with much co-authorship with the top 42 universities *before* the SFF period.

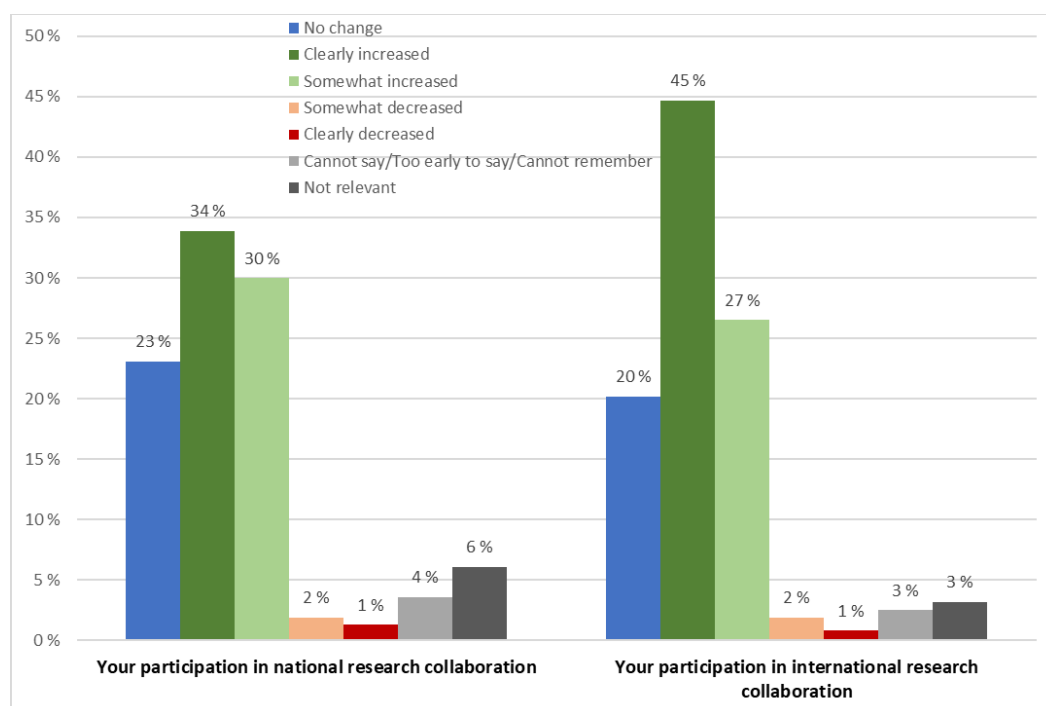


Figure 3.8 How did you experience the situation in the SFF compared to your previous situation (the time before the SFF) regarding the following issues? (N=825, Source: SFF participant survey Q3).

3.4 Summary

High level of positive impact reported: The SFF participants report a number of positive impacts from SFF participation on their research conditions and activities, foremost including increased opportunities to address new important research topics, and contributing to advancing scientific knowledge on key international research questions in their field, and moreover improved ability to attract external research grants.

Impact on participants' collaboration patterns: According to the participants, the SFF in most cases increased their involvement in interdisciplinary collaboration and their opportunities to draw on multiple academic fields in their research. Moreover, the SFFs spurred both national and international collaboration.

Facilitating working environment: According to the SFF leaders, the large majority of the SFFs have/have had shared physical facilities, joint scientific seminars/workshops and social arrangements. The majority of the SFF participants agree that the working environment was based on team work and sharing of ideas and research results, and also indicate that their SFF had sufficient funding and a competent leader.

Lasting impacts: A large proportion of the former SFF participants build on the research from the SFF in their present research. They also report to have access to

the competence/ collaborators needed to continue the research lines of the SFF, and a large part also collaborate with the same senior researchers in Norway and abroad as during the SFF.

Varieties between academic fields: Some differences between the research fields appear in the data, probably reflecting more general characteristics of the fields. Within the social sciences and humanities – where expenses apart from manpower/research time is often lower than in the other fields involved – there is a far higher proportion who find that their SFF had sufficient funding. The SFFs within the social sciences and humanities also differ a bit on the working environment issues: A somewhat higher proportion agree that the working environment was based on sharing of ideas and research results¹⁰, a somewhat lower proportion that it was based on team work, and a higher proportion answer that they did most of their research alone. Moreover, the SFFs seem to have partly different impacts on participants' collaboration patterns: The highest increase in international collaboration is found among the participants in the SFFs within the social sciences and humanities, and the highest increase in national collaboration is found among the participants in the SFFs within science and technology.

Long-term funding and new collaboration are key factors: When explaining how the SFF helped them advancing scientific knowledge on key international research questions in their field, new collaboration/new partners come up as the most frequent important factor. When asked what was the most important feature of the SFF funding for realising the research in the SFF, the large majority of the SFF leaders answered that the long-term funding was the most important.

¹⁰ And a somewhat and a lower proportion disagree or partly disagree that the working environment was based on sharing of ideas and research results.

4 Impact on the host institutions

Four generations of SFFs imply considerable experience with the instrument. In this chapter we investigate the impact of the scheme on the host institutions based on data from the survey and interviews with rector/vice rector, deans and research administrators. We chose to focus on institutions that have hosted more than one SFF, as having experience with more than one may imply institutionalisation of policies or guidelines for handling such instruments.

It is important to have in mind that since the launch of the SFF scheme, other large funding schemes have also seen the light; Centres for research-based innovation (SFI), Centre for environment-friendly energy (FME) and ERC and Horizon2020 also offer long-term funding and are perceived as attractive grants. As such, the impacts described below cannot solely be attributed to the SFF scheme.

4.1 Application phase

The SFF scheme has calls for proposals each fifth year, and the predictability is an important aspect, according to the interviewees. This makes it possible to plan the application process. The interviews show that institutions with more than one SFF (which all are universities, see Appendix 2, A3), have institutionalised local systems for different forms of support to the researchers in the application process. The range of support mechanisms differs between the institutions and are managed at the central and/or faculty level. Based on the interviews with research administrators at the universities, we have identified the following main mechanisms:

- Stimulation means (buying out time to develop the application),
- Administrative support to check if all criteria are covered
- Support to use external consultants for polishing the text
- Support for networking with potential partners or arranging workshops
- Inhouse expert panel/ peer review, may include the Faculty's scientific advisory board, former SFF leaders, deans
- Interview training for applicants in phase 2

In general, the larger institutions offer more support mechanisms than the smaller, as for the latter this is a matter of the institutions' resources. Interviewees at one of the larger institutions signalled that as a consequence of several budget cuts lately (such as the ABE-reform¹¹), they may not be able in the future to support applications to the same extent. All interviewees underlined that applications demand considerable resources – time for the researchers, but also administrative and leadership time to follow-up. In general, the work with the applications start 1,5 years before the deadline.

All hosts aim at a higher success rate in prestigious programmes like SFF in RCN and ERC, and use different strategies to achieve this. A tendency seems to be that the faculty leadership at the large institutions have become more engaged in the application process over the generations of SFFs. One reason, according to the interviewees, is that they perceive a need to encourage and motivate researchers and research groups seen as having a potential to be successful, as the application process demands a considerable amount of work. Another is that SFFs and related schemes requires considerable co-funding and administration, which makes it necessary to anchor the centres both at the department and faculty level.

It was stressed by the interviewees that all application initiatives are welcomed and the process is bottom-up driven. However, some faculties organise internal selection processes to, on the one hand, help the applicants, on the other hand to stop applications that need to mature, or which may belong in other programmes. At different stages of the application process, the institutions offer internal review processes where applicants get constructive feed-back on the proposals. At UiB, for instance, the rectorate has already dedicated 1 MNOK (more in the following year) to start the application process for SFF V, and the faculties apply on behalf of already selected initiatives. By investing more resources in selected applications, UiB aims at increasing its success rate in the scheme, said the informants. The investment also signalises, according to the informants, that the rectorate prioritises external funding.

These findings resemble other studies of processes for applying for large grants. An evaluation of a similar Swiss centre scheme found that large institutions have more resources and mechanisms in place to support the applications (Langfeldt and Borlaug 2016). For the smaller institutions, it seems rather to be an issue of having good enough research groups with critical mass to apply for an SFF grant.

The interviews further revealed that at least three of the institutions (NTNU, UiT and NMBU) have developed internal initiatives for supporting young and promising researchers. Although these researchers are not expected to apply for an SFF, they are seen, by the deans and rectors, as potential applicants in the

¹¹ Reform for de-bureaucratisation and efficiency in the public sector

future. UiT introduced thematic priorities in 2014 to address interdisciplinary research questions and stimulate cross-faculty collaboration. In 2019, UiT also introduced an internal centre scheme where research groups may apply for until NOK 30 mill over four years. The aim is to strengthen the capacity of research groups that demonstrate excellence to be successful in the competition for larger external funding. Each faculty can send in two applications, and the centres are selected based on international peer-review of the application.¹²

Another strategy is to strengthen the academic community by recruiting international researchers perceived as having the potential to achieve SFF grants and/or similar funding. Interviews revealed that at least UiB (Toppforskprogrammet) has this strategy. NTNU has Onsager fellowship which mainly target young talents.

It seems as such that since the launch of the first call, the institutions have established many internal mechanisms to support the development of application as well as to back-up young talents and attract international star scientists which may increase the chances of getting external grants.

4.2 Resources and prioritisation

Co-funding of the SFFs is not an explicit criterium for getting a centre, however, it is expected that the host institution shall contribute financially. The universities have different models for how they support the centres. Table 4.1 gives an overview.

¹² For more information, see: https://uit.no/om/enhet/aktuelt/nyhet?p_document_id=625805&p_dimension_id=88199

Table 4.1 Co-funding host institutions

Host	Total number of centres	Support from Rector	Support from Faculty/department
UiO	17	2 mnok pr year in the centre period	PhD positions, in-kind, facilities, infrastructure and administrative resources
NTNU	9	2 mnok pr year + continuously 2 PhD + 1 postdocs in the centre period	Approximately 50 % of the Rector. Facilities and infrastructure, PhD./postdocs, administrative resources may also include other in-kind.*
UiB	8	12,5% of the RCN funding to be used towards PhD positions, alteration of buildings or as cash	Postdoc and PhD positions. Varies between the faculties. Facilities, infrastructure and administrative resources
UiT	3	1/6 of the RCN funding to be used towards recruitment positions primarily and running costs	Match the funding from Rector. Infrastructures and in-kind (department).
NMBU	2	1,4 mnok pr year dedicated to administrative support + continuously 2 PhD (or postdocs) in the centre period.	Ideally a matching of the support from Rector, but has turned out to be challenging. Infrastructure, facilities.

* The Central Norway Regional Health Authority also contribute with cash to SFFs involved in translational research

As the table shows, there is considerable differences between the institutions in how they co-fund the centres. Compared to the others, Rector at NTNU dedicates considerable resources to the SFFs which is a result of a different budgeting model; the main strategic capacity is at the central level while at the other universities this is primarily at the faculty level.

In the interviews, the deans and rectors claimed that hosting an SFF implied a prioritisation by dedicating considerable resources to the SFF, i.e. office facilities, administrative resources, positions and even cash. The scheme offers, they argued, an ability to prioritise and is used as a strategic tool – also in the application phase. Some of them moreover underlined that the SFF scheme legitimates prioritisation of excellent research which is compatible with the norms, values and criteria of the academic community. The SFFs entail high prestige and are important for the branding and – for some - the self-esteem of the institution, the interviewed leaders argued. However, prioritisation has a backside, and all leaders claimed that dedicating resources to the SFF means that other research groups get less internal resources. This was seen as challenging. The emphasis on the scheme as a strategic tool is somewhat contrary to previous studies of large grants (see Section 1.1.2 and Edler et al.2014).

In infrastructure heavy fields (laboratories and equipment), having an SFF imply, according to deans, a long-term prioritisation; one concerns investing in top infrastructure, but the operation costs have also to be taken into account. While

the SFF funding in these fields often makes up a small percentage thus requiring other types of funds, some deans and rectors claimed that the grant sometimes is too large in the humanities. However, the views are split, some interviewees argued that there should be a specific SFF variant for the humanities entailing a smaller grant, others argued that the SFF scheme should continue to be the same to all fields as it offers an opportunity to address big interdisciplinary research questions. Some also underlined that the RCN and the host institutions perhaps should emphasis and encourage less infrastructure demanding fields to apply for a lower sum. According to these interviewees, it seems to be a culture for getting the upper limit of the grant.

From the survey-data we see that according to the department heads, the SFFs have some impact on the local allocation of both financial means and recruitment positions to other research lines and topics. About half of them hold that the SFF has not implied less financial means for other research lines/topics in their department, whereas 36% hold that it to some extent has done so, and 6% that it so to a high extent. Figures are a bit higher when it comes to impact on the allocation of recruitment positions in their department/research unit: 40% hold that the SFF has not implied less positions for other research lines/topics, whereas 47% hold that it to some extent has done so, and 4% that it has so to a high extent (Figure below). Looking at differences between academic fields, we find less impact within the social sciences and humanities (73% of the department heads indicate no impact), and more moderate impacts within the life sciences (none of the department heads in the life sciences indicate high impacts on financial resources or recruitment positions, Appendix 4, Q12 by field).

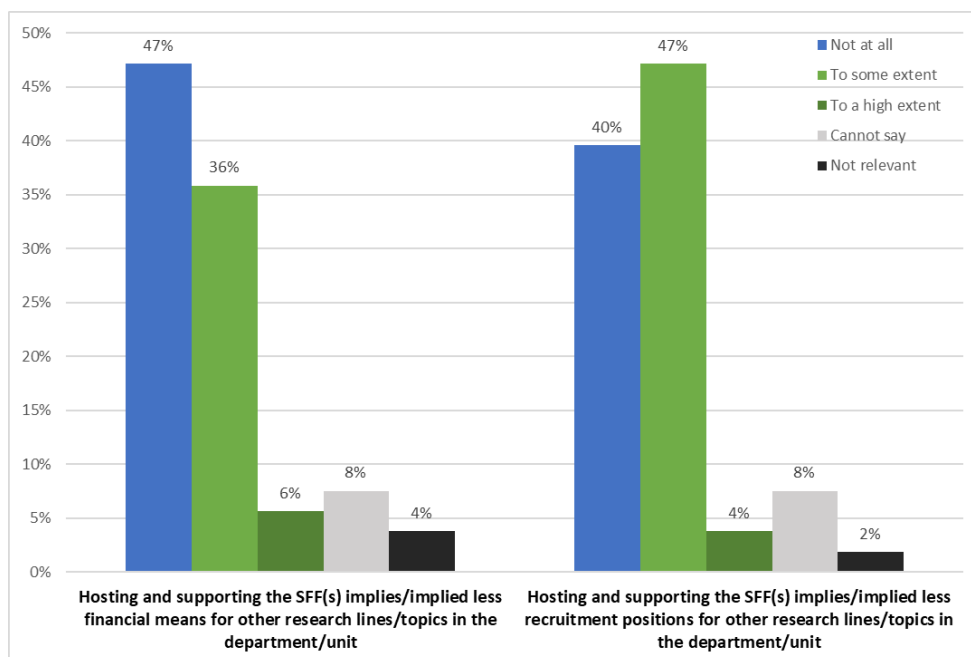


Figure 4.1 Department heads' views' on impacts on resource allocation in the host department/unit (Source: SFF participant and stakeholder survey Q12: To what extent do you agree with the following statements regarding the situation in your department during the SFF period. N=53 department heads).

When asked about the SFFs' impact on local priorities, the SFF participants and other scientific staff at the host organisations are in general positive. As would be expected, those who have participated in the SFF are more positive than those who have not. The largest difference between the two groups are found when it comes to impact on the allocation of resources within the department/unit. 39% of those who have not participated in the SFF indicate a moderate or high positive impact on resource allocation within the department/unit, whereas 69% of the SFF participants indicate such positive impacts. Moreover, 43% of other staff at the host organisations indicate negative or both negative and positive impacts, whereas 11% of the SFF participants do so. Of these, 6% of other staff and 1% of the SFF participants indicate high negative impacts (Figure below).

The large majority of both SFF participants and other staff at the host organisations find that the SFF has contributed to the building of strong research topics/research lines within the department/research units. In the survey, 82% of the participants and 68% of the other staff at the host organisations indicate high or moderate positive impacts on this item. Building one or few strong research lines within a department, may imply decreasing the department's scholarly diversity. In most cases, this does not seem to be perceived as a problem at the host departments. The SFFs' impact on the plurality of strong research topics/research lines

within the department/unit come out positively in the survey: 73% of the participants and 50% of the other staff at the host organisations indicate high or moderate positive impacts on this item, whereas 4% of the participants and 16% of the other staff indicate high or moderate negative impacts (Figure below).

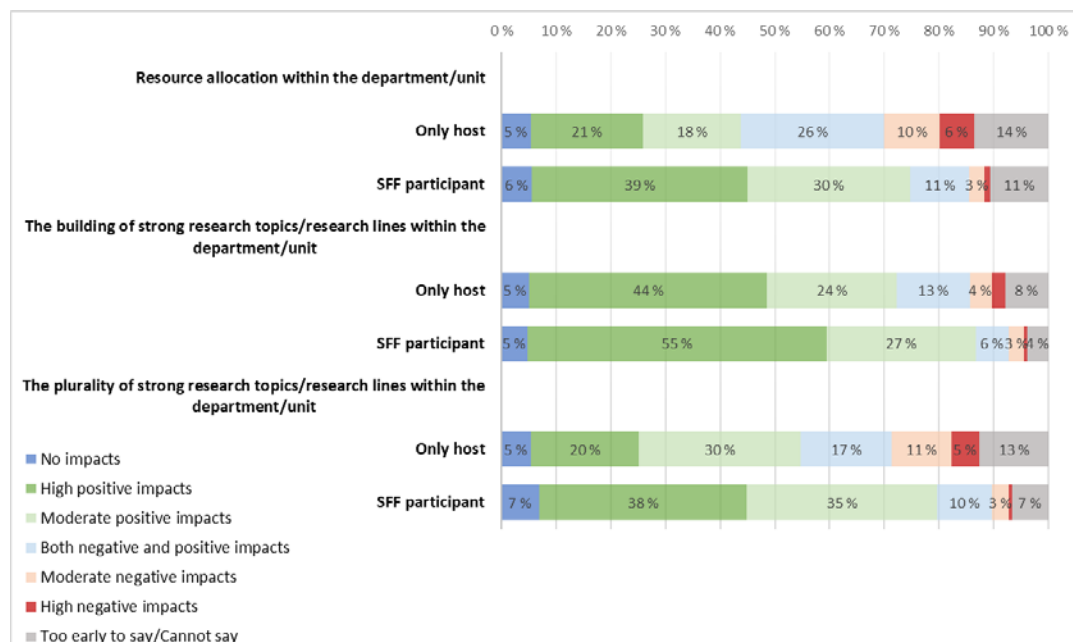


Figure 4.2 Host staff and SFF participants' views on impacts on resource allocation and priorities in the host department/unit (N=800, Source: SFF participant and stakeholder survey Q7: Based on your experiences, what kind of impacts have SFF(s) had in your department?).

Responses to these questions vary somewhat between academic fields. Within the social sciences and humanities, there seems to be a bit more split views among the staff at the host organisations not participating in the SFF, whereas within the life sciences this group more often answer 'no impacts' or 'cannot say': Within the social sciences and humanities this group more often – than those within the life sciences – indicate high positive impacts on the resource allocation within the department. They also more often – than those within the life sciences – indicate negative impacts on the plurality of strong research topics in the department (Appendix 4, Q7 host only by field).

There are also differences between host organisations. At the smaller host organisations (all those which host/have hosted only one SFF), those not participating in the SFF more often indicate high positive impacts (at all three items) than the non-participants at the larger organisations. However, only a small number of those not participating in the SFF at the smaller organisations replied to the survey, and their replies may not be representative.

4.3 Organisation and governance

According to interviews with leaders, they learnt a lot from hosting the first generation of SFFs. Several of the hosts chose to locate some of the SFFs at the faculty level or beneath rector, and this introduced unforeseen challenges related to governance of the centres, according to the interviewees. First of all, the location of the centres outside of the departments detached the researchers from the ordinary activities at the department, leaving administrative tasks and teaching obligations to the remaining researchers. This resulted in some tensions, according to the deans and rectors. Second, they underlined that it became a challenge to re-integrate the centres into the ordinary organisation structure after the termination of the SFF grant, especially SFFs which had staff that did not “fit” with the profile of the department. On this background together with political signals that SFF and similar instruments will continue in the years to come, some hosts have developed guidelines or policies for how to handle large external grants like SFF. For instance, UiO got one in the spring 2019, based on an internal mapping of centres.¹³ A clear policy – at all universities – seems to be that centres should be hosted by a department and all staff affiliated with the SFF should be the responsibility of the host department. According to the interviewees, this ensures a long-term commitment by the department also in terms of recruitment and permanent positions, and may contribute to long-term planning and perhaps facilitate the transition to not having a centre grant.

The requirements and guidelines from the RCN states that a centre shall be governed by the host institution’s governing bodies or have its own board. If the centre involves several partners and is organised as an SFF consortium, or involves staff members from several faculties, it must have its own board.¹⁴ The role of the board is mainly to ensure cooperation among the different partners and between the centre and the host institution. Several centres also have a scientific advisory board (SAB) consisting of (often) international researchers.

The interviewees claimed they have gained considerable experiences with and perspectives on the potential role and composition of the centre board. They underlined the importance of involving the department head and/or the dean in the activities of the centres through the centre board. The centre board is seen as a body for solving issues between the host and the centre. Two of the interviewees claimed that some centres perceive the board as a “necessary evil” to which they have to report, and that the board could be used more positively and actively by the centres, for instance as a partner for discussing certain choices or challenges – even academic ones.

¹³ For more information, see (in Norwegian): <https://www.uio.no/om/organisasjon/styret/moter/2019/03-12/v-sak-8-politikk-for-eksternfinansierte-sentre-ved-uio.pdf>

¹⁴ SFF III Requirements and guidelines, RCN

Collaboration between and within institutions

Hosting an SFF has several positive aspects, but may also create internal frictions at the host institutions, according to the leaders. They claimed that an SFF gives on the one hand prestige, it generates considerable activity, often attracts other external funding and releases funds from the performance-based funding system, and it is as such very attractive for the faculties and the departments to host the centres. On the other hand, hosting an SFF requires considerable resources in terms of funding and administration, but also leadership time. The benefits are seen as higher than the negative consequences. However, if several departments are involved in a centre, the issue of hosting may generate discussions between faculties and between institutions, according to the interviewees.

The rectors and deans emphasised the importance of the SFF scheme for the possibility to create *real* interdisciplinary collaboration. The scheme offers an opportunity to work on big research problems that cannot be solved by one field or a research group. But, having SFFs which spans plural faculties – crossing organisational and disciplinary borders - creates large administrative challenge, especially related to economy, both administrative and institutional leader claimed. An example used by some of the deans and rectors, was that the faculty of science and faculty of humanities at one university have very different practices for drawing up a budget which generate considerable discussions and tensions. They claimed that faculty of humanities and social sciences are more occupied by hours used for education and research, than faculties of science and life science – which are occupied by ensuring a coverage of education tasks and expenses related to infrastructure, not research time. The different practices are also a general barrier for cross-faculty collaboration and not only related to the SFFs. However, the interviewees underlined that a positive aspect of these SFFs was that they were forced to solve the challenges, and this paved way for other cross-faculty projects and lowered perhaps barriers for collaboration.

Interviewees indicated that hosting an SFF in the humanities generate more challenges in terms of education and administrative tasks, compared to other fields. Some claimed that the funding has been used for buying out from educational task. Others underlined that this was previously a common practice which has changed due to a realisation that it is important to involve at least master students in the centres – both for attracting young talents and for strengthening the interaction between education and research. However, the impression that teaching decreases when having an SFF in humanities, is also confirmed by the survey (see 2.2.). Thus, practices seem to vary between faculties and we cannot say whether there has been any change concerning involvement in teaching.

Large grants, like the SFF, have according to interviewees in the life sciences institutionalised new modes of collaboration between Regional Health

Authorities, responsible for the hospitals, and the Faculties of Life Science. As SFFs in life science often include staff from university hospitals and the university, they also function as arenas for coordination between the two organisations through establishing agreements at the institutional level, not the individual or department level and functioning as meeting arenas. Likewise, an interviewee from the research institute sector underlined the importance of large funding schemes for enhancing and institutionalising collaboration on research and education between the HEIs and the research institutes.

Co-localisation

The RCN encourages physical co-localisation of the centres. Interviewees underlined that this is now the main policy of the host institutions, as they acknowledge the value and importance of physical co-location of staff to enhance close and creative research collaboration. They further claimed that the hosts invest considerable resources in facilitating co-location and stretches far. For instance, in one case the faculty administration moved in order to give office space to an SFF. However, several of the hosts interviewees argued that they experience pressures on office areas. This is especially pronounced at the university hospitals which collaborate with the University of Oslo. According to the interviewees, old buildings with already high pressure on the areal make it challenging to find space to co-locate different research groups in one centre. At NTNU this is not seen as a challenge. Co-location of research groups is as such not only a matter of the host institution, but also involves other institutions.

Host relations and support

In the survey, the leaders of the SFFs seem generally satisfied with the SFF's relationship to the host organisation and the support provided by the host organisation. The large majority indicate that the relationship with head of department (76%) and the faculty leadership (67%), and their financial (72%) and administrative (65%) support from the host organisation are good, and less than 10% indicate that such relationships/support are bad (the remaining reply 'neither good nor bad', figure below).

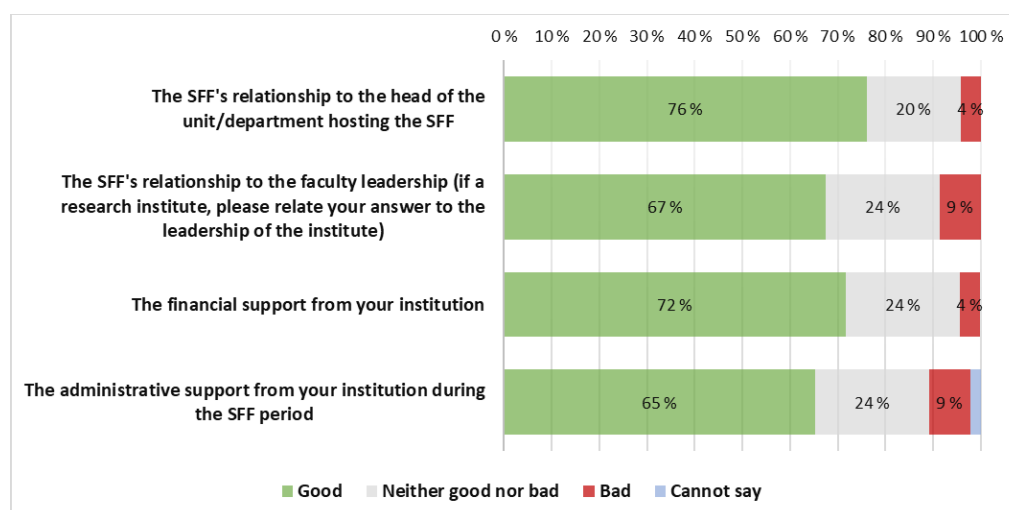


Figure 4.3 SFF leaders' views on the relations with and support from the host institution (N=46, Source: SFF participant and stakeholder survey Q9: 'Please indicate how you perceive the following').

There are some notable differences between fields of research in these replies. Within the social sciences and humanities, good relations to the head of department and faculty leadership seem far less common. Here 50% indicate a good relationship with the head of department, compared to 92% within the life sciences and 85% within science and technology. Moreover, 35% indicate a good relationship with the faculty leadership in the social sciences and humanities, compared to 67% within the life sciences and 90% within science and technology. As much as 21% within the social sciences and humanities indicate a bad relationship with the faculty leadership, compared to 8% within the life sciences and 0% within science and technology (Appendix 4, Q9 by field).

When it comes to financial and administrative support from the host organisation, it is the SFF leaders within the life sciences who appear least satisfied. 58% within the life sciences and 85% within science and technology characterise the financial support as good. Moreover, 17% within the life sciences characterise the administrative support as bad (Appendix 4, Q9 by field).

4.4 Prestige and research abilities

Building strong research lines involves recruitment, preferably of highly qualified staff, i.e. persons who may have multiple job offers to choose between. Hence, the international prestige of the department may be important. According to both the SFF participants and other scientific staff at the host departments, the SFFs have had positive impacts on both the international prestige of the host departments and their ability to attract top qualified staff. 78% of those who have not participated in the SFF indicate a moderate or high positive impact on the international

prestige of department/unit, whereas 88% of the SFF participants indicate such positive impacts. As for the international prestige of the groups involved in the SFF, the total figures for positive impacts are much the same, but with larger proportions indicating 'high positive impacts' (Figure below).

Moreover, the respondents report positive impacts on recruitment of top qualified staff to the topics of the SFF: 73% of those who have not participated in the SFF and 84% of the SFF participants indicate such positive impacts. The large majority also find that the SFF has had positive impacts on the department's ability to attract interesting speakers to seminars and lectures.

Views are more mixed when it comes to impact on the recruitment of top qualified staff to other research topics in the department and the overall recruitment to the department. A substantial part of the respondents indicate that the SFF has had no impact on the recruitment of top qualified staff to other research topics in the department (21% of those who have not participated in the SFF and 18% of the SFF participants). Moreover, 11% of those who have not participated in the SFF indicate that it has had negative impacts on recruitment to other fields, and another 14% that it has had both positive and negative impacts. Still, as much as 52% of the SFF participants and 35% of the other staff members indicate positive impacts on the recruitment of top qualified staff to other research topics in the department (Figure below).

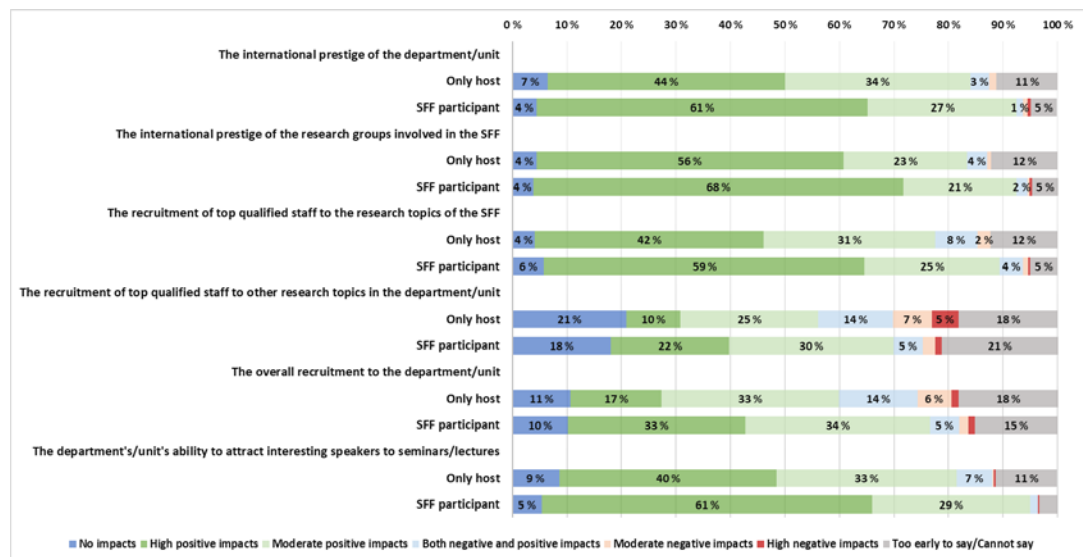


Figure 4.4 Host staff and SFF participants' views on impacts on prestige and re-recruitment in the host department/unit (N=800, Source: SFF participant and stakeholder survey Q7: Based on your experiences, what kind of impacts have SFF(s) had in your department?).

Again, within the social sciences and humanities we find more split views among staff members at the host organisation not participating in the SFF, than

we find in (in the similar group of ‘non-SFF-participants’) the other fields: They more often indicate high positive impacts on the recruitment to other research topics in the host department, and also more often negative impacts (Appendix 4, Q7 host only by field).

The positive impact of the SFFs on the hosts was also emphasised in the interviews. Rectors and deans claimed that the SFFs have contributed to change the research culture at the institutions – as one said: “it is now allowed to talk about excellence”. SFFs are seen as ‘lighthouses’ by the interviewees. They claimed that successful centres have a lot of activities – internal, but also directed towards an external audience, and they serve as good examples of how to organise and initiate research activities. Some also underlined that the SFFs are inspiring and contribute to increased ambitions in the surrounding environments.

That being said, some of the deans and rectors meant that the SFFs to a large extent could contribute to innovation in policies on gender and the support of younger researchers. They claimed the SFFs had the resources and the time to make a difference on this matter and go in front as good examples. By this, the leaders implied that SFFs should be given larger responsibility to systematically develop the career of young researchers and initiatives for increased gender balance.

The department’s research abilities

According to both the SFF participants and other scientific staff at the host departments, the SFFs have had positive impacts on the department’s ability to produce reliable/robust research results and to address key scientific challenges, as well as important societal challenges. 68% of those who have not participated in the SFF indicate a moderate or high positive impact on the ability to produce reliable/robust results, whereas 80% of the SFF participants indicate such positive impacts. Moreover, 65% of those who have not participated in the SFF and 83% of the SFF participants indicate a moderate or high positive impact on the ability to address key scientific challenges. As for the ability to address important societal challenges, the figures are somewhat lower. Still, 38% of those who have not participated in the SFF and 64% of the SFF participants indicate (moderate or high) positive impacts on the department’s ability to address important societal challenges (Figure below).

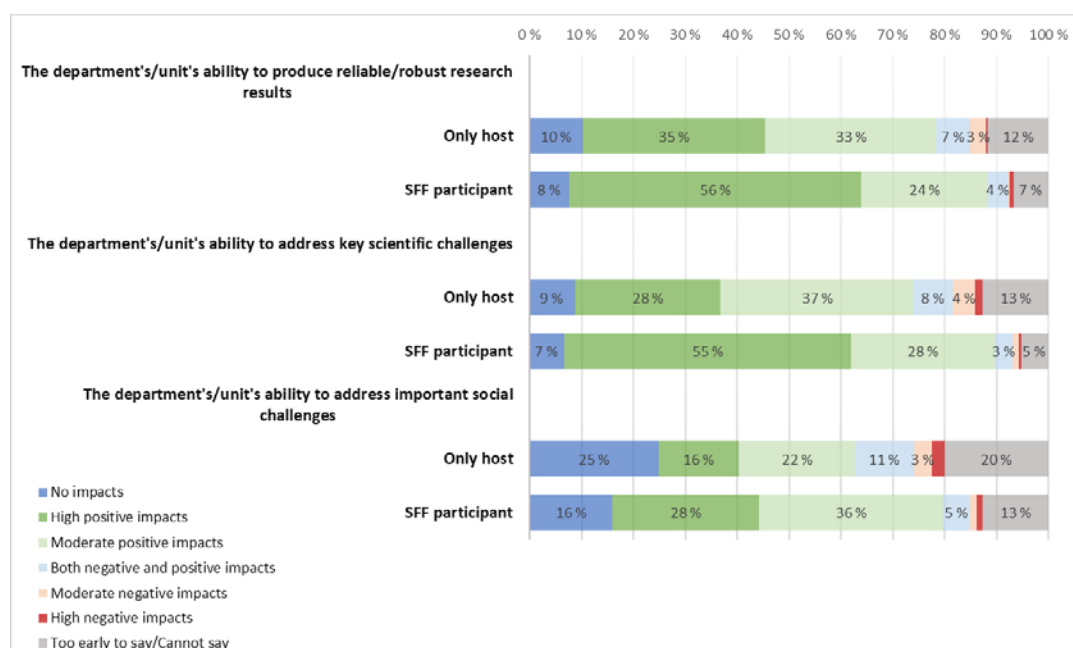


Figure 4.5 Host staff and SFF participants' views on impacts on research abilities in the host department/unit (N=800, Source: SFF participant and stakeholder survey Q7: Based on your experiences, what kind of impacts have SFF(s) had in your department?).

The responses to the questions about the SFF's impacts on the research abilities in the host department/unit vary somewhat between academic fields. Also here, the views of those who did not participate in the SFF are more split among those within the social sciences and humanities, and these respondents indicate more negative impacts than those in the other fields. The most positive views are found concerning the SFFs within the life sciences. For these SFFs there are very few that indicate any negative impacts on research abilities, and also a smaller proportion that indicate no impacts (Appendix 4, Q7 host only by field).

4.5 Policies for exit

The centres are funded for ten years. The continuation of the centres after the termination of the SFF grant has been up for debate. In terms of applying for a new centre, RCN expects a renewal and not a continuation of an existing centre, but no one is excluded from applying.¹⁵ According to the deans and rectors, there are large field differences in terms of what is needed for continuing the research. In some fields within life science, 10 years funding is considered as relatively short time.

¹⁵ SFF-III Informasjon til søkerne (2011)

Host institutions have the responsibility for the centres after the termination of the SFF funding. They have different policies for this, and table 4.2 gives an overview of the universities' policies.

Table 4.2 Host institutions' exit policy

Host	Exit policy
UiO	Had previously a policy of granting centres 2 mnok each year. This skewed funding from social science and humanities to life science and science, and was therefore stopped. The faculty has the responsibility; hence support may vary. Expectation that the research activity should be self-sustained. Policy for SFFs and similar instruments established in 2019.
NTNU	Expect the research groups to be self-sustainable. Takes responsibility for technical and administrative personnel.
UiB	Expect the research groups to be self-sustainable. Potential support depends on the performance of the individual centres.
UiT	Policy for exit since 2013. The SFFs may continue as a research group and apply to the university board for "transitional funding" – three PhD positions from Rector and three from the faculty. Adjustments can be made based on the distinctive centres
NMBU	NMBU considers the possibility for the further granting of each Centre. A continuation is based on an external evaluation, and the decision is made by the host faculty and partners and is time-limited.

Source: available documents and interviews with research administrators.

As the table shows, only UiT has a policy which include funding for PhD positions. Although both of UiT's former SFFs got funding, the informants and available documentation underline that each centre will be treated individually, and that the applications for transitional funding from the research groups/centres will be assessed according to criteria like scientific publications, external funding, research training and recruitment, awards and future plans. The argument for institutional funding is that it is important to ensure the continuation of the competence developed in the centre.

At the other institutions the main policy is that the centres shall be self-sustained when the SFF funding ends. Still, it is not a 'hands off' process. The institutions have, as shown above, invested considerable resources in the SFFs and they are interested in sustaining further research activity, according to the deans and rectors. The institutions may therefore support the research activity in various ways, but not the centre as such. However, the interviewees underlined that

further support is conditioned upon the perceived success of the centres or the research groups and therefore they do not have one common policy for all centres.

According to the deans and rectors, there were several challenges when the funding of SFF I stopped. Keeping researchers was and is a key challenge because of, amongst others, limited permanent positions. The interviewees claimed it is now more common to use recruitment strategically for ensuring an 'afterlife' of the SFFs. Again, there are field differences in how this is handled. Interviewees in life science emphasised that they cannot afford to hire staff from the SFF unless they have competencies that can be used in teaching. The link between education and research is strong and ensuring high quality medical education is seen as being the most important. This limit the possibility for recruiting from the SFF and was seen as a challenge.

In the survey we asked department heads about the situation after the termination of the SFF grant. As Figure 4.6 shows, 68% claim that the institution ensure further support of the SFF (to a high or some extent). However, many of the department heads answer that they have limited possibilities for ensuring the continuation of the SFF research (23% to a high extent and 36% to some extent). This may indicate that the department heads have limited strategic capacity. Maintaining important personnel, on the hand, seem to be more of a minor challenge – 27% answers not at all, 31% to some extent and 14% to a high extent.

The responses vary between the academic fields. Department heads in the life sciences seem to experience more limited possibilities to ensure the continuation of the research in the SFF than social sciences/humanities and science/technology, as also shown above. Department heads in the science and technology face less challenges in keeping important personnel compared to the two others Appendix 4, Q13 by field.

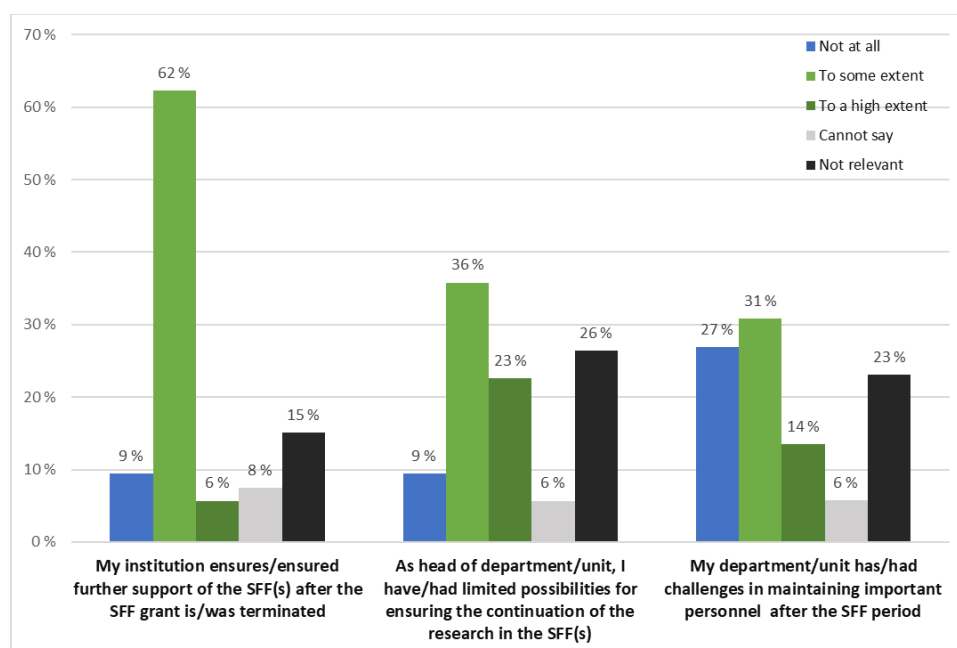


Figure 4.6 Department heads' views on the situation after the SFF period (Source: SFF participant and stakeholder survey Q13: To what extent do you agree with the following statements regarding the situation in your department after the SFF period?, N=53 department heads).

The deans and rectors underlined that exit is not an easy issue, but they acknowledge that RCN wants the institutions to take responsibility. Although the common policy is that the centres shall be self-sustained when the grant ends, some of the interviewees emphasised that this may be more challenging in some fields than others, which also goes for the whole research system. They claimed that in parts of the humanities and the social sciences the possibilities for external funding is fewer compared to the other fields.

4.6 Summary

Four generations of SFF have contributed to considerable learning at the host institution in terms of funding, organisation and governance of the SFFs.

Development of support mechanisms and internal instruments: The SFF scheme has contributed to the development of internal systems and mechanisms for supporting applications for large grants, and guidelines for how grants should be handled. Predictable calls imply that the work with the proposals starts early. The larger institutions offer a broader set of support mechanisms compared to the smaller. To enhance the success rate on external grants some of the institutions (both large and small) have developed internal instrument which support young

talents, strengthen the capacity of research groups and schemes for recruiting international researchers.

Integration of the centres in the organisation structure: Many of the first generation of SFFs were located at the central or faculty level, which generated challenges for interactions and integration with the departments. A general policy seems now to be that in order to integrate the SFFs into the plans and strategies of the host institutions and to ensure a commitment from the host, the centres are located at the department level.

The host institutions invest considerable resources: Interviewees underlined that the SFFs are important to the host institutions. An SFF signalises prestige and high quality and the hosts invest considerable resources – funding, time, infrastructure and office facilities, to ensure the centres success. The scheme has also contributed to professionalise and institutionalise the relationship between partner organisations – especially the health authorities and universities and universities and research institutes.

Host relations differ between fields: The SFF leaders seem generally satisfied with the relationship to the host organisation and the support provided by the host organisation. The large majority indicate a good relationship with head of department and the faculty leadership, as well as good financial and administrative support from the host organisation. Still, there are some notable differences between fields at this point: a large part of those who do not have good relationships to the head of department or faculty leadership are within the social sciences and humanities, whereas a large part of those who do not have good financial and administrative support from the host organisation, are within the life sciences.

Mixed impact on and from local prioritisation: According to the department heads, the SFFs in some cases impact the local allocation of financial means and recruitment positions to other research lines and topics. Whereas about half of the department heads indicate that the SFF has not implied less financial means and/or recruitment positions for other research lines/topics in their department, the other half indicate that it (to some or a high extent) has implied less financial means/recruitment positions for the other groups. The large majority of the SFF participants and a large share of other scientific staff at the host organisations perceive the SFF's impact on the allocation of resources within their department/unit as positive. Only 1% of the participants and 6% of the other staff indicate *high* negative impacts on the resource allocation within the department.

Positive impacts on local research abilities, prestige and recruitment: Interviewees emphasised that the SFFs have contributed to a cultural change at the institutions where research quality has become important and academic ambitions have increased. The SFFs are lighthouses and serve as a model for others. The long-term funding allows for cross-disciplinary collaboration. The large majority of both SFF

participants and other staff at the host departments found that the SFF has contributed to building strong research topics/research lines within the department/research units. Building one or few strong research lines within a department, may imply less resources for other research. In most cases, this is not perceived as decreasing the plurality of strong research topics/research lines within the department/unit. Moreover, both the SFF participants and other scientific staff at the host departments, found that the SFFs have had positive impacts on the international prestige of the host department/unit and its ability to attract top qualified staff. They also found that the SFFs have had positive impacts on the department's ability to produce reliable/robust research results and to address key scientific challenges, as well as important societal challenges.

Exit is a difficult issue: The institutions had a steep learning curve with the first generations of SFFs, and some experienced considerable tensions and challenges when the grant ended. A general policy seems now to be that the centres shall be self-sustained when the SFF-grant is terminated. Recruitment is also used more strategically to ensure a continuation of the research in the centres. However, the institutions adapt their support to the needs of the individual centres – if they see that it may have an added value.

5 Interactions and impact on society outside academia

The main emphasis of the SFF scheme has been to increase the scientific impact of Norwegian research, and societal impact has to a little extent been emphasised. This has been the objective of other funding schemes such as Centre for research-based innovation (SFI) and Centre for environmental-friendly research (FME). Despite this division of aims between the schemes, there is a general expectation that investments in research benefits society. In this chapter we investigate the scheme's impact on society outside academia through document studies and the survey to the SFF participants and stakeholders.

5.1 Interaction with user groups / the public

5.1.1 Analysis of interactions reported to the RCN (centres' annual and final reports)

As described in Section 1.2.1, we have mapped and analysed the centres' (SFFI-SFFIII) different modes of interaction based on what the centres have reported in their annual and final reports to the RCN. The centres are very heterogenous and we ended up mapping 13 different modes of interactions. For analytical purposes we reduced these to six main modes, and these are:

Main modes	Includes
Policy	Consultancy, advisory work
Contract research	Contract and joint research with non-academic partners
Networks	Networking activities with non-academic actors
Teaching	Bachelor and master level
Commercialisation	Patents, spin-offs, products, services, methods and monetary partners
Dissemination	Informal advice, lectures for the community, communication activities

The number of modes varies between the different scientific fields and the centres in the field category. Based on the mapping, we assigned a score (0-3) on each mode, and added this up to a total score on interactions for each centre (see 1.2.1 for a description). For instance, dissemination includes both lectures for the community, informal advising and communication activities. Achieving a score of 3 implied having dedicated considerable attention to one or all of these types of interactions and taken own initiative to reach out, not only being invited. Likewise, for teaching all centres seem to be involved in this– at least to some extent, and in order to achieve a score of 3 they must have developed a new course or a programme. The interaction indicator measures as such both breadth and depth of different interactions.

Analysis of the findings are based on the centres' main field of research i.e. social sciences and humanities, life science and science and technology, the same categories used in the analysis of the survey data. Although there are great differences between the centres within the field categories, we also see some similarities in modes of interactions compared to the other fields. The figure (5.1) below shows that the fields differ in their modes of interaction.

In the *social sciences and humanities* we observe that the main modes of interactions are policy, teaching, dissemination and commercialisation - here mainly involving monetary partners. The centres' total scores vary between two and eight points each, with somewhat different profiles – all work in close interaction with policymakers and engage considerably in dissemination activities, but differ in terms of teaching activities. There are neither clear differences between the humanities and social science centres, nor between the host institutions. Figure 5.1 shows the average score for each mode of interactions in the three fields, and indicates, not surprisingly, that dissemination is the most prominent mode in the social sciences and humanities.

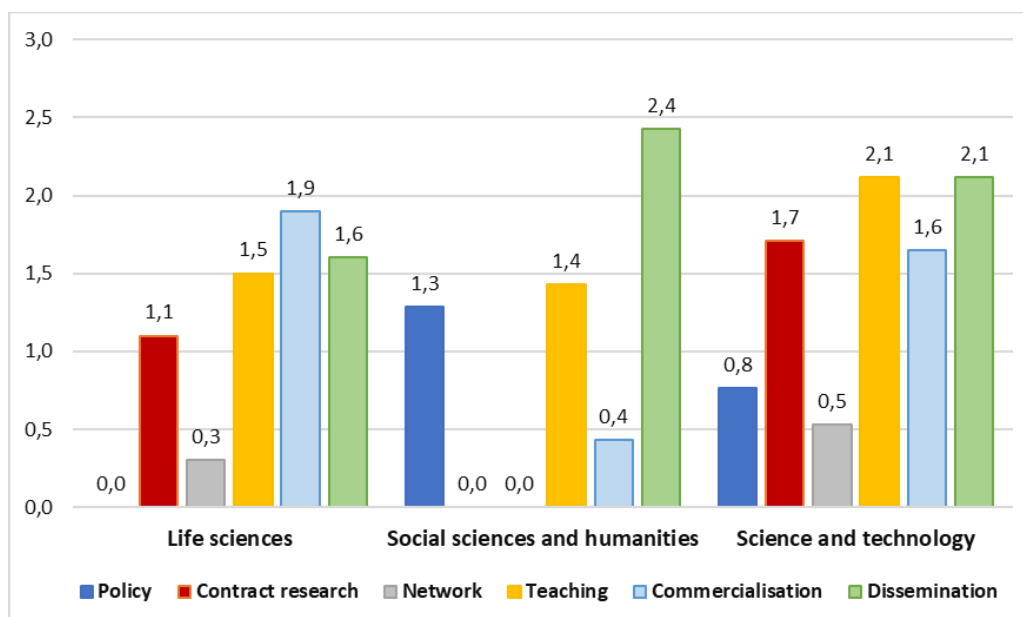


Figure 5.1 Amount of reported interactions: Average score for each of mode of interaction by field.

Compared to social sciences/humanities, *science and technology* SFFs engage in all modes, but there is great variation between the centres in this field as well. None of the centres engage in all modes, but all in more than one. They engage most in teaching and dissemination. The lowest total score is 3 and the highest is 15.

Like the social sciences/humanities, *life science* centres do not engage in all modes – for instance policy influence has not been emphasised in the documents from the centre. Their main mode of interaction is commercialisation – primarily patents and spin-offs, and some centres have contributed to several patents. Several also report involvement in product development, new methods and services.

We compared the three generations and found no specific differences, the same apply for host institutions – e.g. there is great variation in the centres hosted by the University of Oslo.

The mapping of the centres further showed that several of the them have employed administrative staff with competence in science communication, or they had research staff with this as a dedicated task. This indicates that reaching out and being visible is seen as an important task. Again, there seem to be no significant differences between fields or host institutions on this matter.

These findings echo earlier investigations from a census survey to all tenured scientific staff members in Norwegian universities and colleges (Thune et al. 2014). The SFF picture emerging from the analysis above is interesting because it confirms a number of earlier findings regarding differences (between and within disciplines and institutions). Although the numbers are not directly comparable,

the analysis also indicates that SFFs are not more “ivory towers” than what is seen in the research landscape surrounding them, perhaps on the contrary. They seem in particular to be more active in commercialisation than academic researchers in general, but this could be because some SFFs are found in more applied research environments like hospitals and research institutes.

5.1.2 Interactions reported in survey to participants

To elaborate this further, we have data from the SFF survey on how the participants perceive the impact of the SFF on their research dissemination and knowledge transfer activities, on the host department’s interaction with society outside academia, as well as continued collaboration with non-academic organisations after the termination of the SFF grant.

A substantial part of the SFF participants report increased involvement in knowledge transfer activities and research dissemination outside academia resulting from the SFF. 37% report that their knowledge transfer activities are clearly or somewhat increased and 43% report that their research dissemination outside academia is increased. The remaining answer that there is no change or they find the questions not relevant/cannot answer, while 2-4% answer that it has decreased (Figure below). The increase in knowledge transfer activities is somewhat higher within the life sciences than within the other fields: 20% within the life sciences indicate a clear increase and another 26% some increase (Appendix 4, Q3 by field).

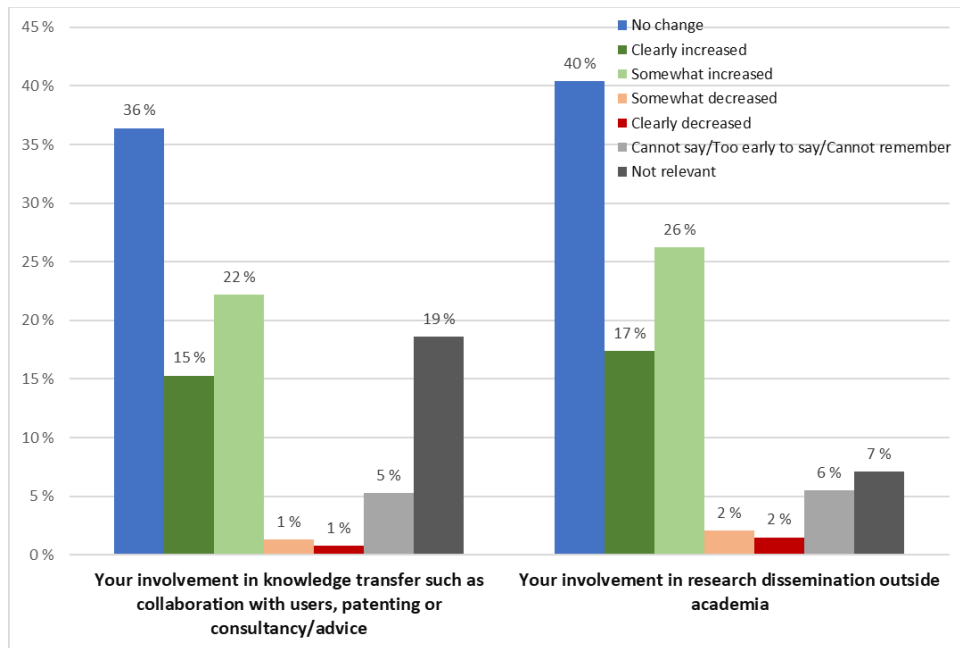


Figure 5.2 How did you experience the situation in the SFF compared to your previous situation (the time before the SFF) regarding the following issues? (N=825, Source: SFF participant survey Q3).

As for the PhD fellows in the SFFs, a substantial part indicate positive impacts on their opportunities to collaborate with users outside academia (33%), research dissemination outside academia (33%) or knowledge transfer activities (22%, see Figure 2.1 in Chapter 2).

Moreover, the SFF participants and other staff at the host departments indicate positive impacts on the departments' interaction with society outside academia. 69% of the SFF participants and 53% of the other staff indicate positive impacts on this topic. The difference between the two groups is foremost on the share of *high* positive impacts, where the SFF participants occur as far more positive than the other staff members (Figure below).

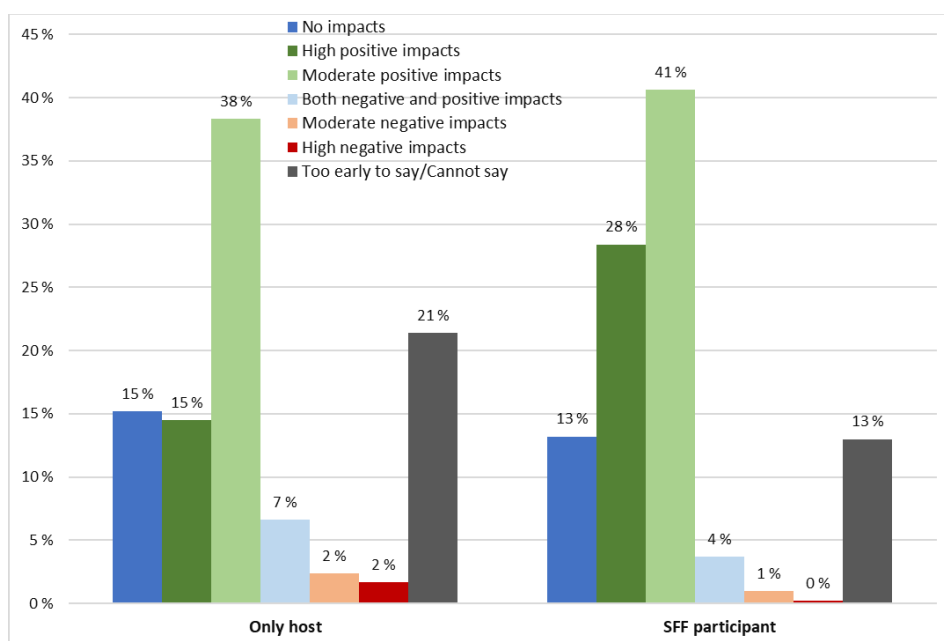


Figure 5.3 ‘The department’s interaction with society outside academia’. Host staff and SFF participants replies to ‘Based on your experiences, what kind of impacts have SFF(s) had in your department?’ (N=783, Source: SFF participant and stakeholder survey Q7).

There is also some indication of enduring impacts on individual researchers’ collaborations outside academia. Of the former SFF participants for whom it is relevant, a substantial part indicates that they to some extent still collaborate with non-academic organisations that they first got in touch with during the SFF (see Figure 3.6 in Chapter 3).

5.2 Visibility and goodwill outside academia

According to the SFF participants, the centre leaders are generally good at promoting the research from the SFF in society. 59% of the participants agree that the centre leaders are/were good at promoting the research from the SFF in society, and other 18% partly agree. The figures are positive across fields, and slightly higher within the social sciences and humanities (Figure 5.3).

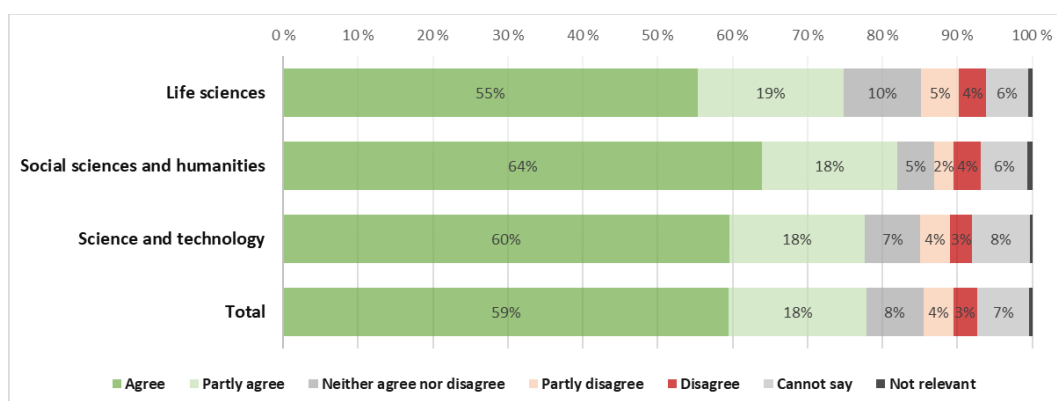


Figure 5.3. SFF participants' opinions on 'The centre leader is/was good at promoting the SFF in society' (N=777, Source: SFF participant and stakeholder survey Q5: To what extent do you agree with the following statements about the SFF).

Furthermore, a large part of the SFF participants and other staff at the host organisations find that the SFF has had positive impact on the department's support/goodwill from outside academia. Again, the SFF participants are much more positive than the other staff (Figure 5.4). There are also some field differences among staff members not participating in the SFF which indicate a more positive attitude at the host organisations towards the SFFs in the life sciences and somewhat more mixed attitudes in the social sciences and humanities, with science and technology in between: Within the life sciences staff members not participating in the SFF appear more positive than in the other fields (24% indicating high positive impacts and 37% indicating moderate positive impacts), whereas the most negative 'non-SFF-participants' appear in the social sciences and humanities: All those who indicate 'high negative impacts', and half of those who indicate 'moderate negative impacts' on the department's support/goodwill from outside academia are in social sciences and humanities (Appendix 4, Q7 host only by field).

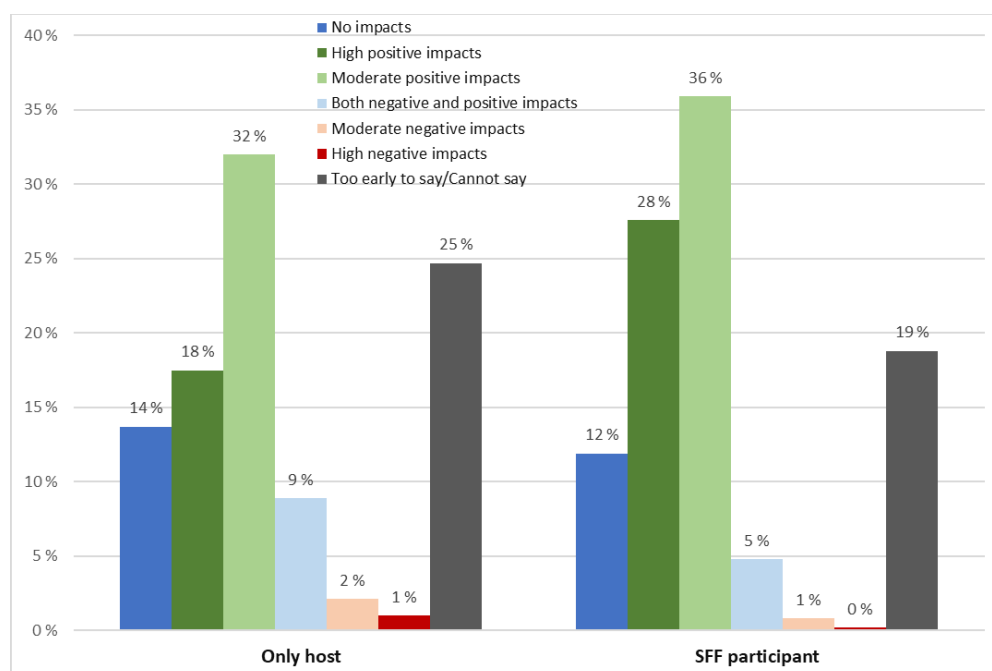


Figure 5.4 ‘The department's support/goodwill from outside academia’. Host staff and SFF participants’ replies to ‘Based on your experiences, what kind of impacts have SFF(s) had in your department?’ (N=787, Source: SFF participant and stakeholder survey Q7).

5.3 Impact outside academia

The first three generations of SFFs were encouraged to come up with examples of societal impact, and about half of them submitted societal impact cases following a template from the Research Council of Norway that has also been used in recent evaluations. The template asks for a summary of the impact, a description of the research behind it, a description of the impact and scientific and non-scientific sources for corroboration. The following contains a general analysis of what these societal impact cases tell us.

There is a huge breadth in the types and pathways of impact described in the cases, ranging from the use of research in teaching materials and in public events to commercialisation processes and changed policies. Some centres are clearly anchored in a strong tradition for research dissemination and engagement with particular groups or sectors in society such as schools/pupils, specific healthcare sectors/patient groups, NGOs or museums, and they have used these contacts to disseminate research results to specific users or the general public. Other SFFs are based on strong traditions for industry collaboration or expert advice to policy, which is then reflected in their pathways. For some of the industry-oriented centres the use of their results in industry seems like such a natural part of their work

process that it almost becomes difficult to document it. Some cases document how the SFF did a lot of extra work to ensure that its research reached a target group outside of academia, while other cases demonstrate that impact processes were set into motion through core activities like scientific publishing and wider dissemination.

Some of the centres have submitted several very different examples to demonstrate that they have made distinct forms of societal impact. There is a slight tendency that the ones with a more applied profile have put a lot of emphasis on describing their scientific excellence in the societal impact case template, while the ones with a very strong basic research profile have put a lot of emphasis on – or submitted several examples of – their societal contributions.

In a strict sense, many of the examples are not of impact at all, if we define this term as referring to broad societal effects rather than direct outcomes and uptake of research results. Most of the cases describe how the research was picked up in a policy report, transferred to a spin-off company, used as teaching material and so on – but not what happened next: whether the policy was changed, if the spin-off firm succeeded, what the students/pupils did with their new knowledge. This is probably natural – many of the examples are too recent to discuss wider impacts in a meaningful way, and documenting second-order effects is extremely challenging or even unrealistic. A few of the cases do not describe uptake either but express an optimism that the research could have great societal benefits sometime in the future, and that the scientific work seems to have made those benefits somewhat more certain. Again, this dimension demonstrates the large difference between the SFFs: some of them work in applied areas where the time to impact rather than uptake or dissemination is shorter.

The cases show that the SFFs generally tie their societal contributions to the work they have done that has been particularly original. For the researchers this novelty is what creates the potential for societal impact – when the new results are picked up by non-academic organisations. All the societal impact cases contain references to scientific publications in leading journals.

Overall, the cases give a fair description of the societal impact (or at least how the research was picked up by or disseminated to non-research actors), and they give a detailed description of the research itself. There is a lot more variation in how much detail the link between the impact and the research is described.

In particular, it is hard to see how the centre of excellence itself made a difference for the impact. Some cases do not mention the SFF at all, while others explicitly mention other projects that either involved some of the SFF researchers or were acquired during or after the SFF period. As such, the attribution of societal impact to the SFF itself or its added value is hard to see. This is not necessarily because there is no added value but perhaps because the template did not

explicitly ask for descriptions and documentation of this. It is also interesting how some of the most concrete and advanced examples of impact (in industry and on policy) are tied also to commissioned work from policy organisations or technologies developed by firms and introduced in the SFF.

We interpret these findings as indicating how the centres become huge research environments that attract experts and extra funding and projects – and the impact is tied to this collective of people and projects rather than the SFF itself, although the latter may be an important catalyst. Many of the cases document their societal impact by showing how the results in question led to funding from more applied sources (or in some cases, from the ERC).

It is also interesting how many of the impact cases discuss individuals at length – more than just listing the relevant personnel at the beginning. This is tied to several processes; in some cases, a specific individual (or a few of them) made an extraordinary effort to set the impact process in motion; in other cases, specific individuals had been given roles as expert advisors in policy organisations. It was not clear whether this was the result of the SFF and its research or whether they were already engaged in expert advisory roles before the SFF (the cases indicate probably a bit of both).

Many of the societal impacts are truly global, and this does not seem to follow distinctions between disciplines or similar. There are examples of engagement with citizens, healthcare personnel and education professionals in places such as India, Mexico, Ethiopia – and Norway, of course. The policy-oriented case more often discuss uptake among international organisations like the World Bank, WHO and IPCC rather than Norwegian organisations. It is also noteworthy how the communication and dissemination activities have become more professional in the latest SFFs. Their impact cases often contain very specific numbers about how many times a research result was reported in the press, how many followers a Facebook page and similar, and they report large-scale dissemination like popular books and movies.

The RCN has also performed evaluations of the humanities (2017) and social sciences (2018). As part of the evaluations, the institutions delivered societal impact cases. Out of seven SFFs in the social sciences and humanities, we found three involved in impact cases in these evaluations. Hence, the SFFs have contributed to impact cases also in other contexts.

5.4 Summary

Modes of interaction varies between fields and centres: A document-based mapping of modes of interactions in the three first generations of SFFs shows great variation between the centres and the fields. We find distinct field patterns; in social sciences and humanities dissemination is the most common mode of interaction; in life science commercialisation and in science and technology teaching and dissemination. Science and technology SFFs engage in more modes of interaction compared to the two other fields. Notably, in science and technology few centres are relatively introvert, while the majority engage in a range of interactions. In the life sciences it is the opposite – some centres engage to a large extent, others relatively little, and in social sciences and humanities the differences between the centres are minor.

SFF participants report some increase in interaction with society: Even if not key aims of the SFF schemes, a substantial part of the SFF participants find that the SFF has increased their interaction with society, in terms of involvement in knowledge transfer activities and/or research dissemination outside academia (about 40% report an increase, and about 40% report no change). Moreover, both SFF participants and other staff at the host departments indicate positive impacts on the departments' interaction with society outside academia. They also report positive impacts on the department's support and goodwill from outside academia.

Different pathways to impact: The societal impact cases clearly demonstrate the many differences between the SFFs in terms of fields of science/disciplines, degree of interdisciplinarity, degree of inter-organisational collaboration and degree of basic research and non-academic partners. This means that their pathways to impact vary a lot. Most of the cases describe uptake of research results rather than impact in a wide sense, and most of them tie impact to particularly original research carried out in the SFF or in a project or unit that hosted the SFF or was related to it. It is as such difficult to assess the added value of the SFF for the societal impact.

6 Challenges and negative impacts on the research system

The main impression so far is that the scheme has been successful in terms of scientific activity, collaboration, impacts on the host institutions as well as interactions outside academia. However, both the surveys and the interview data point out challenges. In this chapter we expand upon some main challenges based on the interviews with leaders at the host institutions and survey comments/free text replies from SFF participants and other staff at the host department.

6.1 Challenges for the host institutions

Several of the respondents and the interviewees pointed out challenges related to how the host institution handle the SFFs. While the majority were positive towards the scheme, they emphasised that if the SFF is not handled properly it may create severe tensions and challenges in the working environment. As the SFFs are prioritised by the host, they are often given better working conditions than the rest of the host department, and this aspect was especially emphasised by some of the host department staff not participating in the SFF. For instance, they claimed that the SFFs often get refurbished offices in order to co-locate the involved researchers, they get better administrative services and have more resources for travels and social events. This creates a perception of A and B teams - the haves and the have not - according to several host department staff not participating in the SFF. Some staff members (non participating in the SFF) and some interviewed leaders at the host organisations argued that this perception becomes stronger if the SFF is introvert and does not invite colleagues on the outside to seminars, events etc. On the other hand, the interviewees underlined that when well-integrated, many of the SFFs are 'lighthouses' with considerable activities-. They are very open and inclusive, being good examples on how to organise research and create an inspiring environment. There are neither differences between fields on this matter, nor type of host institutions. As such this challenge seems primarily to relate to how individual centres are run and to how the host distribute resources.

The prestige of the scheme seems to create some challenges. One relates to the power of the centre leader. Some interviewees and SFF participants, representing different centres, commented that the prestige of the scheme gives the leader too much power in the organisation, and if this is not handled correctly, the SFFs may become a 'state in the state'. It was a particular challenge if the centres became very large. The interviewees claimed that some SFF leaders demand 'full autonomy' and did not relate to the department or other host structures, and this contributed to a strained relationship. Many underlined the importance of having clarified different expectations at an early stage, having good relations and a strategy for integrating the centres in the daily activities and in leadership structures – either by the department head, dean or institute director being the chairman of the board, and/or including the centre leader in the meetings of the leadership.

Another challenge relates to how the hosts handle tensions in the centre. According to several of the deans, the faculty often has limited strategic capacity and much of the resources are dedicated to the SFFs. The SFFs are seen as very important for the faculty in terms of prestige and it is important to ensure good conditions to support the research. However, high investments and the importance of success may also have a backside in terms of a research environment that is too competitive, according to some SFF participants (survey comments relating to particular issues/SFFs). A too competitive research environment was in a couple of cases perceived to curb collaboration, and also two cases where younger scientists were not properly credited for their work. The respondents claimed that these problems were not properly addressed.

6.2 Concentration on certain research lines and topics

The survey replies show that some respondents, and in particular host department staff not participating in the SFF, perceived that having an SFF implied fewer financial means (life science and science/technology), less recruitment positions for other research lines/topics in the host department (all fields). Interviews with leaders indicated that getting an SFF means investing in (purchase and running) infrastructure which may be very costly. This is a matter of priorities, which may affect other research groups, according to the informants.

As shown in Chapter 3, in particularly in the social sciences and humanities host department staff not participating in the SFF claimed that the SFFs had negative impact on the plurality of strong research topics/lines in the host department. The free text comments in the survey and interviews expand upon this, indicating that humanities include many and often small research topics/lines, and the concentration of resources to a particular research line/topic may blow up the activity at the expense of others, and contribute to a narrowing and specialisation of

research and also teaching. Furthermore, host staff in the social sciences and humanities argued that the SFFs had a negative impact on the department's ability to build competence in areas important for innovation, sustainability or public sector in Norway, as well as the ability to address societal challenges. Interviews revealed that this in particular was related to the quest for internationalisation, thus directing the attention of the staff to the international arena rather than national topics. The negativity in the social sciences and humanities from host department staff not participating in the SFF goes together with worse relationships between the heads of department and the SFFs (compared to the other fields, as reported by the SFF leaders in the survey).

The impact of the SFFs on the plurality of research lines/topics in the social sciences and humanities is closely related to the size of the funding. As many of the interviewees underlined, there are large differences in how the SFF grant is spent in the different fields. In life science and science/technology the funding often is a small part of a larger budget and the research often is highly reliant on research infrastructures like equipment, labs and technical staff. According to some of the non-participating respondents, host staff and interviewees the relatively large long-term funding generates challenges in the humanities because the main currency is research time. The funding has therefore often been used for inviting guest researchers, arranging seminars and buying out of other obligations such as teaching (see also section 4.2.).

6.3 Decreased teaching on master and bachelor level

In many of the first generations of SFFs, it was common to buy out researchers from teaching obligations. This created several challenges according to the interviewees; first, other staff had to cover the teaching and often this was temporary personnel and second, the research of the SFF was not disseminated to bachelor and master students, and for some SFFs it was difficult to recruit young talents from their own department. Despite these experiences, the survey respondents report a decrease in teaching at master and bachelor level – particularly in the social sciences and humanities, which imply that these challenges still exist. However, as shown in 2.2. the majority of the participating respondents maintain the same level of teaching as prior to the SFF.

6.4 Generating temporality and insecure career prospects

A major challenge of the SFF scheme, according to most of the interviewees and the survey respondents, is that it generates temporality. The SFFs attracts young and established researchers for a time limited period, but there are few permanent

positions at the higher education institutions (in the research institutes this is different). Sivertsen et al (2019) show that the SFFs have more postdocs compared to the general number of postdocs at the host institution.

Several of the SFF participating survey respondents expressed worries over the role of the postdoc positions. It is supposed to be a position in which to qualify to other academic positions. In general, the postdocs are limited to between two to four years and mainly focused on research. The respondents main worry is that the postdocs will not gain teaching experience which may disqualify them from applying for a permanent position at the Norwegian HEIs. This is however not only a problem for the SFF postdocs, but a general one.

Many of the SFF participants and the interviewees also underlined that the SFFs attract talents and good researchers who are hired on time-limited contracts, based on the availability of external funding. According to some of the SFF participants, time limited contracts create insecurity, demotivation and stress, as they have to use much time to apply for external funding which they are not guaranteed to get. It may also generate risk aversion, some argue, as the aim becomes to get research published in order to build an academic CV. Furthermore, temporality creates uncertainty for what will happen after the termination of the SFF grant. Some of the participants warrant that temporality should be addressed in the application process, and that good strategies for continued financing need to be in place already when SFF are granted, to avoid career crashes and loss of excellence and knowledge. As shown in chapter 4, some of the host institutions have implemented strategies for addressing this or are planning to. Temporality is high on the agenda. For instance, the University of Tromsø (UiT) plans the retirement of staff more systematically in order to support interesting research lines with permanent positions.

SFF participants and some of the interviewees argued further that the SFF should take greater responsibility for the career of young researchers. CoE schemes have been criticised for funding male senior researchers (Sandström et al.2010), but while seniority may be required in order to display a potential academic track record in the application, the informants argued that the SFFs should develop a plan for systematically supporting the careers of young researchers by for instance making them PIs. Some rectors and deans emphasised that the SFFs have a responsibility for serving as a good example at the institution, there are some, they said, but also examples on the opposite. Likewise, both participants and host leaders think that the SFF should to a larger extent support female researchers. However, many of them underlined that this was also a responsibility of the RCN. They claimed that RCN need to change the way it evaluates the gender dimension; RCN should evaluate actions taken, not the ambitions for increasing number of female researchers (which are not necessarily achieved).

The issue of temporality and permanent positions has also some specific challenges in certain fields. Some leaders in fields with responsibility for profession-based education said that supporting the research activity after the termination of the grant pose a challenge as permanent positions first and foremost must cover educational needs. Therefore, there are few opportunities to provide permanent position to the staff in an SFF as the topics of the SFF are usually already covered.

6.5 Preparing exit and lack of funding opportunities

After nearly two decades of SFFs, the host institutions have now considerable experiences with the instrument. A general lesson learnt at institutions, seems to be that the SFFs should be located at the department level in order to ensure a relatively smooth reintegration after the termination of the SFF grant. However, as shown in chapter 4, the majority of the host institutions expect the research groups in the SFFs to be self-sustained. According to the interviewees this represent a challenge because the different fields vary in terms of external funding opportunities. Interviewees underlined that in humanities there are fewer opportunities – both nationally and internationally – compared to other fields, and as such it may be more difficult to sustain the research activity in these fields. This is, however, a general problem of the field and not only for the SFFs.

Some SFF participants and other staff at the host departments also commented in the survey that the SFF scheme creates temporary pockets of excellence because the activity cannot be sustained to the same extent by other funding which often is smaller and for a shorter time period. Although commending the SFF scheme, they warrant other instruments that may support continued research in the centres. For instance, respondents in life science claimed that ten years is too short for their type of research. One solution is to apply for another SFF with a related but different topic. However, informants claimed that this strategy represented some challenges as the application process starts before the termination of the existing SFF and tends therefore to create a division between the chosen ones for the new SFF and the left overs. The different needs of the fields and their different funding opportunities thus create challenges for sustaining the research activity of the centres.

6.6 Impact on the research system

A question addressed in the mandate of this report was: “Has the scheme had any negative impact on the research system, if so how?” As argued in 1.2.4. it is difficult to trace direct impact of the SFF scheme on the system, other developments also need to be taken into consideration. Nevertheless, the survey replies and the

interviews addressed some perceived positive and negative impacts of the scheme on the research system. One concern raised by some of the interviewees is that the scheme seems primarily to support internationally oriented research at large institutions. This may on the one hand, they argued, contribute to a concentration of the resources to international fields, and on the other, exclude fields and institutions which are more oriented towards national/Nordic research. Some interviewees also claimed that the emphasis on internationalisation came at the expense of national collaboration.

Furthermore, and as discussed above, to sustain the research activities after the termination of the grant may be challenging. Some of the interviewees underlined that aiming at funding from the EU is important, but that this should not become an excuse for not developing supporting instruments in the Norwegian research system. This comment also involved a particular concern for fields with less international funding opportunities. Some of the interviewed leaders said that they acknowledge the institutions' responsibility for supporting research activities in good centres after the termination of the grant, but that this was a challenge if funding opportunities were few. Hence, although it is an institutional responsibility to facilitate the exit of the centres, exit may be challenging for certain centres due to structures in the research system.

As shown in Chapter 4, the scheme has contributed to cross-sectoral collaboration in the system. It has institutionalised arenas and mechanisms of collaboration between research institutes and higher education institutions (HEIs), and HEIs and regional health authorities. According to some interviewees there is a perception that the SFF scheme should be reserved for the HEIs, while the SFI and the FME scheme target the research institutes. Some interviewees underlined that it is important that the SFF scheme continue to be an open competition arena for both HEIs and research institutes, as both have research groups which are in the international forefront.

6.7 Summary

The large majority of the survey respondents and interviewees report positive impacts from the SFFs. The negative impacts are found on various levels and related to different parts of the scheme. The main challenges are:

Difficult working environment and conditions in the department. Some staff at the host departments/units who do not participate in the SFF themselves report challenging work environment and conditions. The negativity relates to the perception of the SFF creating A and B teams in the department, a decrease in financial means and recruitment positions and less plurality of research lines. The social sciences and humanities are overrepresented among those who are negative. This

goes together with less good relationships between the heads of department and the SFFs in the social sciences and humanities than in the other fields (as reported by the SFF leaders). Furthermore, some SFFs are large and some have leaders with expectation of the SFF having relatively high autonomy. In some cases, this creates challenges in terms of handling the SFFs and generating synergies with the host department/unit. The centres are also highly attractive and signal prestige for the host institutions and the hosts invest considerable resources in the SFFs. According to a couple of survey comments this may lead to a 'hands-off' attitude from the host leadership when it comes to handling conflicts in the centres.

Decrease in teaching at master and bachelor level. Although the majority of the participants report the same level of teaching as prior to the SFF, close to 30% in the social sciences and humanities report a decrease. Moreover, for some SFFs within the social sciences and humanities, a few survey respondents added comments about negative consequences for the link between research and education in their department.

Generating systematic temporality. The scheme has, according to respondents, interviewees and Sivertsen et al (2019) contributed to an increase in the use of temporary positions such as postdocs and researchers on time limited contracts in HEIs. The centres are time-limited and there are limited permanent positions in the Norwegian system. Insecure career opportunities may lead to risk aversion, demotivation and stress for temporary employees, according to many participants.

Developing the careers of young talents and female researchers. According to some interviewees and participants in the SFFs, the centres should have the task of being good examples of how to systematically support the career of young talents and female researchers. This role is not taken by all centres. A challenge, according to the interviewees and participants, is that these efforts are not evaluated properly, and stated ambitions are not always achieved.

Exit is a challenge, few funding opportunities. The host institutions are responsible for the centre and its research activities after the termination of the SFF grant. This is a challenge. According to the participants and the interviewees the research activities are scaled down because of lack of funding. In some fields it is fewer opportunities for external funding compared to others. Several of the interviewees called for new types of funding instruments which may ensure that the SFFs do not end up with unused potentials.

A scheme for the large institutions. SFFs are highly attractive, and according to some of the interviewees it suits particularly well large institutions with an international and basic research profile. On the system level this may contribute to creating a division between the different research organisations, and some expressed a worry that for instance research institutes may be excluded from the scheme.

7 Overall analyses and conclusions

This final chapter integrates different parts of the analysis, also drawing on the parallel bibliometrics/career analysis report. Section 7.1 explores success factors in different groups of SFFs, and Section 7.2 provides integrated conclusions on some key issues appearing in previous chapters.

7.1 Types of centres – understanding different kinds of success

In this section, we explore common characteristics of the centres which appear to have the highest performance according to the bibliometric analysis (Sivertsen et al. 2019) and the midterm evaluations of the SFFs. We also include data on the SFFs' interaction with user groups/the public (Section 5.1), and explore how such interactions correlate with the bibliometric results and with the SFF participants' different views (survey responses as reported in previous chapters). The analyses include the first three generations of SFFs.

Explanation of performance categories used in this section

The SFF scheme is a highly selective funding scheme and all the centres appear as high performing. It is still possible to differentiate based on the bibliometric analysis and by combining different performance indicators. We have used the SFFs' shares of highly/top cited articles and their collaboration with the top 42 universities in the world (as appearing in Sivertsen et al. 2019), and their results in the midterm evaluations, and differentiate between the centres' performance on these specific indicators. We moreover combine these three indicators to a more selective category of those scoring high on all three. In addition, we compare with the SFFs' reported interactions with user groups/the public. The top categories are constructed as follows:

- *Very highly cited (category a)*: This category comprises the SFFs which according to the bibliometric analyses have a high proportion of their articles among

the top 1% or 10% most cited in the world (in the same field in the same year). By combining the 1% and 10% indicators we include both a narrow indicator, ensuring to include all those with a high share of very highly (1% top) cited articles, as well as a broader and more robust indicator including all with a high share of highly cited articles (10% top, Sivertsen et al. 2019, Section 2.3.1). The cut-off line is set so that those centres with more than 20% of their articles among the top 10% most cited or more than 3% of articles among the top 1% most cited are included in the category. This includes 18 of the 30 centres in the bibliometric analysis (6 SFFs which score above the line only on the top 1%, 2 SFFs which score above the line only on the top 10%, and 10 which score above the line on both).

- *Increased collaboration with top 42 universities (category b)*: This category comprises the SFFs which have increased their co-authorship with universities with the highest scores on citation indicators. It is based on the share of the SFFs participants' articles which are co-authored with the top 42 universities¹⁶, before and during the centre period. Those with more than 2 percentage points increase are included in the top category, comprising 20 of the 30 SFFs in the analysis. These SFFs have between 3.5 and 28 percentage points more collaboration with the top 42 than before the centre period. Note that this indicator attempts to measure success in terms of increased collaboration as an effect of establishing the SFF, and some SFFs where the participants had a high level of collaboration with the top 42 before the SFF are not included in the category.¹⁷
- *Top score on midterm evaluation (category c)*: 23 of the 34 SFFs (in the first three generations of SFFs) received the best score (exceptional/exceptionally good) for their midterm evaluation (RCN 2006; 2011; 2018). These 23 are included in this category.
- *Top score on citations and midterm evaluation, and increased collaboration top 42 universities*: This category comprises 12 SFFs which are found in all three above categories. In this way we have a smaller category of SFFs which score top on a broader set of indicators, for use in the explorative analyses.
- *Much reported interactions with society (category d)*: Based on the mapping of the interactions reported from each SFF (in their annual and final reports), we have assigned scores on different modes of interactions, and added these to a total interaction score per centre (as described in Section 1.2.1 and 5.1). Modes and level of interactions vary somewhat between the three academic fields. For

¹⁶ These are explained and listed in Sivertsen et al. 2019, Section 2.4.2

¹⁷ Looking at the level of collaboration in the centre period (and disregarding increase), we find that the 20 included (in category b) SFFs had co-authorship with the top 42 universities on between 8% and 48% of their articles during the centre period, whereas the 10 non-included SFFs had such collaboration on between 2% and 26% of their articles.

the purpose of the explorative analysis in this section, we have included the SFFs with an above average level of total interactions among the SFFs in their field in the top category. This includes centres with a total score above 6 in the life sciences and social sciences and humanities, centres with a total score above 8 in natural sciences and technology¹⁸. 18 of the 34 SFFs are in the top category.

The table below shows the number of SFFs in each category and their distribution by academic field.

Table 7.1 Number of SFFs in each top category by academic field

	a) Very highly cited	b) Increased collaboration top 42 univ.	c) Midterm SFF evaluation top score	a, b and c	d) Reported high interactions with society
Total SFFs in top category	18	20	23	12	18
<i>Of these:</i>					
SSH*	2 (of 3)	2 (of 3)	4 (of 7)	2 (of 3)	4 (of 7)
Life sciences	8	5	7	3	4
S&T	8	13	12	7	10

The analysis comprises the first three generations of SFFs, in total 34 SFFs for the midterm evaluation (c) and the reported interactions (d), and 30 SFFs for the bibliometric analysis (a and b). Of these 10 are within the life sciences and 17 within natural sciences and technology (S&T), and the remaining within social sciences and humanities (SSH).

** Three centres within social sciences and humanities (SSH) are included in the bibliometric analysis (see explanation in Sivertsen et al. 2019), whereas the analysis comprises seven SFFs within these fields for the midterm evaluation and the reported interactions.*

As shown in Table 7.1, all top categories comprise a reasonable share of the SFFs in each of the three academic fields. All the three generations of SFFs are also well represented – SFF1 with 5 to 9 in each top category, SFF2 with 3 to 6 in each, and SFF3 with 4 to 8 in each.

As noted above, all the centres appear as high performing. All of them are found in at least one of the top categories, while their profiles differ. Six of the twelve which end up in all three first categories (top score on citations and midterm evaluation and increased collaboration top 42 universities), are also in the top societal interaction category, whereas three of those in the top societal interaction category are not found in any of the other top categories. Moreover, there are some notable field differences when it comes to overlap between the categories: five of those which end up in all four top categories are within the natural sciences/technology, one within the social science/humanities, whereas there are none within the life sciences. Hence, it seems that the life sciences SFFs with the highest

¹⁸ On each of the six modes mapped, the centres were assigned '0' for no interaction, '1' for a low level interactions, '2' for a medium level interactions and '3' for a high level interactions, see Section 1.2.1.

performance on bibliometric indicators have less interactions with society (or are less concerned about reporting such interactions to the RCN) than in SFFs with similar scores in the other fields. Put in more general terms: Whereas some SFFs score high on both sets of indicators applied, most score high only on one dimension. And as measured here, the life sciences are not represented among those scoring high on both dimensions. We find no obvious reason for this in the data. It might be that interaction outside academia appears less relevant for the life sciences SFFs with the highest bibliometrics scores, or they are focused on one mode of interaction (like commercialisation) and thus get a lower total score in the interaction analysis, or they may have been less eager to report such interactions to the RCN.

Characteristics of the SFFs in the top categories

The survey to the SFF participants provides data on how they perceive the SFF to have changed their research activities and resources (Appendix 1, Question 3). By comparing these replies between the different categories of SFFs we find some significant differences:

- *SFFs with a high share of very highly cited publications (category a)*: The participants in the top category SFFs score higher on several of the questions regarding the impact of the SFF on their research and conditions. A significantly higher proportion of the participants in the SFFs in the top category than those not in the top category, find that the SFF has clearly increased their research opportunities in terms of drawing on multiple academic fields, advancing knowledge on key international research questions in their field, addressing new important research topics, participating in international research collaboration, as well as the research facilities available to them (Table A 5 in Appendix 2). Moreover, a significantly higher proportion find that their career opportunities are clearly increased, which can be understood as a result of the enhanced research opportunities. In addition, success in terms of citations also appears to go along with increased dissemination outside academia: A significantly higher proportion of the participants in the SFFs in the top category than those not in the top category, find that the SFF has clearly increased their involvement in research dissemination outside academia.
- *SFFs with increased collaboration top 42 universities (category b)*: Except for clearly increased participation in international research collaboration, the participants in this top category do not score higher on the questions regarding the impact of the SFF on their research and conditions (Table A 5 in Appendix 2). Hence, it seems that this category – comprising all SFFs with an increased co-authorship with the universities with the highest scores on citation indicators – does not capture enhanced research activities and resources as perceived by

the participants, except for the obvious one of increased international collaboration. As noted above, many of the SFFs consist of participants with a high level of co-authorship with the top 42 universities also before the SFF, and these already established collaborations may be more important for the SFF, than an increase after establishing the SFF.

- *SFFs with top score on their midterm evaluation (category c)*: A significantly higher proportion of the participants in the SFFs which were awarded top scores on their midterm evaluation (than those in SFFs without top scores), find that the SFF has clearly increased their opportunities to draw on multiple academic fields in their research. Apart from this, the participants in this top category do not score significantly higher on any of the questions regarding the impact of the SFF on their research and conditions (Table A 5 in Appendix 2). However, on one of the questions, the participants outside the top category score higher: A significantly higher proportion of the participants in the SFFs *without* top score on their midterm evaluation, find that the SFF has clearly increased their involvement in knowledge transfer such as collaboration with users, patenting or consultancy/advice. Hence, increase in such activities does not seem to have been rewarded in the midterm evaluations. It should be added that as the majority of the SFFs were awarded top scores on their midterm evaluation this 'top category' is large, and to a limited extent useful for studying characteristics of most success SFFs.
- *SFFs with high scores on citations, and top score on midterm evaluations and increased collaboration top 42 (combined category a, b and c)*: When narrowing the top category into a group of 12 SFFs which score high on all three categories above, the characteristics found for those with top score on citations (category a) remains, while two new characteristics are added (Table A 6 in Appendix 2). A significantly higher proportion of the participants in the SFFs in this top category (than those not in the top category), find that the SFF has clearly increased their interdisciplinary research collaboration, and also their time available for research. Hence, this smaller groups of SFFs scoring top in multiple categories, seem to a larger extent than the other SFFs to have enhanced/increased the participant's research activities and conditions in multiple ways:
 - o opportunities to draw on multiple academic fields; participation in interdisciplinary research collaboration
 - o contribution to advancing scholarly/scientific knowledge on key international research questions; opportunities to address new important research topics
 - o career opportunities (e.g. chances for future promotion or permanent position)
 - o involvement in research dissemination outside academia

- o participation in international research collaboration
- o time available for research
- *Characteristics of SFFs with much reported interactions with society (category d):* As should be expected, the participants in the SFFs with much interactions with society score higher on increased involvement in research dissemination outside academia. They moreover score higher on opportunities to address new important research topics (Table A 6 in Appendix 2). Apart from these two characteristics common with top category a (the very highly cited SFFs), the other characteristics of this category differ from the other top categories: A significantly higher proportion of the participants in the top interaction category (than those not in the top category), find that the SFF has clearly increased their research opportunities in terms of their ability to attract external funding, their participation in national research collaboration and their involvement in teaching/supervising at PhD level (Table A 6 in Appendix 2). Hence, a separate profile appears for the SFFs with much interactions with society. They do not only increase the participants' involvement in research dissemination outside academia; they also to a larger extent increase their external funding, national research collaboration and PhD teaching/supervising.

7.2 Integrated conclusions on some key issues

Success factors

From the analysis in Chapter 3, the long-term SFF funding and new collaborations/partners in the SFF come up as the generally most important factors for explaining the success of the SFFs. In Chapter 7 we split the SFFs into different performance categories and found two different sets of success profiles (Section 7.1). A smaller group of SFFs scoring top on citations, the midterm evaluation as well as increased collaboration with top universities, seem to a larger extent than the other SFFs to have enhanced the participant's research activities and conditions in terms of drawing on multiple academic fields and participation in interdisciplinary research collaboration, and their contribution to key international research questions and new important research topics. Moreover, the participants' career opportunities, time for research, participation in international research collaboration and involvement in research dissemination outside academia, are increased to a larger extent (than in the other SFFs). A separate profile appears for the SFFs with much interactions with society. In addition to increasing the participants' involvement in research dissemination outside academia, they to a larger extent increase their external funding, national research collaboration and PhD teaching/supervising.

Impact on multi- and interdisciplinarity

One of the main success factors of the top performing centres are the researchers' opportunities to draw on multiple academic fields and participation in interdisciplinary research collaboration. Studies of similar schemes report similar findings (e.g. Hellström et al. 2018). Other data in this report also support this. Interviews with deans and rectors showed that they see the SFF scheme as representing an institutional innovation, as it offers opportunities for scientific renewal by crossing disciplinary and internal and external organisational boundaries. As opposed to other individually orientated grants, like the ERC, the SFFs may bring together researchers from different disciplines and address more complex research questions, they claim. The survey data indicate that there are few differences between fields on this matter.

Relation to host institution – differences between fields

The survey and interview data show that hosts use the scheme as a strategic instrument, and it has impact on host institutions' priorities. However, the SFF leaders, department heads, rectors and deans point to that the scheme has different impacts in different fields. In line with previous research (Borlaug and Langfeldt 2019), the findings in this report show more tensions between the host institution and the SFFs in the social sciences and humanities compared to the other fields. Within the social sciences and humanities expenses apart from manpower/research time is often lower than in the other fields. The concentration of resources to certain research lines/topics may therefore have larger consequences for the research environment, for instance such as a decrease in the SFF participants engagement in teaching on bachelor and master level. We also find challenges in other fields. In the life sciences, financial and administrative support from host institution are reported as a challenge. This may be related to high infrastructure expenses, dependence on collaboration with the regional health authorities and hospitals, as well as limited opportunities for permanent positions within the topics of the SFF at the host institution.

Competitive research environments and temporary positions

A large proportion of the SFF staff indicate in the survey that the SFF has been important for their career opportunities. Still, analysis show that the SFF staff hold temporary positions relatively long after completing their PhD. When compared with all academic staff in the core Norwegian research system (in 2017), a larger proportion of the SFF staff (who were still in the core Norwegian research system

in 2017) were in a temporary position 10-14 years after completing their PhD (Sivertsen et al. 2019). One reason may be that the SFFs mainly have temporary positions to offer. They hire people in postdoc and other temporary research positions, using open calls where candidates from all over the world compete. In this competition those with some years of track record as a researcher (after their PhD) may often be the strongest candidates. Hence, the (junior) SFF staff may already at the start of their SFF period have several years of temporary positions, and may after their SFF period continue to compete for positions in attractive research environments where there are many highly qualified applicants for each vacancy. When a large part of SFF participants still indicate important career impacts, this may be on other career tracks than a permanent position dedicated to research on the topics of the SFF.

Impact on international and national research collaboration

According to the survey data, the SFFs have spurred both national and international collaboration. A large majority of the SFF participants report that their international (72%) and national (64%) research collaboration is clearly or somewhat increased compared to their situation prior to the SFF. However, according to analysis of the participants' co-authorship patterns, the share of their articles that include international co-authorship has increased, whereas the share with national collaboration remains mostly stable (Sivertsen et al. 2019). It should be noted that these bibliometric figures include Norwegian co-authorship with non-SFF participants, whereas the survey asked about national research collaboration more generally. Hence, the survey replies (on national collaboration) may be interpreted as an increase mainly in collaboration among the Norwegian SFF partners. Moreover, the bibliometric analysis indicates a slight increase in the collaboration with non-SFF participants at the host institution (Sivertsen et al. 2019).

As for field differences in international collaboration, the survey data and the bibliometric data are in line. Both indicate less increase in the international collaboration within the life sciences (than in the social sciences/humanities and natural sciences/technology). According to the bibliometric data, the participants in several of the life sciences SFFs had much co-authorship with the top universities abroad already before the SFF period, and this did not change much in the SFF period.

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Appendix 1 Survey questionnaires



Evaluation of the SFF scheme

Survey to (past and present) PhD students at the SFFs

This questionnaire addresses your experience as a PhD student at a *Senter for fremragende forskning* (SFF)/Centre of Excellence funded by the Research Council of Norway. We hope you will take the time to share your experiences and views. Your information will not be used to evaluate the individual SFFs, but will be of great importance for the evaluation and future development of the SFF scheme.

Your present situation

1. To enable us to direct you to the relevant questions, please indicate your present situation.

- ☐ I am presently a PhD student affiliated with an SFF
- ☐ I have been, but am no longer, a PhD student affiliated with an SFF
- ☐ None of the above (if none of the categories above fit your situation, or if you do not know if you are/have been affiliated with an SFF, you are outside the target group of this survey)

2. Please indicate your (main) current institutional affiliation.

- ☐ University or other higher education institution
- ☐ University hospital/hospital
- ☐ Research institute
- ☐ Industry/private sector
- ☐ Public sector (apart from the above)
- ☐ NGO
- ☐ On leave/not employed
- ☐ Other, please specify:

3. Please indicate whether your present work includes research activity.

- ☐ To a large extent
- ☐ To some extent
- ☐ Not at all

4. What is your current (main) position?

- ☐ Full professor/Research professor/Research director or similar (Professor/Forsker 1)
- ☐ Associate professor/Senior researcher or similar (1. amanuensis/forsker 2)
- ☐ Assistant professor/Postdoc/Researcher or similar
- ☐ Doctoral student
- ☐ Medical position/physician/similar
- ☐ Technician/Research support position
- ☐ Advisor/analyst/consultant
- ☐ Other, please specify:

5. Please indicate whether this is a temporary or permanent position

- ☐ Permanent/tenured position
- ☐ Temporary position

6. Where is this position?

- ☐ In Norway
- ☐ Europe (apart from Norway)
- ☐ Outside Europe

7. During your PhD-work, where do/did you have your main office?

- ☐ In the same building as the centre leader
☐ At the same geographical location as the centre leader, but in another building
☐ At a national partner institution (not the institution hosting/coordinating the SFF)
☐ At an international partner institution
☐ Other, please specify:

8. Your gender

- ☐ Female
- ☐ Male
- ☐ Other/prefer not to say

9. Is your research within one or several fields of research? Please use the scale from 1 to 10 below to indicate the mono/multi-disciplinarity of your research. If you do not find this question meaningful, please select not applicable (N/A).

All my research is/ has been within one well-established academic field (mono-disciplinary) 1 2 3 4 5 6 7 8 9 10 All my research relates to many different academic fields (multi-disciplinary) N/A

○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

10. Please indicate in what way being part of the SFF has impacted the following aspects of your PhD work.

Please consider the positive/negative impacts by comparing with what you think would be the situation if you did your PhD work without being part of an SFF. If you are unsure if the SFF has impacted/will impact your PhD work (e.g. you cannot remember, it is too early to say), please select the 'Cannot say' category. If you think your situation/work would be same if you had done your PhD work in an environment that was not an SFF, please select the 'No impacts' category.

[illegible]

11. Please indicate the basis for your replies to the question above

- ☐ In the above question I compared with a situation outside my department
☐ I compared with the situation for PhD students in my department who were/are not part of the SFF
☐ Not relevant/cannot say

12. To what extent do/did the SFF have similar impact for all PhD-students in your department, regardless of whether they are/were formally part of the SFF?

- ☐ Not at all
- ☐ To some extent
- ☐ To a high extent
- ☐ Cannot say/not relevant

13. **Your research after the PhD fellowship.** Please indicate to what extent you have continued your research lines/topics and collaboration from the SFF, after your PhD fellowship.

	Not at all	To some extent	To a high extent	Cannot say	Not relevant
My present research builds on the research I did for my PhD	☐	☐	☐	☐	☐
I presently work on research topics different from those for my PhD	☐	☐	☐	☐	☐
I still collaborate with the same senior researchers in <u>Norway</u> as during my PhD	☐	☐	☐	☐	☐
I still collaborate with the same senior researchers <u>abroad</u> as during my PhD	☐	☐	☐	☐	☐

14. **Your career after the PhD fellowship.** Please respond to the following statements regarding the role of the SFF for your further career.

	Strongly disagree	Partly disagree	Neither disagree nor agree	Partly agree	Strongly agree	Not relevant/too early to say
My research in the SFF has been important for my career	☐	☐	☐	☐	☐	☐
My academic network from the SFF has been important for my career	☐	☐	☐	☐	☐	☐
The prestige of the SFF has been important for my career	☐	☐	☐	☐	☐	☐
The opportunities I was given in the SFF has been important for my motivation for a further researcher career	☐	☐	☐	☐	☐	☐
I think my career would have been the same if I had done my PhD work (on a similar topic) in an environment that was not an SFF	☐	☐	☐	☐	☐	☐

15. What kind of career would you prefer once you have completed your doctoral degree? (You may select more than one)

- ☐ Academic position at university/ university college/ university hospital
- ☐ Researcher position at a research institute outside the higher education sector
- ☐ Researcher/analyst position in the private sector/industry
- ☐ Other position in the private sector/industry
- ☐ Researcher/analyst position in the public sector
- ☐ Other position in the public sector
- ☐ Researcher/analyst position in an NGO
- ☐ Other position in an NGO
- ☐ Another type of position
- ☐ Don't know/too early to tell

16. **Other comments:** If you would like to give additional comments concerning your experiences with the SFF scheme or your PhD period, positive or negative, please use the text field below.

17. Thank you very much for entering the survey. Your reply to the entering question indicates that you are outside the target group.

Please select "Finish" to exit the survey.



Finish



Evaluation of the SFF scheme

Survey to SFF participants and scientific staff at SFF host institutions

This is a questionnaire about the research community's experience with Senter for fremragende forskning (SFF)/Centre of Excellence funded by the Research Council of Norway. We hope you will take the time to share your experience and views on the SFF scheme. Your information will not be used to evaluate the individual SFFs, but will be of great importance for the evaluation and future development of the SFF scheme. First, we would like you to indicate your kind of relationships with SFFs so we can direct you to the relevant questions.

Your SFF affiliation/relations

1. Please indicate your (present or past) relationships with Senter for fremragende forskning (SFF) (multiple replies possible).

- ☐ I have not participated in an SFF, but I am/have been employed at a department/unit hosting* one (or more) SFF(s)
- ☐ I am/have been participating in an SFF (but not been the leader of one)
- ☐ I am/have been the leader of an SFF
- ☐ I am/have been head of a department/unit that hosts/hosted* one (or more) SFF(s)
- ☐ None of the above (if none of the categories above fits your relationship with any SFFs, or if you do not know if you have any such relationships with an SFF, or you have not been employed at a department/unit while it hosted a SFF, you are outside the target group of the survey).

* In this survey, 'host' departments/units do not only include formal hosts. If your department/unit is close (organisationally and/or scholarly) to a present or past SFF in your organisation, you should answer that it hosts/hosted an SFF. For (smaller) research institutes, the host unit may include the whole organisation.

2. Please indicate your employment during the SFF-period.

If you participate/have participated in multiple SFFs, please relate your answer to the one you have/have had the most important relationship with (e.g. devoted most research time to).

- ☐ My formal employment is/was with the department/unit hosting* the SFF (Include your part-time positions here)
- ☐ My formal employment is/was in Norway, but not with the department/unit hosting the SFF
- ☐ My formal employment is/was outside Norway
- ☐ Other please specify:

*In this survey, host departments/units do not only include formal hosts. If your employment is/was with a department/unit in your organisation close (organisationally and/or scholarly) to the SFF, please indicate that your employment is/was with the host department/unit.

Impacts of the SFF* on your activities and resources

* If you participate/have participated in multiple SFFs, please relate your answer to the one you have/have had the most important relationship with.

3. How do/did you experience your situation in the SFF compared to your previous situation (the time before the SFF), regarding the following issues?

	No change	Clearly increased	Somewhat increased	Somewhat decreased	Clearly decreased	Cannot say/Too early to say/Cannot remember	Not relevant
Your time available for research	☐	☐	☐	☐	☐	☐	☐
Research facilities/equipment/data registries/biobanks etc. available to you	☐	☐	☐	☐	☐	☐	☐
Technical staff/research support services available to you	☐	☐	☐	☐	☐	☐	☐
Your participation in <u>national</u> research collaboration	☐	☐	☐	☐	☐	☐	☐
Your participation in <u>international</u> research collaboration	☐	☐	☐	☐	☐	☐	☐
Your participation in <u>interdisciplinary</u> research collaboration	☐	☐	☐	☐	☐	☐	☐
Your involvement in knowledge transfer such as collaboration with users, patenting or consultancy/advice	☐	☐	☐	☐	☐	☐	☐
Your involvement in research dissemination outside academia	☐	☐	☐	☐	☐	☐	☐
	No change	Clearly increased	Somewhat increased	Somewhat decreased	Clearly decreased	Cannot say/Too early to say	Not relevant
Your involvement in teaching at Bachelor level	☐	☐	☐	☐	☐	☐	☐
Your involvement in teaching/supervising at Master level	☐	☐	☐	☐	☐	☐	☐
Your involvement in teaching/supervising at PhD level	☐	☐	☐	☐	☐	☐	☐
Your opportunities to address new important research topics	☐	☐	☐	☐	☐	☐	☐
Your contribution to advancing scholarly/scientific knowledge on key international research questions in your field	☐	☐	☐	☐	☐	☐	☐
Your opportunities to draw on multiple academic fields in your research	☐	☐	☐	☐	☐	☐	☐
Your ability to attract external funding (apart from the SFF funding)	☐	☐	☐	☐	☐	☐	☐
Your career opportunities (e.g. chances for future promotion or permanent position)	☐	☐	☐	☐	☐	☐	☐

4. You have answered that the SFF helped you advance scholarly/scientific knowledge on key international research questions in your field. Please indicate in which way the SFF enabled this.

	Important	Partly important	Not important	Not relevant	Cannot say
More resources (time, staff, facilities)	☐	☐	☐	☐	☐
New collaboration/new partners	☐	☐	☐	☐	☐
Increased visibility of my research	☐	☐	☐	☐	☐
Increased ambitions for my research	☐	☐	☐	☐	☐
Increased risk-taking in my research	☐	☐	☐	☐	☐
Other, please specify below	☐	☐	☐	☐	☐

5. To what extent do you agree with the following statements about the SFF:

	Agree	Partly agree	Neither agree nor disagree	Partly disagree	Disagree	Cannot say	Not relevant
The working environment is/was based on sharing of ideas and research results	☐	☐	☐	☐	☐	☐	☐
The working environment is/was based on team work	☐	☐	☐	☐	☐	☐	☐
I do/did most of my research alone	☐	☐	☐	☐	☐	☐	☐
The centre and the planned research has/had sufficient funding	☐	☐	☐	☐	☐	☐	☐
The centre leader is/was competent to lead the SFF	☐	☐	☐	☐	☐	☐	☐
The centre leader is/was good at promoting the research from the SFF in society	☐	☐	☐	☐	☐	☐	☐

6. At the start of the survey you answered that you were employed at a department/unit which hosts/have hosted one (or more) SFFs. Below please relate your answers to this department/unit.

If the SFF is only a few years old/ you cannot answer, you may select "not relevant" below and skip this page (select next at the bottom of the page)

☐ Not relevant

7. Based on your experiences, what kinds of impacts have the SFF(s) had in your department/unit?

	No impacts	High positive impacts	Moderate positive impacts	Both negative and positive impacts	Moderate negative impacts	High negative impacts	Too early to say/ Cannot say
Resource allocation within the department/unit	☐	☐	☐	☐	☐	☐	☐
The building of strong research topics/research lines within the department/unit	☐	☐	☐	☐	☐	☐	☐
The plurality of strong research topics/research lines within the department/unit	☐	☐	☐	☐	☐	☐	☐
The international prestige of the department/unit	☐	☐	☐	☐	☐	☐	☐
The international prestige of the research groups involved in the SFF	☐	☐	☐	☐	☐	☐	☐
The recruitment of top qualified staff to the research topics of the SFF	☐	☐	☐	☐	☐	☐	☐
The recruitment of top qualified staff to other research topics in the department/unit	☐	☐	☐	☐	☐	☐	☐
The overall recruitment to the department/unit	☐	☐	☐	☐	☐	☐	☐
	No impacts	High positive impacts	Moderate positive impacts	Both negative and positive impacts	Moderate negative impacts	High negative impacts	Too early to say/ Cannot say
Competence-building in areas important for innovation, sustainability or public sector in Norway	☐	☐	☐	☐	☐	☐	☐
The content of the department's study programmes/courses	☐	☐	☐	☐	☐	☐	☐
The department's/unit's ability to attract interesting speakers to seminars/lectures	☐	☐	☐	☐	☐	☐	☐
The department's/unit's ability to address key scientific challenges	☐	☐	☐	☐	☐	☐	☐
The department's/unit's ability to address important social challenges	☐	☐	☐	☐	☐	☐	☐
The department's/unit's ability to produce reliable/robust research results	☐	☐	☐	☐	☐	☐	☐
The department's interaction with society outside academia	☐	☐	☐	☐	☐	☐	☐
The department's support/goodwill from outside academia	☐	☐	☐	☐	☐	☐	☐
Other impacts on the department's activities. Please specify below	☐	☐	☐	☐	☐	☐	☐

8. At the start of this survey you indicated that you are/have been the leader of an SFF. We invite you to answer a few additional questions in this capacity.

The size of the SFF. Please indicate whether the following were/are appropriate for carrying through the research of the SFF.

	Too large	Appropriate	Too small
The number of participating researchers	☐	☐	☐
The number of participating research organisations in Norway	☐	☐	☐
The number of participating research organisations abroad	☐	☐	☐

9. Relationships with and support from the host institution. Please indicate how you perceive:

	Good	Neither good nor bad	Bad	Cannot say
The SFF's relationship to the head of the unit/department hosting the SFF*	☐	☐	☐	☐
The SFF's relationship to the faculty leadership (if a research institute, please relate your answer to the leadership of the institute)	☐	☐	☐	☐
The financial support from your institution	☐	☐	☐	☐
The administrative support from your institution during the SFF period	☐	☐	☐	☐

**if the SFF had/has no host department, please relate your answer to the most relevant unit (e.g. where most of the SFF staff has/had their formal employment).*

10. Interactions within the SFF. Please indicate the extent to which the participants in the SFF has/had:

	Not at all	To some extent	To a high extent	Cannot say	Not relevant
Shared physical facilities/offices	☐	☐	☐	☐	☐
Joint social arrangements (lunches, dinners, etc.)	☐	☐	☐	☐	☐
Joint scientific seminars and workshop	☐	☐	☐	☐	☐

11. Which feature of the SFF-funding is/was the most important for the realisation of research in the SFF? (select one option)

- ☐ The flexibility of the funding
☐ The long term financing
☐ The size of the funding
☐ Other, please specify

If you have comments on these issues or the questions above are hard to answer, please elaborate below:

12. At the start of this survey you indicated that you are/have been the head of a department/unit hosting one (or more) SFF(s). We invite you to answer a few additional questions in this capacity.

To what extent do you agree with the following statements regarding the situation in your department during the SFF period?

	Not at all	To some extent	To a high extent	Cannot say	Not relevant
Hosting and supporting the SFF(s) implies/implied less financial means for other research lines/topics in the department/unit	☐	☐	☐	☐	☐
Hosting and supporting the SFF(s) implies/implied less recruitment positions for other research lines/topics in the department/unit	☐	☐	☐	☐	☐
SFF staff have contributed to Master level teaching at the department.	☐	☐	☐	☐	☐
SFF staff have contributed to Bachelor level teaching at the department	☐	☐	☐	☐	☐

If you have comments on these issues or the questions above are hard to answer, please elaborate below.

13. To what extent do you agree with the following statements regarding the situation in your department after the SFF period?

	Not at all	To some extent	To a high extent	Cannot say	Not relevant
My institution ensures/ensured further support of the SFF(s) after the SFF grant is/was terminated	☐	☐	☐	☐	☐
As head of department/unit, I have/had limited possibilities for ensuring the continuation of the research in the SFF(s)	☐	☐	☐	☐	☐
My department/unit has/had challenges in maintaining important personnel after the SFF period	☐	☐	☐	☐	☐

If you have any comments on these issues or the questions above are hard to answer, please elaborate below.

14. We will now pose some questions regarding the time after the SFF-funding ended. If you have not participated in an SFF which is no longer funded by the Research Council of Norway, please select "Not relevant" below and skip these questions.

☐ Not relevant

15. The situation after the SFF grant. Please indicate to what extent you have built on or continued the research activities of the SFF, after the ending of the SFF-funding from the Research Council of Norway.

	Not at all	To some extent	To a high extent	Cannot say	Not relevant
My present research builds on the research I did in the SFF	☐	☐	☐	☐	☐
I have changed research line/research topic because I have found other lines/topics that are more interesting	☐	☐	☐	☐	☐
I have changed research line/research topic because I could not get funding for my SFF research topic(s)	☐	☐	☐	☐	☐
I still have access to the <u>research facilities/equipment/data registries/biobanks</u> needed to continue the research lines of the SFF	☐	☐	☐	☐	☐
I still have access to the <u>competence/collaborators</u> needed to continue the research lines of the SFF	☐	☐	☐	☐	☐
I still collaborate with the same senior researchers in <u>Norway</u> as during the SFF period	☐	☐	☐	☐	☐
I still collaborate with the same senior researchers <u>abroad</u> as during the SFF period	☐	☐	☐	☐	☐
I still collaborate with non-academic organisations that I first got in touch with during the SFF (firms, public policy, healthcare organisations, or similar)	☐	☐	☐	☐	☐

Background information

16. Please indicate your (main) current institutional affiliation.

- ☐ University or other higher education institution
- ☐ University hospital/hospital
- ☐ Research institute
- ☐ Industry/private sector
- ☐ Public sector (apart from the above)
- ☐ NGO
- ☐ On leave/not employed
- ☐ Other, please specify:

17. What is your current (main) position?

- ☐ Part of the leadership of my organisation (Director/Rector/Deputy Dir./Dean/Head of department or similar)
- ☐ Full professor/Research professor/Research director or similar (Professor/Forsker 1)
- ☐ Associate professor/Senior researcher or similar (1. amanuensis/forsker 2)
- ☐ Assistant professor/Postdoc/Researcher or similar
- ☐ Doctoral student
- ☐ Medical position/physician/similar
- ☐ Technician/Research support position
- ☐ Advisor/analyst/consultant
- ☐ Other, please specify:

18. Please indicate whether this is a temporary or permanent position

- ☐ Permanent/tenured position
- ☐ Temporary position

19. Your gender

- ☐ Female
- ☐ Male
- ☐ Other/prefer not to say

20. Is your research within one or several fields of research? Please use the scale from 1 to 10 below to indicate the mono/multi-disciplinarity of your research. If you do not find this question meaningful, please select not applicable (N/A).

	1	2	3	4	5	6	7	8	9	10	N/A
All my research is/ has been within one well-established academic field (mono-disciplinary)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
All my research relates to many different academic fields (multi-disciplinary)											☐

21. Other comments: If you would like to give additional comments concerning your experiences with the SFF scheme or your PhD period, positive or negative, please use the text field below. Suggestions for improvements of the SFF scheme are welcome.

22. Thank you very much for entering the survey. Your reply to the entering question indicates that you are outside the target group.

Please select "Finish" to exit the survey.



Finish

Appendix 2 Tables

Table A 1 Survey to PhD students in SFFs. Response rate* by SFF generation.

SFF generation participated	N	% reply
SFF1	574	37,1%
SFF2	344	42,4%
SFF3	404	55,7%
SFF4	11	45,5%
Multiple generations	91	54,9%
Total	1424	44,9%

**Figures conclude the total invited sample, including those with invalid email addresses or outside the target group. For overall adjusted response rates see Table 1.2.*

Table A 2 Survey to SFF participants and stakeholders. Response rate* by SFF relations.

SFF relations	N	% reply
Only host	2211	33,6%
SFF	1777	39,5%
SFF and host	664	61,0%
Total	4652	39,8%

**Figures conclude the total invited sample, including those with invalid email addresses or outside the target group. For overall adjusted response rates see Table 1.2.*

Table A 3 Units included in the survey (stakeholder sample)

	Centre name	Host organization	Unit included in survey
SFF1			
CMS	Centre for Medieval Studies	UiB	Institutt for arkeologi, historie, kultur- og religionsvitenskap
APC	Aquaculture Protein Centre	UMB	Akvakultur
BCCR	Bjerknes Centre for Climate Research	UiB	Geofysisk institutt
CASTL	Center for Advanced Study in Theoretical Linguistics	UiT	Institutt for språk og kultur (ISK)
CIPR	Centre for Integrated Petroleum Research	UiB	Kjemisk institutt
CMBN	Centre for Molecular Biology and Neuroscience	UiO	Avd. for molekylærbiologi, klinisk medisin
Q2S	Centre for Quantifiable Quality of Service in Communication Systems	NTNU	Institutt for informasjonssikkerhet og kommunikasjonsteknologi
CBM	Centre for the Biology of Memory	NTNU	No relevant unit
CESOS	Centre for Ships and Ocean Structures	NTNU	Institutt for marin teknikk (IMT)
CSCW	Centre for the Study of Civil War	PRIO	PRIO (Peace Research Institute Oslo)
CMA	Centre of Mathematics for Applications	UiO	Matematisk institutt
ICG	International Centre for Geohazards ICG	NGI	Avd Naturfare (Norwegian Geotechnical Institute)
PGP	Physics of Geological Processes PGP	UiO	Institutt for Geofag
SFF2			
CBC	Centre for Biomedical Computing	Simula	Simula Research Laboratory
CCB	Centre for Cancer Biomedicine	UiO	Institute for Cancer Research, Department of Molecular Cell Biology
CEES	Centre for Ecological and Evolutionary Synthesis	UiO	Institutt for biovitenskap
CGB	Centre for Geobiology	UiB	Institutt for geovitenskap
CIR	Centre for Immune Regulation	UiO	Department of Immunology (IMM)
ESOP	Centre for the study of Equality, Social Organization, and Performance	UiO	Institutt for økonomi
CSMN	Centre for the Study of Mind in Nature	UiO	Filosofidelen, Institutt for filosofi, ide- og kunsthistorie og klassiske språk
CTCC	Centre of Theoretical and Computational Chemistry	UiT	Institutt for kjemi, UiTø
SFF3			
BCSS	Birkeland Center for Space Science	UiB	Institutt for fysikk og teknologi
CAGE	Centre for Arctic Gas Hydrate, Environment and Climate	UiT	Institutt for geovitenskap
AMOS	Centre for Autonomous Marine Operations and Systems	NTNU	Institutt for marin teknikk (IMT)
CBD	Centre for Biodiversity Dynamics	NTNU	Institutt for biologi
CCBIO	Centre for Cancer Biomarkers	UiB	Klinisk institutt 1
CEED	Centre for Earth Evolution and Dynamics	UiO	Institutt for geofag
CERAD	Centre for Environmental Radioactivity	NMBU	Seksjon: Miljøkjemi, Institutt for miljøvitenskap (og naturforvaltning)
CNC	Centre for Neural Computation	NTNU	No relevant unit
CISMACH	Centre for Intervention Science in Maternal and Child Health	UiB	Department of Global Public Health and Primary Care
CEMIR	Centre for Molecular Inflammation Research	NTNU	Institutt for klinisk og molekylær medisin
MultiLing	Centre for Multilingualism in Society across the Lifespan	UiO	Institutt for lingvistiske og nordiske studier
PluriCourts	Centre for the Study of the Legitimate Roles of the Judiciary in the Global Order	UiO	Institutt for offentlig rett
NORMENT	Norwegian Centre for Mental Disorders Research	UiO	Klinikk psykisk helse og avhengighet (PHA), Institutt for klinisk medisin
SFF4			
QuSpin	Center for Low Dissipation Quantum Spintronics	NTNU	Institutt for fysikk
CanCell	Centre for Cancer Cell Reprogramming	UiO	Institute for Cancer Research, Department of Molecular Cell Biology
SapienCE	Centre for Early Sapiens Behaviour	UiB	Institutt for arkeologi, historie, kultur- og religionsvitenskap
FAIR	Centre for Experimental Research on Fairness, Inequality, and Rationality	NHH	Institutt for samfunnsøkonomi
CFH	Centre for Fertility and Health	FHI	Avdeling for barns helse og utvikling; Avdeling for helse og ulikskap; Avdeling for helsefremmende arbeid (Norwegian Institute of Public Health)
RITMO	Centre for Interdisciplinary Studies in Rhythm, Time and Motion	UiO	Institutt for musikkvitenskap
HTH	Hybrid Technology Hub	UiO	Institutt for medisinske basalfag
Hylleraas	Hylleraas Centre for Quantum Molecular Sciences	UIO/UiT	Kjemisk institutt, UiO
PoreLab	Porous Media Laboratory	NTNU/UiO	Institutt for fysikk, NTNU
RoCS	Rosseland Centre for Solar Physics	UiO	Institutt for teoretisk astrofysikk

Table A 4 Degree of multi-disciplinarity by conditions for multi/inter-disciplinarity in the SFF. Means on a scale from 1 to 10. 1= All my research is/has been within one well-established academic field (mono-disciplinary). 10=All my research relates to many different academic fields (multi-disciplinary).

How did you experience your situation in the SFF compared to your previous situation regarding:	No change	Clearly increased	Some-what increased	Some-what decreased	Clearly decreased	Cannot say*	Not relevant	Total
Your participation in interdisciplinary research collaboration								
Mean	5,0	6,5	5,7	5,8	7,5	4,2	5,6	5,9
Std. Deviation	2,720	2,387	2,713	2,573	2,380	2,744	2,700	2,653
N	178	330	185	10	4	17	28	752
Your opportunities to draw on multiple academic fields in your research								
Mean	5,0	6,4	5,8	6,1	6,8	3,9	5,9	5,9
Std. Deviation	2,732	2,518	2,586	1,833	2,387	2,278	2,788	2,643
N	145	303	246	9	5	21	28	757

Source: Survey SFF participants 2019. The table shows average score on Question 20 (Is your research within one or several fields of research? Please use the scale from 1 to 10 below to indicate the mono/multi-disciplinarity of your research) by answer to two of the items in Question 3 (SFF situation compared to respondent's previous situation) regarding changes in involvement in interdisciplinary collaboration and opportunities to draw on multiple academic fields.

* Including 'Too early to say' and 'Cannot remember'.

Table A 5 Percentages of SFF participants who answer that the SFF has 'Clearly increased' their research activities and resources, by SFF performance categories a, b and c.

SFF participants who answer 'Clearly increased' on:	a) Very highly cited			b) Increased collaboration top 42			c) Top score Mid-term evaluation		
	No	Yes	pp diff	No	Yes	pp diff	No	Yes	pp diff
Your opportunities to draw on multiple academic fields in your research	32,9	45,5	**12,6	36,1	42,1	6,0	33,9	42,2	*8,3
Your career opportunities (e.g. chances for future promotion or permanent position)	17,8	28,0	**10,2	24,7	23,4	-1,3	24,6	25,2	0,6
Your involvement in research dissemination outside academia	12,4	22,3	**9,9	16,9	18,8	1,9	16,4	19,0	2,6
Your contribution to advancing scholarly/scientific knowledge on key international research questions in your field	35,6	45,2	*9,6	39,2	42,1	2,9	42,1	42,4	0,3
Your participation in international research collaboration	38,9	47,5	*8,6	38,6	46,3	*7,7	47,5	45,2	-2,3
Your opportunities to address new important research topics	43,8	52,2	*8,4	47,6	49,2	1,6	48,1	50,1	2,0
Research facilities/equipment/data registries/biobanks etc. available to you	33,8	40,8	*7,0	33,7	39,7	6,0	36,8	39,3	2,5
Your participation in interdisciplinary research collaboration	39,8	46,7	6,9	40,4	45,4	5,0	41,1	44,6	3,5
Your involvement in teaching/supervising at PhD level	30,9	36,8	5,9	31,9	35,4	3,5	32,8	33,5	0,7
Your time available for research	19,5	24,8	5,3	18,7	24,3	5,6	26,8	24,5	-2,3
Technical staff/research support services available to you	28,7	33,0	4,3	29,1	32,2	3,1	35,2	31,8	-3,4
Your ability to attract external funding (apart from the SFF funding)	24,4	27,4	3,0	25,3	26,6	1,3	26,2	26,8	0,6
Your involvement in knowledge transfer such as collaboration with users, patenting or consultancy/advice	15,5	17,2	1,7	20,5	14,7	-5,8	21,3	14,0	*-7,3
Your involvement in teaching/supervising at Master level	12,4	13,7	1,3	12,0	13,7	1,7	10,9	12,4	1,5
Your participation in national research collaboration	35,4	36,1	0,7	33,1	36,9	3,8	33,7	34,7	1,0
Your involvement in teaching at Bachelor level	3,6	3,1	-0,5	3,6	3,2	-0,4	4,4	2,6	-1,8
N (respondents)	223-226	318-321		165-166	376-380		181-183	425-429	

Sources: Survey SFF participants 2019, and data from the bibliometric study in Sivertsen et al. 2019, and RCN 2006; 2011 and 2018.

* $p > 0.05$, one-sided t-test. ** $p > 0.01$, one-sided t-test.

Table A 6 Percentages of SFF participants who answer that the SFF has 'Clearly increased' their research activities and resources, by SFF performance category a+b+c, and d.

SFF participants who answer 'Clearly increased' on:	a+b+c) Top score citations, Midterm eval. and increased coll42			d) Much reported interactions		
	No	Yes	pp diff	No	Yes	pp diff
Your opportunities to draw on multiple academic fields in your research	34,1	48,3	**14,2	38,8	40,3	1,5
Your contribution to advancing scholarly/scientific knowledge on key international research questions in your field	36,7	47,1	**10,4	40,0	44,0	4,0
Your participation in interdisciplinary research collaboration	39,8	49,2	*9,4	42,7	44,2	1,5
Your opportunities to address new important research topics	45,0	53,6	*8,6	45,5	52,4	*6,9
Your career opportunities (e.g. chances for future promotion or permanent position)	20,1	28,6	*8,5	24,3	25,5	1,2
Your involvement in research dissemination outside academia	14,6	22,9	**8,3	12,6	22,1	**9,5
Your participation in international research collaboration	40,8	48,1	*7,3	47,1	45,1	-2,0
Research facilities/equipment/data registries/biobanks etc. available to you	34,9	41,8	6,9	38,7	38,4	-0,3
Your time available for research	19,7	26,3	*6,6	25,1	25,3	0,2
Your participation in national research collaboration	33,1	39,2	6,1	30,7	37,1	*6,4
Your ability to attract external funding (apart from the SFF funding)	24,7	28,2	3,5	22,4	29,7	*7,3
Your involvement in teaching/supervising at PhD level	33,3	35,7	2,4	29,2	36,1	*6,9
Your involvement in teaching/supervising at Master level	12,3	14,3	2,0	11,0	12,6	1,6
Technical staff/research support services available to you	30,4	32,3	1,9	29,2	35,3	6,1
Your involvement in teaching at Bachelor level	2,9	3,8	0,9	1,6	4,2	2,6
Your involvement in knowledge transfer such as collaboration with users, patenting or consultancy/advice	17,5	15,2	-2,3	15,7	16,5	0,8
N (respondents)	306-309	235-238		250-255	356-357	

Sources: Survey SFF participants 2019, and data from the bibliometric study in Sivertsen et al. 2019, and RCN 2006; 2011 and 2018, and chapter 5.1 in this report.

* $p > 0.05$, one-sided t-test. ** $p > 0.01$, one-sided t-test.

Appendix 3 Results survey to PhD fellows

Q2 Please indicate your (main) current institutional affiliation.

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
Please indicate your (main) current institutional affiliation.	Industry/private sector	8,4%	5,9%	7,8%
	On leave/not employed	3,1%	0,0%	2,4%
	Other, please specify:	1,2%	0,0%	0,9%
	Public sector (apart from the above)	6,5%	6,9%	6,6%
	Research institute	22,0%	16,7%	20,7%
	University hospital/hospital	9,3%	16,7%	11,1%
University or other higher education institution		49,5%	53,9%	50,6%
N		323	102	425

Q3 Please indicate whether your present work includes research activity.

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
Please indicate whether your present work includes research activity.	Not at all	10,9%	6,9%	9,9%
	To a large extent	68,4%	82,4%	71,8%
	To some extent	20,8%	10,8%	18,3%
N		313	102	415

Q4 What is your current (main) position?

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
What is your current (main) position?	Advisor/analyst/consultant	8,3%	7,8%	8,2%
	Assistant professor/Postdoc/Researcher or similar	39,3%	53,9%	42,9%
	Associate professor/Senior researcher or similar (1. amanuensis/forsker 2)	21,4%	23,5%	21,9%
	Doctoral student	1,6%	1,0%	1,4%
	Full professor/Research professor/Research director or similar	6,7%	3,9%	6,0%
	Medical position/physician/similar	2,9%	1,0%	2,4%
	Other, please specify:	12,5%	6,9%	11,1%
Technician/Research support position		7,3%	2,0%	6,0%
N		313	102	415

Q5 Please indicate whether this is a temporary or permanent position

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
Please indicate whether this is a temporary or permanent position	Permanent/tenured position	58,0%	46,5%	55,2%
	Temporary position	42,0%	53,5%	44,8%
N		312	101	413

Q6 Where is this position?

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
Where is this position?	Europe (apart from Norway)	13,5%	11,9%	13,1%
	In Norway	81,0%	82,2%	81,3%
	Outside Europe	5,5%	5,9%	5,6%
N		310	101	411

Q7 During your PhD-work, where do/did you have your main office?

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
During your PhD-work, where do/did you have your main office?	At a national partner institution (not the institution hosting/coordinating the SFF)	6,3%	3,8%	5,8%
	At an international partner institution	0,9%	0,0%	0,7%
	At the same geographical location as the centre leader, but in another building	14,0%	8,7%	13,0%
	In the same building as the centre leader	76,9%	85,6%	78,5%
	Other, please specify:	1,9%	1,9%	1,9%
N		464	104	568

Q8 Your gender

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
Your gender	Female	46,6%	40,4%	45,4%
	Male	52,6%	59,6%	53,9%
	Other/prefer not to say	0,9%	0,0%	0,7%
N		464	104	568

Q9 Is your research within one or several fields of research?

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
Is your research within one or several fields of research?	1 - All my research is/ has been within one well-established academic field (mono	11,0%	11,5%	11,1%
	2	11,9%	10,4%	11,7%
	3	12,4%	14,6%	12,8%
	4	10,1%	6,3%	9,4%
	5	11,0%	9,4%	10,7%
	6	4,2%	6,3%	4,6%
	7	10,3%	12,5%	10,7%
	8	15,7%	10,4%	14,7%
	9	4,2%	6,3%	4,6%
	10 - All my research relates to many different academic fields (multi-disciplinary)	5,2%	10,4%	6,1%
N/A		4,0%	2,1%	3,6%
N		427	96	523

Q10 The research questions addressed in your PhD thesis

		Field3cat			Total
		Life sciences	SSH	S & T	
The research questions addressed in your PhD thesis	No impacts	27,1%	28,6%	16,3%	21,6%
	Negative impacts	0,6%	0,0%	1,1%	0,8%
	Both negative and positive impacts	8,4%	9,5%	6,7%	7,7%
	Positive impacts	52,4%	53,6%	61,3%	57,3%
	Cannot say	9,6%	6,0%	11,7%	10,2%
	Not relevant	1,8%	2,4%	2,8%	2,4%
N		166	84	282	532

Q10 Your opportunities to work on questions perceived as important in the international research community

		Field3cat			Total
		Life sciences	SSH	S & T	
Your opportunities to work on questions perceived as important in the international research community	No impacts	16,4%	17,9%	13,8%	15,3%
	Negative impacts	0,0%	2,4%	2,1%	1,5%
	Both negative and positive impacts	5,5%	7,1%	5,3%	5,6%
	Positive impacts	71,5%	66,7%	67,7%	68,7%
	Cannot say	6,7%	4,8%	9,6%	7,9%
	Not relevant	0,0%	1,2%	1,4%	0,9%
N		165	84	282	531

Q10 Your advisor(s)' academic qualifications in the field of your thesis

		Field3cat			Total
		Life sciences	SSH	S & T	
Your advisor(s)' academic qualifications in the field of your thesis	No impacts	19,3%	22,6%	20,4%	20,4%
	Negative impacts	3,0%	4,8%	3,5%	3,6%
	Both negative and positive impacts	2,4%	10,7%	4,9%	5,1%
	Positive impacts	62,0%	52,4%	57,7%	58,2%
	Cannot say	12,7%	7,1%	10,9%	10,9%
	Not relevant	0,6%	2,4%	2,5%	1,9%
N		166	84	284	534

Q10 Your opportunities to discuss your work with senior researchers (in addition to your supervisor)

		Field3cat			Total
		Life sciences	SSH	S & T	
Your opportunities to discuss your work with senior researchers (in addition to your supervisor)	No impacts	11,6%	6,0%	11,6%	10,7%
	Negative impacts	1,2%	1,2%	3,5%	2,4%
	Both negative and positive impacts	3,7%	6,0%	6,0%	5,3%
	Positive impacts	78,0%	82,1%	70,8%	74,8%
	Cannot say	4,3%	3,6%	7,0%	5,6%
	Not relevant	1,2%	1,2%	1,1%	1,1%
N		164	84	284	532

Q10 The quality of the researcher training/courses you are/were offered

		Field3cat			Total
		Life sciences	SSH	S & T	
The quality of the researcher training/courses you are/were offered	No impacts	22,9%	28,6%	28,9%	27,0%
	Negative impacts	0,6%	4,8%	1,1%	1,5%
	Both negative and positive impacts	8,4%	14,3%	9,5%	9,9%
	Positive impacts	58,4%	36,9%	48,6%	49,8%
	Cannot say	8,4%	10,7%	8,5%	8,8%
	Not relevant	1,2%	4,8%	3,5%	3,0%
N		166	84	284	534

Q10 Participation in seminars relevant to your research

		Field3cat			Total
		Life sciences	SSH	S & T	
Participation in seminars relevant to your research	No impacts	9,1%	7,1%	12,7%	10,7%
	Negative impacts	1,2%	3,6%	1,8%	1,9%
	Both negative and positive impacts	3,0%	10,7%	6,0%	5,8%
	Positive impacts	78,8%	73,8%	73,2%	75,0%
	Cannot say	7,9%	3,6%	4,2%	5,3%
	Not relevant	0,0%	1,2%	2,1%	1,3%
N		165	84	284	533

Q10 Your opportunities to visit research groups abroad

		Field3cat			Total
		Life sciences	SSH	S & T	
Your opportunities to visit research groups abroad	No impacts	20,0%	15,5%	18,4%	18,5%
	Negative impacts	1,2%	1,2%	0,7%	0,9%
	Both negative and positive impacts	1,8%	2,4%	3,9%	3,0%
	Positive impacts	46,7%	67,9%	57,8%	55,9%
	Cannot say	21,8%	8,3%	13,5%	15,3%
	Not relevant	8,5%	4,8%	5,7%	6,4%
N		165	84	282	531

Q10 Your opportunities to achieve a position abroad after your PhD

		Field3cat			Total
		Life sciences	SSH	S & T	
Your opportunities to achieve a position abroad after your PhD	No impacts	16,3%	14,3%	15,8%	15,7%
	Negative impacts	1,2%	1,2%	2,1%	1,7%
	Both negative and positive impacts	2,4%	2,4%	3,5%	3,0%
	Positive impacts	33,7%	42,9%	36,6%	36,7%
	Cannot say	34,9%	32,1%	28,5%	31,1%
	Not relevant	11,4%	7,1%	13,4%	11,8%
N		166	84	284	534

Q10 Your opportunities to participate in international research collaboration

		Field3cat			Total
		Life sciences	SSH	S & T	
Your opportunities to participate in international research collaboration	No impacts	11,4%	11,9%	13,7%	12,7%
	Negative impacts	1,8%	1,2%	1,8%	1,7%
	Both negative and positive impacts	1,8%	3,6%	2,5%	2,4%
	Positive impacts	64,5%	73,8%	66,5%	67,0%
	Cannot say	18,1%	8,3%	13,0%	13,9%
	Not relevant	2,4%	1,2%	2,5%	2,2%
N		166	84	284	534

Appendix 3

Q10 Your opportunities to collaborate with other junior scholars working on similar/related topics

		Field3cat			Total
		Life sciences	SSH	S & T	
Your opportunities to collaborate with other junior scholars working on similar/related topics	No impacts	18,7%	17,9%	18,3%	18,4%
	Negative impacts	2,4%	1,2%	2,8%	2,4%
	Both negative and positive impacts	4,2%	4,8%	6,7%	5,6%
	Positive impacts	59,0%	64,3%	60,6%	60,7%
	Cannot say	14,5%	8,3%	8,5%	10,3%
	Not relevant	1,2%	3,6%	3,2%	2,6%
N		166	84	284	534

Q10 Your opportunities to participate in interdisciplinary research

		Field3cat			Total
		Life sciences	SSH	S & T	
Your opportunities to participate in interdisciplinary research	No impacts	14,5%	29,8%	18,0%	18,7%
	Negative impacts	0,6%	1,2%	0,7%	0,7%
	Both negative and positive impacts	6,0%	3,6%	3,2%	4,1%
	Positive impacts	60,8%	45,2%	63,7%	59,9%
	Cannot say	16,9%	13,1%	12,3%	13,9%
	Not relevant	1,2%	7,1%	2,1%	2,6%
N		166	84	284	534

Q10 Your opportunities to collaborate with (potential) users of your research (outside academia)

		Field3cat			Total
		Life sciences	SSH	S & T	
Your opportunities to collaborate with (potential) users of your research (outside academia)	No impacts	23,0%	45,2%	26,8%	28,5%
	Negative impacts	1,8%	2,4%	2,5%	2,3%
	Both negative and positive impacts	3,6%	6,0%	3,9%	4,1%
	Positive impacts	27,9%	23,8%	39,1%	33,2%
	Cannot say	35,2%	17,9%	19,4%	24,0%
	Not relevant	8,5%	4,8%	8,5%	7,9%
N		165	84	284	533

Q10 Your opportunities to gain competences in research management

		Field3cat			Total
		Life sciences	SSH	S & T	
Your opportunities to gain competences in research management	No impacts	27,7%	38,1%	34,5%	33,0%
	Negative impacts	3,0%	3,6%	2,8%	3,0%
	Both negative and positive impacts	6,0%	6,0%	6,0%	6,0%
	Positive impacts	34,9%	28,6%	31,3%	32,0%
	Cannot say	24,1%	17,9%	19,4%	20,6%
	Not relevant	4,2%	6,0%	6,0%	5,4%
N		166	84	284	534

Q10 Your involvement in research dissemination outside academia

		Field3cat			Total
		Life sciences	SSH	S & T	
Your involvement in research dissemination outside academia	No impacts	33,1%	39,3%	37,0%	36,1%
	Negative impacts	2,4%	3,6%	2,8%	2,8%
	Both negative and positive impacts	4,2%	4,8%	4,6%	4,5%
	Positive impacts	34,3%	33,3%	31,7%	32,8%
	Cannot say	21,7%	14,3%	18,3%	18,7%
	Not relevant	4,2%	4,8%	5,6%	5,1%
N		166	84	284	534

Appendix 3

Q10 Your involvement in knowledge transfer such as collaboration with users, patenting or consultancy/advice

		Field3cat			Total
		Life sciences	SSH	S & T	
Your involvement in knowledge transfer such as collaboration with users, patenting or consultancy/advice	No impacts	30,7%	42,9%	33,1%	33,9%
	Negative impacts	1,2%	1,2%	1,4%	1,3%
	Both negative and positive impacts	4,8%	3,6%	1,8%	3,0%
	Positive impacts	21,7%	13,1%	25,0%	22,1%
	Cannot say	30,7%	17,9%	21,1%	23,6%
	Not relevant	10,8%	21,4%	17,6%	16,1%
N		166	84	284	534

Q10 The research questions addressed in your PhD thesis

		Gender			Total
		Female	Male	Other/prefer not to say	
The research questions addressed in your PhD thesis	No impacts	30,2%	14,7%	25,0%	21,6%
	Negative impacts	0,4%	1,0%	0,0%	0,8%
	Both negative and positive impacts	7,7%	7,5%	25,0%	7,7%
	Positive impacts	49,4%	64,5%	0,0%	57,3%
	Cannot say	9,8%	10,2%	25,0%	10,2%
	Not relevant	2,6%	2,0%	25,0%	2,4%
N		235	293	4	532

Q10 Your opportunities to work on questions perceived as important in the international research community

		Gender			Total
		Female	Male	Other/prefer not to say	
Your opportunities to work on questions perceived as important in the international research community	No impacts	18,4%	12,6%	25,0%	15,3%
	Negative impacts	1,3%	1,7%	0,0%	1,5%
	Both negative and positive impacts	6,0%	5,5%	0,0%	5,6%
	Positive impacts	65,0%	72,4%	25,0%	68,7%
	Cannot say	8,1%	7,5%	25,0%	7,9%
	Not relevant	1,3%	0,3%	25,0%	0,9%
N		234	293	4	531

Q10 Your advisor(s)' academic qualifications in the field of your thesis

		Gender			Total
		Female	Male	Other/prefer not to say	
Your advisor(s)' academic qualifications in the field of your thesis	No impacts	24,2%	17,0%	50,0%	20,4%
	Negative impacts	4,7%	2,4%	25,0%	3,6%
	Both negative and positive impacts	3,4%	6,1%	25,0%	5,1%
	Positive impacts	54,7%	61,9%	0,0%	58,2%
	Cannot say	11,4%	10,5%	0,0%	10,9%
	Not relevant	1,7%	2,0%	0,0%	1,9%
N		236	294	4	534

Q10 Your opportunities to discuss your work with senior researchers (in addition to your supervisor)

		Gender			Total
		Female	Male	Other/prefer not to say	
Your opportunities to discuss your work with senior researchers (in addition to your supervisor)	No impacts	13,2%	8,8%	0,0%	10,7%
	Negative impacts	2,6%	2,4%	0,0%	2,4%
	Both negative and positive impacts	2,6%	7,1%	25,0%	5,3%
	Positive impacts	73,5%	75,9%	75,0%	74,8%
	Cannot say	6,0%	5,4%	0,0%	5,6%
	Not relevant	2,1%	0,3%	0,0%	1,1%
N		234	294	4	532

Q10 The quality of the researcher training/courses you are/were offered

		Gender			Total
		Female	Male	Other/prefer not to say	
The quality of the researcher training/courses you are/were offered	No impacts	31,8%	22,8%	50,0%	27,0%
	Negative impacts	1,7%	1,4%	0,0%	1,5%
	Both negative and positive impacts	6,8%	12,2%	25,0%	9,9%
	Positive impacts	45,8%	53,4%	25,0%	49,8%
	Cannot say	11,0%	7,1%	0,0%	8,8%
	Not relevant	3,0%	3,1%	0,0%	3,0%
N		236	294	4	534

Q10 Participation in seminars relevant to your research

		Gender			Total
		Female	Male	Other/prefer not to say	
Participation in seminars relevant to your research	No impacts	12,3%	9,5%	0,0%	10,7%
	Negative impacts	1,3%	1,7%	50,0%	1,9%
	Both negative and positive impacts	4,7%	6,8%	0,0%	5,8%
	Positive impacts	74,5%	75,9%	50,0%	75,0%
	Cannot say	6,0%	4,8%	0,0%	5,3%
	Not relevant	1,3%	1,4%	0,0%	1,3%
N		235	294	4	533

Q10 Your opportunities to visit research groups abroad

		Gender			Total
		Female	Male	Other/prefer not to say	
Your opportunities to visit research groups abroad	No impacts	20,9%	16,7%	0,0%	18,5%
	Negative impacts	0,9%	1,0%	0,0%	0,9%
	Both negative and positive impacts	1,3%	4,1%	25,0%	3,0%
	Positive impacts	49,6%	61,1%	50,0%	55,9%
	Cannot say	19,7%	11,6%	25,0%	15,3%
	Not relevant	7,7%	5,5%	0,0%	6,4%
N		234	293	4	531

Q10 Your opportunities to achieve a position abroad after your PhD

		Gender			Total
		Female	Male	Other/prefer not to say	
Your opportunities to achieve a position abroad after your PhD	No impacts	18,2%	13,6%	25,0%	15,7%
	Negative impacts	1,3%	2,0%	0,0%	1,7%
	Both negative and positive impacts	3,0%	3,1%	0,0%	3,0%
	Positive impacts	34,3%	38,8%	25,0%	36,7%
	Cannot say	32,6%	29,6%	50,0%	31,1%
	Not relevant	10,6%	12,9%	0,0%	11,8%
N		236	294	4	534

Q10 Your opportunities to participate in international research collaboration

		Gender			Total
		Female	Male	Other/prefer not to say	
Your opportunities to participate in international research collaboration	No impacts	14,8%	10,9%	25,0%	12,7%
	Negative impacts	1,7%	1,7%	0,0%	1,7%
	Both negative and positive impacts	1,7%	3,1%	0,0%	2,4%
	Positive impacts	63,6%	69,7%	75,0%	67,0%
	Cannot say	15,3%	12,9%	0,0%	13,9%
	Not relevant	3,0%	1,7%	0,0%	2,2%
N		236	294	4	534

Q10 Your opportunities to collaborate with other junior scholars working on similar/related topics

		Gender			Total
		Female	Male	Other/prefer not to say	
Your opportunities to collaborate with other junior scholars working on similar/related topics	No impacts	20,8%	16,0%	50,0%	18,4%
	Negative impacts	2,5%	2,4%	0,0%	2,4%
	Both negative and positive impacts	3,8%	6,8%	25,0%	5,6%
	Positive impacts	57,6%	63,6%	25,0%	60,7%
	Cannot say	11,9%	9,2%	0,0%	10,3%
	Not relevant	3,4%	2,0%	0,0%	2,6%
N		236	294	4	534

Q10 Your opportunities to participate in interdisciplinary research

		Gender			Total
		Female	Male	Other/prefer not to say	
Your opportunities to participate in interdisciplinary research	No impacts	21,6%	16,3%	25,0%	18,7%
	Negative impacts	0,8%	0,7%	0,0%	0,7%
	Both negative and positive impacts	3,8%	4,1%	25,0%	4,1%
	Positive impacts	56,8%	62,6%	50,0%	59,9%
	Cannot say	14,4%	13,6%	0,0%	13,9%
	Not relevant	2,5%	2,7%	0,0%	2,6%
N		236	294	4	534

Appendix 3

Q10 Your opportunities to collaborate with (potential) users of your research (outside academia)

		Gender			Total
		Female	Male	Other/prefer not to say	
Your opportunities to collaborate with (potential) users of your research (outside academia)	No impacts	32,2%	24,9%	75,0%	28,5%
	Negative impacts	3,4%	1,4%	0,0%	2,3%
	Both negative and positive impacts	3,4%	4,8%	0,0%	4,1%
	Positive impacts	23,3%	41,6%	0,0%	33,2%
	Cannot say	29,2%	19,8%	25,0%	24,0%
	Not relevant	8,5%	7,5%	0,0%	7,9%
N		236	293	4	533

Q10 Your opportunities to gain competences in research management

		Gender			Total
		Female	Male	Other/prefer not to say	
Your opportunities to gain competences in research management	No impacts	34,3%	31,6%	50,0%	33,0%
	Negative impacts	3,8%	2,0%	25,0%	3,0%
	Both negative and positive impacts	5,5%	6,5%	0,0%	6,0%
	Positive impacts	33,1%	31,6%	0,0%	32,0%
	Cannot say	17,8%	22,8%	25,0%	20,6%
	Not relevant	5,5%	5,4%	0,0%	5,4%
N		236	294	4	534

Q10 Your involvement in research dissemination outside academia

		Gender			Total
		Female	Male	Other/prefer not to say	
Your involvement in research dissemination outside academia	No impacts	36,4%	35,7%	50,0%	36,1%
	Negative impacts	3,8%	2,0%	0,0%	2,8%
	Both negative and positive impacts	4,2%	4,8%	0,0%	4,5%
	Positive impacts	33,1%	32,3%	50,0%	32,8%
	Cannot say	16,9%	20,4%	0,0%	18,7%
	Not relevant	5,5%	4,8%	0,0%	5,1%
N		236	294	4	534

Q10 Your involvement in knowledge transfer such as collaboration with users, patenting or consultancy/advice

		Gender			Total
		Female	Male	Other/prefer not to say	
Your involvement in knowledge transfer such as collaboration with users, patenting or consultancy/advice	No impacts	36,0%	31,6%	75,0%	33,9%
	Negative impacts	1,7%	1,0%	0,0%	1,3%
	Both negative and positive impacts	2,1%	3,7%	0,0%	3,0%
	Positive impacts	16,5%	26,9%	0,0%	22,1%
	Cannot say	25,4%	22,4%	0,0%	23,6%
	Not relevant	18,2%	14,3%	25,0%	16,1%
N		236	294	4	534

Q11 Please indicate the basis for your replies to the question above

		Field3cat			Total
		Life sciences	SSH	S & T	
Please indicate the basis for your replies to the question above	I compared with the situation for PhD	44,5%	45,2%	46,5%	45,7%
	In the above question I compared with a	37,2%	39,3%	34,2%	35,9%
	Not relevant/cannot say	18,3%	15,5%	19,4%	18,4%
N		164	84	284	532

Q12 To what extent do/did the SFF have similar impact for all PhD-students in your department, regardless of ..

		Field3cat			Total
		Life sciences	SSH	S & T	
To what extent do/did the SFF have similar impact for all PhD-students in your department, regardless of whether they are/were formally part of the SFF?	Cannot say/not relevant	42,2%	36,9%	34,5%	37,3%
	Not at all	6,0%	3,6%	9,5%	7,5%
	To a high extent	16,3%	21,4%	15,1%	16,5%
	To some extent	35,5%	38,1%	40,8%	38,8%
N		166	84	284	534

Appendix 3

Q13 My present research builds on the research I did for my PhD

		Field3cat			Total
		Life sciences	SSH	S & T	
My present research builds on the research I did for my PhD	Not at all	13,7%	7,9%	9,9%	10,6%
	To some extent	37,3%	38,1%	48,4%	43,4%
	To a high extent	39,2%	49,2%	37,0%	39,8%
	Cannot say	2,9%	0,0%	0,5%	1,1%
	Not relevant	6,9%	4,8%	4,2%	5,0%
N		102	63	192	357

Q13 I presently work on research topics different from those for my PhD

		Field3cat			Total
		Life sciences	SSH	S & T	
I presently work on research topics different from those for my PhD	Not at all	13,7%	11,1%	7,7%	10,0%
	To some extent	44,1%	49,2%	53,6%	50,1%
	To a high extent	33,3%	33,3%	34,0%	33,7%
	Cannot say	2,9%	0,0%	1,0%	1,4%
	Not relevant	5,9%	6,3%	3,6%	4,7%
N		102	63	194	359

Q13 I still collaborate with the same senior researchers in Norway as during my PhD

		Field3cat			Total
		Life sciences	SSH	S & T	
I still collaborate with the same senior researchers in Norway as during my PhD	Not at all	26,7%	31,7%	22,8%	25,5%
	To some extent	33,7%	36,5%	38,3%	36,7%
	To a high extent	34,7%	27,0%	34,7%	33,3%
	Cannot say	1,0%	0,0%	1,0%	0,8%
	Not relevant	4,0%	4,8%	3,1%	3,6%
N		101	63	193	357

Q13 I still collaborate with the same senior researchers abroad as during my PhD

		Field3cat			Total
		Life sciences	SSH	S & T	
I still collaborate with the same senior researchers abroad as during my PhD	Not at all	40,2%	22,2%	35,1%	34,3%
	To some extent	26,5%	50,8%	37,7%	36,8%
	To a high extent	9,8%	12,7%	14,1%	12,6%
	Cannot say	2,0%	0,0%	1,0%	1,1%
	Not relevant	21,6%	14,3%	12,0%	15,2%
N		102	63	191	356

Q13 My present research builds on the research I did for my PhD

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
My present research builds on the research I did for my PhD	Not at all	11,3%	8,7%	10,6%
	To some extent	45,7%	37,0%	43,4%
	To a high extent	36,6%	48,9%	39,8%
	Cannot say	1,1%	1,1%	1,1%
	Not relevant	5,3%	4,3%	5,0%
N		265	92	357

Q13 I presently work on research topics different from those for my PhD

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
I presently work on research topics different from those for my PhD	Not at all	9,7%	10,9%	10,0%
	To some extent	49,1%	53,3%	50,1%
	To a high extent	34,5%	31,5%	33,7%
	Cannot say	1,9%	0,0%	1,4%
	Not relevant	4,9%	4,3%	4,7%
N		267	92	359

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Q13 I still collaborate with the same senior researchers in Norway as during my PhD

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
I still collaborate with the same senior researchers in Norway as during my PhD	Not at all	26,8%	21,7%	25,5%
	To some extent	36,6%	37,0%	36,7%
	To a high extent	31,7%	38,0%	33,3%
	Cannot say	1,1%	0,0%	0,8%
	Not relevant	3,8%	3,3%	3,6%
N		265	92	357

Q13 I still collaborate with the same senior researchers abroad as during my PhD

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
I still collaborate with the same senior researchers abroad as during my PhD	Not at all	34,5%	33,7%	34,3%
	To some extent	36,4%	38,0%	36,8%
	To a high extent	12,5%	13,0%	12,6%
	Cannot say	1,1%	1,1%	1,1%
	Not relevant	15,5%	14,1%	15,2%
N		264	92	356

Q14 My research in the SFF has been important for my career

		Field3cat			Total
		Life sciences	SSH	S & T	
My research in the SFF has been important for my career	Strongly disagree	2,9%	3,1%	2,0%	2,4%
	Partly disagree	4,8%	4,6%	2,0%	3,2%
	Neither disagree nor agree	11,5%	4,6%	8,5%	8,6%
	Partly agree	25,0%	26,2%	22,9%	24,1%
	Strongly agree	51,9%	52,3%	57,2%	54,9%
	Not relevant/too early to say	3,8%	9,2%	7,5%	6,8%
N		104	65	201	370

Q14 My academic network from the SFF has been important for my career

		Field3cat			Total
		Life sciences	SSH	S & T	
My academic network from the SFF has been important for my career	Strongly disagree	6,7%	7,7%	4,5%	5,7%
	Partly disagree	9,6%	6,2%	6,0%	7,0%
	Neither disagree nor agree	15,4%	9,2%	14,4%	13,8%
	Partly agree	24,0%	30,8%	29,9%	28,4%
	Strongly agree	39,4%	43,1%	37,8%	39,2%
	Not relevant/too early to say	4,8%	3,1%	7,5%	5,9%
N		104	65	201	370

Q14 The prestige of the SFF has been important for my career

		Field3cat			Total
		Life sciences	SSH	S & T	
The prestige of the SFF has been important for my career	Strongly disagree	9,6%	6,2%	9,0%	8,6%
	Partly disagree	10,6%	18,5%	11,9%	12,7%
	Neither disagree nor agree	20,2%	12,3%	20,4%	18,9%
	Partly agree	36,5%	35,4%	22,9%	28,9%
	Strongly agree	19,2%	23,1%	23,4%	22,2%
	Not relevant/too early to say	3,8%	4,6%	12,4%	8,6%
N		104	65	201	370

Q14 The opportunities I was given in the SFF has been important for my motivation for a further researcher career

		Field3cat			Total
		Life sciences	SSH	S & T	
The opportunities I was given in the SFF has been important for my motivation for a further researcher career	Strongly disagree	6,7%	10,8%	6,5%	7,3%
	Partly disagree	6,7%	13,8%	5,0%	7,0%
	Neither disagree nor agree	17,3%	10,8%	20,4%	17,8%
	Partly agree	34,6%	12,3%	24,9%	25,4%
	Strongly agree	29,8%	44,6%	39,3%	37,6%
	Not relevant/too early to say	4,8%	7,7%	4,0%	4,9%
N		104	65	201	370

Appendix 3

Q14 I think my career would have been the same if I had done my PhD work (on a similar topic) in an ...

		Field3cat			Total
		Life sciences	SSH	S & T	
I think my career would have been the same if I had done my PhD work (on a similar topic) in an environment that was not an SFF	Strongly disagree	18,3%	23,1%	11,5%	15,4%
	Partly disagree	29,8%	21,5%	24,5%	25,5%
	Neither disagree nor agree	16,3%	12,3%	21,5%	18,4%
	Partly agree	21,2%	16,9%	24,5%	22,2%
	Strongly agree	11,5%	18,5%	9,0%	11,4%
	Not relevant/too early to say	2,9%	7,7%	9,0%	7,0%
N		104	65	200	369

Q14 My research in the SFF has been important for my career

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
My research in the SFF has been important for my career	Strongly disagree	1,8%	4,3%	2,4%
	Partly disagree	3,6%	2,2%	3,2%
	Neither disagree nor agree	7,6%	12,0%	8,6%
	Partly agree	24,5%	22,8%	24,1%
	Strongly agree	54,7%	55,4%	54,9%
	Not relevant/too early to say	7,9%	3,3%	6,8%
N		278	92	370

Q14 My academic network from the SFF has been important for my career

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
My academic network from the SFF has been important for my career	Strongly disagree	4,7%	8,7%	5,7%
	Partly disagree	7,2%	6,5%	7,0%
	Neither disagree nor agree	13,3%	15,2%	13,8%
	Partly agree	31,7%	18,5%	28,4%
	Strongly agree	36,3%	47,8%	39,2%
	Not relevant/too early to say	6,8%	3,3%	5,9%
N		278	92	370

Q14 The prestige of the SFF has been important for my career

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
The prestige of the SFF has been important for my career	Strongly disagree	7,9%	10,9%	8,6%
	Partly disagree	15,1%	5,4%	12,7%
	Neither disagree nor agree	18,0%	21,7%	18,9%
	Partly agree	29,9%	26,1%	28,9%
	Strongly agree	19,1%	31,5%	22,2%
	Not relevant/too early to say	10,1%	4,3%	8,6%
N		278	92	370

Q14 The opportunities I was given in the SFF has been important for my motivation for a further researcher career

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
The opportunities I was given in the SFF has been important for my motivation for a further researcher career	Strongly disagree	7,2%	7,6%	7,3%
	Partly disagree	7,6%	5,4%	7,0%
	Neither disagree nor agree	18,0%	17,4%	17,8%
	Partly agree	24,1%	29,3%	25,4%
	Strongly agree	37,4%	38,0%	37,6%
	Not relevant/too early to say	5,8%	2,2%	4,9%
N		278	92	370

Q14 I think my career would have been the same if I had done my PhD work (on a similar topic) in an environment that was not an SFF

		Postdoc (in at least 1 SFF)		Total
		No	Yes	
I think my career would have been the same if I had done my PhD work (on a similar topic) in an environment that was not an SFF	Strongly disagree	15,2%	16,3%	15,4%
	Partly disagree	21,7%	37,0%	25,5%
	Neither disagree nor agree	18,8%	17,4%	18,4%
	Partly agree	23,8%	17,4%	22,2%
	Strongly agree	13,4%	5,4%	11,4%
	Not relevant/too early to say	7,2%	6,5%	7,0%
N		277	92	369

Appendix 4 Results survey to SFF participants and stakeholders

Q3a Your time available for research

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your time available for research	No change	56,9%	29,9%	36,7%	40,4%
	Clearly increased	12,9%	33,9%	24,7%	23,7%
	Somewhat increased	12,0%	13,2%	18,1%	15,5%
	Somewhat decreased	7,2%	6,3%	5,9%	6,3%
	Clearly decreased	3,3%	3,4%	3,4%	3,4%
	Cannot say/Too early to say/Cannot	1,9%	5,2%	3,4%	3,4%
	Not relevant	5,7%	8,0%	7,7%	7,3%
N		209	174	441	824

Q3b Research facilities/equipment/data registries/biobanks etc. available to you

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Research facilities/equipment/data registries/biobanks etc. available to you	No change	21,6%	22,0%	24,9%	23,5%
	Clearly increased	38,9%	37,0%	38,5%	38,3%
	Somewhat increased	29,8%	24,3%	24,5%	25,8%
	Somewhat decreased	2,9%	1,7%	1,1%	1,7%
	Clearly decreased	0,0%	0,0%	0,2%	0,1%
	Cannot say/Too early to say/Cannot	1,4%	2,9%	2,9%	2,6%
	Not relevant	5,3%	12,1%	7,7%	8,0%
N		208	173	441	822

Q3c Technical staff/research support services available to you

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Technical staff/research support services available to you	No change	28,7%	23,3%	26,0%	26,1%
	Clearly increased	30,6%	43,0%	30,6%	33,2%
	Somewhat increased	31,6%	22,7%	28,5%	28,1%
	Somewhat decreased	1,9%	1,7%	4,1%	3,1%
	Clearly decreased	1,0%	1,2%	0,9%	1,0%
	Cannot say/Too early to say/Cannot	2,4%	3,5%	3,0%	2,9%
	Not relevant	3,8%	4,7%	6,8%	5,6%
N		209	172	438	819

Q3d Your participation in national research collaboration

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your participation in national research collaboration	No change	22,1%	29,1%	21,2%	23,1%
	Clearly increased	32,2%	26,2%	37,7%	33,9%
	Somewhat increased	34,6%	26,7%	29,1%	30,0%
	Somewhat decreased	1,4%	2,3%	2,0%	1,9%
	Clearly decreased	1,4%	2,3%	0,9%	1,3%
	Cannot say/Too early to say/Cannot	3,4%	5,2%	3,2%	3,6%
	Not relevant	4,8%	8,1%	5,9%	6,1%
N		208	172	443	823

Q3e Your participation in international research collaboration

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your participation in international research collaboration	No change	25,2%	18,4%	18,6%	20,2%
	Clearly increased	38,1%	55,2%	43,8%	44,7%
	Somewhat increased	29,0%	19,0%	28,3%	26,5%
	Somewhat decreased	1,9%	0,0%	2,7%	1,9%
	Clearly decreased	0,5%	1,1%	0,9%	0,8%
	Cannot say/Too early to say/Cannot	2,4%	2,3%	2,7%	2,5%
	Not relevant	2,9%	4,0%	2,9%	3,2%
N		210	174	441	825

Appendix 4

Q3f Your participation in interdisciplinary research collaboration

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your participation in interdisciplinary research collaboration	No change	26,7%	23,4%	22,3%	23,7%
	Clearly increased	36,2%	42,1%	46,2%	42,8%
	Somewhat increased	30,5%	25,1%	22,3%	25,0%
	Somewhat decreased	0,5%	0,0%	2,1%	1,2%
	Clearly decreased	0,0%	1,8%	0,2%	0,5%
	Cannot say/Too early to say/Cannot	2,9%	1,2%	2,5%	2,3%
	Not relevant	3,3%	6,4%	4,3%	4,5%
N		210	171	439	820

Q3g Your involvement in knowledge transfer such as collaboration with users, patenting or ...

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your involvement in knowledge transfer such as collaboration with users, patenting or consultancy/advice	No change	37,8%	35,3%	36,2%	36,4%
	Clearly increased	20,1%	13,3%	13,8%	15,3%
	Somewhat increased	25,8%	19,7%	21,5%	22,2%
	Somewhat decreased	2,4%	1,2%	0,9%	1,3%
	Clearly decreased	0,0%	1,2%	1,1%	0,8%
	Cannot say/Too early to say/Cannot	6,2%	5,2%	5,0%	5,3%
	Not relevant	7,7%	24,3%	21,5%	18,6%
N		209	173	442	824

Q3h Your involvement in research dissemination outside academia

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your involvement in research dissemination outside academia	No change	44,0%	37,9%	39,7%	40,4%
	Clearly increased	14,0%	20,1%	17,9%	17,4%
	Somewhat increased	30,0%	27,6%	23,8%	26,2%
	Somewhat decreased	1,0%	2,3%	2,5%	2,1%
	Clearly decreased	1,4%	2,3%	1,1%	1,5%
	Cannot say/Too early to say/Cannot	4,3%	4,0%	6,6%	5,5%
	Not relevant	5,3%	5,7%	8,4%	7,1%
N		207	174	441	822

Q3i Your involvement in teaching at Bachelor level

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your involvement in teaching at Bachelor level	No change	53,4%	40,5%	46,5%	47,0%
	Clearly increased	0,0%	2,9%	3,6%	2,5%
	Somewhat increased	6,3%	4,0%	6,1%	5,7%
	Somewhat decreased	5,3%	8,7%	5,9%	6,3%
	Clearly decreased	3,4%	20,8%	7,9%	9,5%
	Cannot say/Too early to say/Cannot	3,4%	1,7%	2,9%	2,8%
	Not relevant	28,4%	21,4%	27,1%	26,2%
N		208	173	443	824

Q3j Your involvement in teaching/supervising at Master level

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your involvement in teaching/supervising at Master level	No change	48,8%	38,7%	35,2%	39,4%
	Clearly increased	7,7%	4,6%	15,1%	11,0%
	Somewhat increased	16,7%	12,7%	20,1%	17,7%
	Somewhat decreased	3,8%	15,6%	6,3%	7,6%
	Clearly decreased	3,3%	11,0%	2,7%	4,6%
	Cannot say/Too early to say/Cannot	2,9%	1,2%	2,3%	2,2%
	Not relevant	16,7%	16,2%	18,3%	17,5%
N		209	173	443	825

Appendix 4

Q3k Your involvement in teaching/supervising at PhD level

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your involvement in teaching/supervising at PhD level	No change	35,4%	35,5%	19,5%	26,9%
	Clearly increased	23,4%	22,1%	36,7%	30,3%
	Somewhat increased	22,0%	19,2%	22,4%	21,7%
	Somewhat decreased	1,4%	1,2%	2,3%	1,8%
	Clearly decreased	1,0%	3,5%	0,2%	1,1%
	Cannot say/Too early to say/Cannot	3,3%	1,2%	1,6%	1,9%
	Not relevant	13,4%	17,4%	17,2%	16,3%
N		209	172	441	822

Q3l Your opportunities to address new important research topics

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your opportunities to address new important research topics	No change	17,7%	13,8%	11,3%	13,5%
	Clearly increased	40,7%	53,4%	51,6%	49,2%
	Somewhat increased	33,0%	23,6%	28,1%	28,4%
	Somewhat decreased	1,4%	1,7%	1,8%	1,7%
	Clearly decreased	0,5%	0,6%	1,4%	1,0%
	Cannot say/Too early to say/Cannot	2,9%	2,3%	2,5%	2,5%
	Not relevant	3,8%	4,6%	3,4%	3,8%
N		209	174	442	825

Q3m Your contribution to advancing scholarly/scientific knowledge on key international research questions...

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your contribution to advancing scholarly/scientific knowledge on key international research questions in your field	No change	23,9%	11,5%	16,3%	17,2%
	Clearly increased	30,6%	50,0%	43,0%	41,3%
	Somewhat increased	35,9%	28,7%	30,3%	31,4%
	Somewhat decreased	1,4%	1,1%	1,1%	1,2%
	Clearly decreased	1,0%	0,6%	0,7%	0,7%
	Cannot say/Too early to say/Cannot	3,8%	4,0%	5,7%	4,8%
	Not relevant	3,3%	4,0%	2,9%	3,3%
N		209	174	442	825

Q3n Your opportunities to draw on multiple academic fields in your research

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your opportunities to draw on multiple academic fields in your research	No change	22,1%	21,3%	17,2%	19,3%
	Clearly increased	35,1%	39,1%	41,8%	39,5%
	Somewhat increased	32,7%	31,6%	32,3%	32,2%
	Somewhat decreased	1,9%	0,6%	0,9%	1,1%
	Clearly decreased	1,0%	0,6%	0,7%	0,7%
	Cannot say/Too early to say/Cannot	3,4%	1,7%	3,2%	2,9%
	Not relevant	3,8%	5,2%	4,1%	4,2%
N		208	174	443	825

Q3o Your ability to attract external funding (apart from the SFF funding)

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your ability to attract external funding (apart from the SFF funding)	No change	26,8%	28,2%	26,6%	27,0%
	Clearly increased	25,8%	31,6%	22,6%	25,3%
	Somewhat increased	25,4%	16,7%	25,3%	23,5%
	Somewhat decreased	0,0%	0,0%	1,4%	0,7%
	Clearly decreased	1,4%	1,1%	2,5%	1,9%
	Cannot say/Too early to say/Cannot	9,1%	14,4%	12,0%	11,7%
	Not relevant	11,5%	8,0%	9,7%	9,8%
N		209	174	443	826

Appendix 4

Q3p Your career opportunities (e.g. chances for future promotion or permanent position)

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Your career opportunities (e.g. chances for future promotion or permanent position)	No change	37,8%	27,6%	28,0%	30,4%
	Clearly increased	21,5%	33,3%	23,5%	25,1%
	Somewhat increased	19,1%	16,1%	22,6%	20,3%
	Somewhat decreased	2,9%	1,7%	2,3%	2,3%
	Clearly decreased	1,0%	3,4%	1,8%	1,9%
	Cannot say/Too early to say/Cannot	7,7%	8,0%	9,9%	9,0%
	Not relevant	10,0%	9,8%	12,0%	11,0%
N		209	174	443	826

Q3a Your time available for research

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your time available for research	No change	40,6%	40,1%	40,4%
	Clearly increased	22,6%	26,1%	23,7%
	Somewhat increased	16,2%	14,0%	15,5%
	Somewhat decreased	6,7%	5,4%	6,3%
	Clearly decreased	4,4%	1,2%	3,4%
	Cannot say/Too early to say/Cannot remember	3,5%	3,1%	3,4%
	Not relevant	6,0%	10,1%	7,3%
N		567	257	824

Q3b Research facilities/equipment/data registries/biobanks etc. available to you

		Postdoc (in at least 1 SFF)		Total
		0	1	
Research facilities/equipment/data registries/biobanks etc. available to you	No change	25,0%	20,2%	23,5%
	Clearly increased	37,4%	40,3%	38,3%
	Somewhat increased	25,7%	26,0%	25,8%
	Somewhat decreased	0,9%	3,5%	1,7%
	Clearly decreased	0,2%	0,0%	0,1%
	Cannot say/Too early to say/Cannot remember	2,8%	1,9%	2,6%
	Not relevant	8,0%	8,1%	8,0%
N		564	258	822

Q3c Technical staff/research support services available to you

		Postdoc (in at least 1 SFF)		Total
		0	1	
Technical staff/research support services available to you	No change	27,5%	23,1%	26,1%
	Clearly increased	33,5%	32,5%	33,2%
	Somewhat increased	27,0%	30,6%	28,1%
	Somewhat decreased	3,0%	3,1%	3,1%
	Clearly decreased	0,5%	2,0%	1,0%
	Cannot say/Too early to say/Cannot remember	2,8%	3,1%	2,9%
	Not relevant	5,7%	5,5%	5,6%
N		564	255	819

Q3d Your participation in national research collaboration

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your participation in national research collaboration	No change	23,2%	22,9%	23,1%
	Clearly increased	33,3%	35,3%	33,9%
	Somewhat increased	33,1%	23,3%	30,0%
	Somewhat decreased	1,6%	2,7%	1,9%
	Clearly decreased	1,1%	1,9%	1,3%
	Cannot say/Too early to say/Cannot remember	3,4%	4,3%	3,6%
	Not relevant	4,4%	9,7%	6,1%
N		565	258	823

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Q3e Your participation in international research collaboration

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your participation in international research collaboration	No change	19,7%	21,4%	20,2%
	Clearly increased	46,1%	41,6%	44,7%
	Somewhat increased	27,8%	23,7%	26,5%
	Somewhat decreased	0,7%	4,7%	1,9%
	Clearly decreased	0,7%	1,2%	0,8%
	Cannot say/Too early to say/Cannot remember	2,5%	2,7%	2,5%
	Not relevant	2,5%	4,7%	3,2%
N		568	257	825

Q3f Your participation in interdisciplinary research collaboration

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your participation in interdisciplinary research collaboration	No change	22,5%	26,2%	23,7%
	Clearly increased	44,7%	38,7%	42,8%
	Somewhat increased	25,5%	23,8%	25,0%
	Somewhat decreased	0,9%	2,0%	1,2%
	Clearly decreased	0,2%	1,2%	0,5%
	Cannot say/Too early to say/Cannot remember	2,3%	2,3%	2,3%
	Not relevant	3,9%	5,9%	4,5%
N		564	256	820

Q3g Your involvement in knowledge transfer such as collaboration with users, patenting or ...

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your involvement in knowledge transfer such as collaboration with users, patenting or consultancy/ advice	No change	37,9%	33,1%	36,4%
	Clearly increased	16,2%	13,2%	15,3%
	Somewhat increased	24,9%	16,3%	22,2%
	Somewhat decreased	0,5%	3,1%	1,3%
	Clearly decreased	0,4%	1,9%	0,8%
	Cannot say/Too early to say/Cannot remember	5,5%	5,1%	5,3%
	Not relevant	14,6%	27,2%	18,6%
N		567	257	824

Q3h Your involvement in research dissemination outside academia

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your involvement in research dissemination outside academia	No change	39,4%	42,6%	40,4%
	Clearly increased	19,5%	12,8%	17,4%
	Somewhat increased	27,0%	24,4%	26,2%
	Somewhat decreased	2,0%	2,3%	2,1%
	Clearly decreased	0,7%	3,1%	1,5%
	Cannot say/Too early to say/Cannot remember	5,7%	5,0%	5,5%
	Not relevant	5,9%	9,7%	7,1%
N		564	258	822

Q3i Your involvement in teaching at Bachelor level

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your involvement in teaching at Bachelor level	No change	51,4%	37,2%	47,0%
	Clearly increased	2,3%	3,1%	2,5%
	Somewhat increased	5,7%	5,8%	5,7%
	Somewhat decreased	6,7%	5,4%	6,3%
	Clearly decreased	8,5%	11,6%	9,5%
	Cannot say/Too early to say/Cannot remember	2,3%	3,9%	2,8%
	Not relevant	23,1%	32,9%	26,2%
N		566	258	824

Appendix 4

Q3j Your involvement in teaching/supervising at Master level

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your involvement in teaching/supervising at Master level	No change	43,2%	31,0%	39,4%
	Clearly increased	10,4%	12,4%	11,0%
	Somewhat increased	17,6%	17,8%	17,7%
	Somewhat decreased	8,5%	5,8%	7,6%
	Clearly decreased	3,4%	7,4%	4,6%
	Cannot say/Too early to say/Cannot remember	1,4%	3,9%	2,2%
	Not relevant	15,5%	21,7%	17,5%
N		567	258	825

Q3k Your involvement in teaching/supervising at PhD level

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your involvement in teaching/supervising at PhD level	No change	26,0%	28,8%	26,9%
	Clearly increased	33,5%	23,3%	30,3%
	Somewhat increased	22,3%	20,2%	21,7%
	Somewhat decreased	1,9%	1,6%	1,8%
	Clearly decreased	0,4%	2,7%	1,1%
	Cannot say/Too early to say/Cannot remember	1,6%	2,7%	1,9%
	Not relevant	14,3%	20,6%	16,3%
N		565	257	822

Q3l Your opportunities to address new important research topics

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your opportunities to address new important research topics	No change	12,7%	15,1%	13,5%
	Clearly increased	48,9%	50,0%	49,2%
	Somewhat increased	30,2%	24,4%	28,4%
	Somewhat decreased	1,2%	2,7%	1,7%
	Clearly decreased	0,7%	1,6%	1,0%
	Cannot say/Too early to say/Cannot remember	2,8%	1,9%	2,5%
	Not relevant	3,5%	4,3%	3,8%
N		567	258	825

Q3m Your contribution to advancing scholarly/scientific knowledge on key international research questions ...

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your contribution to advancing scholarly/scientific knowledge on key international research questions in your field	No change	16,5%	18,7%	17,2%
	Clearly increased	43,5%	36,6%	41,3%
	Somewhat increased	31,2%	31,9%	31,4%
	Somewhat decreased	0,5%	2,7%	1,2%
	Clearly decreased	0,4%	1,6%	0,7%
	Cannot say/Too early to say/Cannot remember	4,9%	4,7%	4,8%
	Not relevant	3,0%	3,9%	3,3%
N		568	257	825

Q3n Your opportunities to draw on multiple academic fields in your research

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your opportunities to draw on multiple academic fields in your research	No change	18,3%	21,4%	19,3%
	Clearly increased	39,6%	39,3%	39,5%
	Somewhat increased	33,8%	28,8%	32,2%
	Somewhat decreased	0,5%	2,3%	1,1%
	Clearly decreased	0,4%	1,6%	0,7%
	Cannot say/Too early to say/Cannot remember	3,3%	1,9%	2,9%
	Not relevant	4,0%	4,7%	4,2%
N		568	257	825

Appendix 4

Q3o Your ability to attract external funding (apart from the SFF funding)

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your ability to attract external funding (apart from the SFF funding)	No change	26,1%	29,1%	27,0%
	Clearly increased	26,9%	21,7%	25,3%
	Somewhat increased	24,8%	20,5%	23,5%
	Somewhat decreased	0,7%	0,8%	0,7%
	Clearly decreased	2,3%	1,2%	1,9%
	Cannot say/Too early to say/Cannot remember	10,7%	14,0%	11,7%
	Not relevant	8,5%	12,8%	9,8%
N		568	258	826

Q3p Your career opportunities (e.g. chances for future promotion or permanent position)

		Postdoc (in at least 1 SFF)		Total
		0	1	
Your career opportunities (e.g. chances for future promotion or permanent position)	No change	34,9%	20,5%	30,4%
	Clearly increased	21,5%	32,9%	25,1%
	Somewhat increased	19,0%	23,3%	20,3%
	Somewhat decreased	1,6%	3,9%	2,3%
	Clearly decreased	1,4%	3,1%	1,9%
	Cannot say/Too early to say/Cannot remember	8,1%	10,9%	9,0%
	Not relevant	13,6%	5,4%	11,0%
N		568	258	826

Q4 More resources (time, staff, facilities)

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
More resources (time, staff, facilities)	Important	68,8%	65,5%	62,8%	64,6%
	Partly important	25,0%	26,2%	28,2%	27,1%
	Not important	1,6%	2,4%	4,8%	3,6%
	Not relevant	3,1%	2,4%	0,5%	1,5%
	Cannot say	1,6%	3,6%	3,7%	3,3%
N		64	84	188	336

Q4 New collaboration/new partners

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
New collaboration/new partners	Important	64,1%	76,5%	79,9%	76,0%
	Partly important	32,8%	22,4%	19,6%	22,8%
	Not important	3,1%	0,0%	0,5%	0,9%
	Not relevant	0,0%	1,2%	0,0%	0,3%
N		64	85	189	338

Q4 Increased visibility of my research

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Increased visibility of my research	Important	59,4%	57,8%	54,5%	56,3%
	Partly important	29,7%	30,1%	34,9%	32,7%
	Not important	9,4%	3,6%	6,9%	6,5%
	Not relevant	0,0%	2,4%	0,5%	0,9%
	Cannot say	1,6%	6,0%	3,2%	3,6%
N		64	83	189	336

Q4 Increased ambitions for my research

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Increased ambitions for my research	Important	60,9%	57,6%	60,8%	60,1%
	Partly important	28,1%	27,1%	27,0%	27,2%
	Not important	9,4%	8,2%	6,3%	7,4%
	Not relevant	0,0%	5,9%	3,7%	3,6%
	Cannot say	1,6%	1,2%	2,1%	1,8%
N		64	85	189	338

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Q4 Increased risk-taking in my research

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
Increased risk-taking in my research	Important	45,3%	37,3%	42,2%	41,6%
	Partly important	29,7%	20,5%	26,7%	25,7%
	Not important	15,6%	24,1%	14,4%	17,1%
	Not relevant	1,6%	10,8%	8,0%	7,5%
	Cannot say	7,8%	7,2%	8,6%	8,1%
N		64	83	187	334

Q5 The working environment is/was based on sharing of ideas and research results

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
The working environment is/was based on sharing of ideas and research results	Agree	54,4%	66,0%	59,4%	59,5%
	Partly agree	27,7%	22,0%	26,8%	26,1%
	Neither agree nor disagree	7,7%	5,0%	6,9%	6,7%
	Partly disagree	4,1%	1,9%	2,6%	2,8%
	Disagree	5,1%	2,5%	3,6%	3,7%
	Cannot say	0,0%	1,9%	0,7%	0,8%
	Not relevant	1,0%	0,6%	0,0%	0,4%
N		195	159	421	775

Q5 The working environment is/was based on team work

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
The working environment is/was based on team work	Agree	50,8%	42,5%	46,1%	46,5%
	Partly agree	30,8%	35,0%	33,7%	33,2%
	Neither agree nor disagree	7,2%	13,1%	8,3%	9,0%
	Partly disagree	6,2%	3,1%	6,2%	5,5%
	Disagree	4,6%	3,8%	4,3%	4,3%
	Cannot say	0,0%	1,9%	1,2%	1,0%
	Not relevant	0,5%	0,6%	0,2%	0,4%
N		195	160	421	776

Q5 I do/did most of my research alone

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
I do/did most of my research alone	Agree	12,9%	20,0%	10,8%	13,2%
	Partly agree	21,1%	21,9%	18,2%	19,7%
	Neither agree nor disagree	8,8%	9,4%	10,0%	9,6%
	Partly disagree	16,5%	18,1%	18,4%	17,9%
	Disagree	38,1%	27,5%	41,1%	37,6%
	Cannot say	0,0%	1,3%	0,5%	0,5%
	Not relevant	2,6%	1,9%	1,0%	1,6%
N		194	160	418	772

Q5 The centre and the planned research has/had sufficient funding

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
The centre and the planned research has/had sufficient funding	Agree	39,2%	70,0%	48,7%	50,7%
	Partly agree	28,9%	12,5%	27,2%	24,6%
	Neither agree nor disagree	8,2%	1,9%	5,7%	5,6%
	Partly disagree	10,3%	2,5%	5,5%	6,1%
	Disagree	3,1%	1,3%	3,3%	2,8%
	Cannot say	10,3%	11,9%	8,8%	9,8%
	Not relevant	0,0%	0,0%	0,7%	0,4%
N		194	160	419	773

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Q5 The centre leader is/was competent to lead the SFF

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
The centre leader is/was competent to lead the SFF	Agree	71,3%	73,9%	71,7%	72,1%
	Partly agree	14,4%	9,9%	13,5%	13,0%
	Neither agree nor disagree	4,1%	5,6%	3,1%	3,9%
	Partly disagree	6,2%	5,6%	4,0%	4,9%
	Disagree	4,1%	2,5%	5,5%	4,5%
	Cannot say	0,0%	2,5%	2,1%	1,7%
N		195	161	421	777

Q5 The centre leader is/was good at promoting the research from the SFF in society

		FieldAll3Cat			Total
		Life sciences	SSH	S&T	
The centre leader is/was good at promoting the research from the SFF in society	Agree	55,4%	64,0%	59,6%	59,5%
	Partly agree	19,5%	18,0%	18,1%	18,4%
	Neither agree nor disagree	10,3%	5,0%	7,4%	7,6%
	Partly disagree	5,1%	2,5%	4,0%	4,0%
	Disagree	3,6%	3,7%	2,9%	3,2%
	Cannot say	5,6%	6,2%	7,8%	6,9%
	Not relevant	0,5%	0,6%	0,2%	0,4%
N		195	161	421	777

Q7a Resource allocation within the department/unit

		SFF relation		Total
		Only host	SFF participant	
Resource allocation within the department/unit	No impacts	5,4%	5,6%	5,5%
	High positive impacts	20,5%	39,4%	32,4%
	Moderate positive impacts	17,8%	29,8%	25,4%
	Both negative and positive impacts	26,3%	10,7%	16,5%
	Moderate negative impacts	10,1%	2,8%	5,5%
	High negative impacts	6,4%	1,0%	3,0%
	Too early to say/Cannot say	13,5%	10,7%	11,8%
N		297	503	800

Q7b The building of strong research topics/research lines within the department/unit

		SFF relation		Total
		Only host	SFF participant	
The building of strong research topics/research lines within the department/unit	No impacts	5,1%	4,8%	4,9%
	High positive impacts	43,5%	54,7%	50,6%
	Moderate positive impacts	23,6%	27,3%	26,0%
	Both negative and positive impacts	13,4%	6,0%	8,7%
	Moderate negative impacts	4,1%	2,8%	3,3%
	High negative impacts	2,4%	0,6%	1,3%
	Too early to say/Cannot say	7,9%	3,8%	5,3%
N		292	501	793

Q7c The plurality of strong research topics/research lines within the department/unit

		SFF relation		Total
		Only host	SFF participant	
The plurality of strong research topics/research lines within the department/unit	No impacts	5,4%	7,0%	6,4%
	High positive impacts	19,7%	37,9%	31,2%
	Moderate positive impacts	29,6%	34,7%	32,8%
	Both negative and positive impacts	16,7%	10,0%	12,5%
	Moderate negative impacts	10,9%	3,2%	6,0%
	High negative impacts	5,1%	0,6%	2,3%
	Too early to say/Cannot say	12,6%	6,6%	8,8%
N		294	501	795

Q7d The international prestige of the department/unit

		SFF relation		Total
		Only host	SFF participant	
The international prestige of the department/unit	No impacts	6,5%	4,4%	5,2%
	High positive impacts	43,5%	60,8%	54,4%
	Moderate positive impacts	34,0%	27,3%	29,8%
	Both negative and positive impacts	3,4%	1,2%	2,0%
	Moderate negative impacts	1,4%	0,8%	1,0%
	High negative impacts	0,0%	0,6%	0,4%
	Too early to say/Cannot say	11,2%	4,8%	7,2%
N		294	498	792

Q7e The international prestige of the research groups involved in the SFF

		SFF relation		Total
		Only host	SFF participant	
The international prestige of the research groups involved in the SFF	No impacts	4,4%	3,8%	4,0%
	High positive impacts	56,3%	67,9%	63,6%
	Moderate positive impacts	22,7%	20,8%	21,5%
	Both negative and positive impacts	3,7%	2,0%	2,6%
	Moderate negative impacts	0,7%	0,4%	0,5%
	High negative impacts	0,0%	0,4%	0,3%
	Too early to say/Cannot say	12,2%	4,8%	7,5%
N		295	501	796

Q7f The recruitment of top qualified staff to the research topics of the SFF

		SFF relation		Total
		Only host	SFF participant	
The recruitment of top qualified staff to the research topics of the SFF	No impacts	4,1%	5,8%	5,2%
	High positive impacts	42,0%	58,8%	52,6%
	Moderate positive impacts	31,4%	24,8%	27,2%
	Both negative and positive impacts	7,8%	4,2%	5,5%
	Moderate negative impacts	2,4%	1,0%	1,5%
	High negative impacts	0,0%	0,4%	0,3%
	Too early to say/Cannot say	12,3%	5,0%	7,7%
N		293	500	793

Q7g The recruitment of top qualified staff to other research topics in the department/unit

		SFF relation		Total
		Only host	SFF participant	
The recruitment of top qualified staff to other research topics in the department/unit	No impacts	20,9%	18,0%	19,0%
	High positive impacts	9,9%	21,8%	17,4%
	Moderate positive impacts	25,3%	30,1%	28,4%
	Both negative and positive impacts	13,7%	5,4%	8,4%
	Moderate negative impacts	7,2%	2,2%	4,0%
	High negative impacts	4,8%	1,2%	2,5%
	Too early to say/Cannot say	18,2%	21,4%	20,2%
N		292	501	793

Q7h The overall recruitment to the department/unit

		SFF relation		Total
		Only host	SFF participant	
The overall recruitment to the department/unit	No impacts	10,6%	10,2%	10,3%
	High positive impacts	16,8%	32,5%	26,7%
	Moderate positive impacts	32,5%	33,9%	33,4%
	Both negative and positive impacts	14,4%	5,4%	8,7%
	Moderate negative impacts	6,2%	1,6%	3,3%
	High negative impacts	1,4%	1,2%	1,3%
	Too early to say/Cannot say	18,2%	15,2%	16,3%
N		292	501	793

Appendix 4

Q7i Competence-building in areas important for innovation, sustainability or public sector in Norway

		SFF relation		Total
		Only host	SFF participant	
Competence-building in areas important for innovation, sustainability or public sector in Norway	No impacts	17,9%	12,3%	14,4%
	High positive impacts	18,3%	33,7%	28,0%
	Moderate positive impacts	31,4%	33,1%	32,5%
	Both negative and positive impacts	6,6%	2,6%	4,1%
	Moderate negative impacts	4,8%	1,0%	2,4%
	High negative impacts	0,7%	0,6%	0,6%
	Too early to say/Cannot say	20,3%	16,6%	18,0%
N		290	495	785

Q7j The content of the department's study programmes/courses

		SFF relation		Total
		Only host	SFF participant	
The content of the department's study programmes/courses	No impacts	16,8%	12,9%	14,4%
	High positive impacts	11,7%	24,4%	19,7%
	Moderate positive impacts	29,6%	39,9%	36,1%
	Both negative and positive impacts	17,9%	5,0%	9,8%
	Moderate negative impacts	7,6%	1,8%	3,9%
	High negative impacts	2,1%	0,4%	1,0%
	Too early to say/Cannot say	14,4%	15,5%	15,1%
N		291	496	787

Q7k The department's/unit.s ability to attract interesting speakers to seminars/lectures

		SFF relation		Total
		Only host	SFF participant	
The department's/unit.s ability to attract interesting speakers to seminars/lectures	No impacts	8,6%	5,4%	6,6%
	High positive impacts	39,9%	60,6%	52,9%
	Moderate positive impacts	33,0%	29,0%	30,5%
	Both negative and positive impacts	6,5%	1,4%	3,3%
	Moderate negative impacts	0,3%	0,0%	0,1%
	High negative impacts	0,3%	0,2%	0,3%
	Too early to say/Cannot say	11,3%	3,4%	6,3%
N		291	497	788

Q7l The department's/unit's ability to address key scientific challenges

		SFF relation		Total
		Only host	SFF participant	
The department's/unit's ability to address key scientific challenges	No impacts	8,7%	6,7%	7,4%
	High positive impacts	28,1%	55,2%	45,3%
	Moderate positive impacts	37,2%	27,8%	31,3%
	Both negative and positive impacts	7,6%	3,4%	5,0%
	Moderate negative impacts	4,2%	1,2%	2,3%
	High negative impacts	1,4%	0,4%	0,8%
	Too early to say/Cannot say	12,8%	5,2%	8,0%
N		288	496	784

Q7m The department's/unit's ability to address important social challenges

		SFF relation		Total
		Only host	SFF participant	
The department's/unit's ability to address important social challenges	No impacts	24,8%	16,0%	19,3%
	High positive impacts	15,5%	28,2%	23,5%
	Moderate positive impacts	22,4%	35,5%	30,7%
	Both negative and positive impacts	11,4%	5,1%	7,4%
	Moderate negative impacts	3,4%	1,4%	2,2%
	High negative impacts	2,4%	1,0%	1,5%
	Too early to say/Cannot say	20,0%	12,8%	15,5%
N		290	493	783

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Q7n The department's/unit's ability to produce reliable/robust research results

		SFF relation		Total
		Only host	SFF participant	
The department's/unit's ability to produce reliable/robust research results	No impacts	10,3%	7,7%	8,7%
	High positive impacts	35,1%	56,2%	48,3%
	Moderate positive impacts	33,0%	24,4%	27,6%
	Both negative and positive impacts	6,5%	3,8%	4,8%
	Moderate negative impacts	3,1%	0,4%	1,4%
	High negative impacts	0,3%	0,8%	0,6%
	Too early to say/Cannot say	11,7%	6,7%	8,5%
N		291	495	786

Q7o The department's interaction with society outside academia

		SFF relation		Total
		Only host	SFF participant	
The department's interaction with society outside academia	No impacts	15,2%	13,2%	13,9%
	High positive impacts	14,5%	28,4%	23,2%
	Moderate positive impacts	38,3%	40,6%	39,7%
	Both negative and positive impacts	6,6%	3,7%	4,7%
	Moderate negative impacts	2,4%	1,0%	1,5%
	High negative impacts	1,7%	0,2%	0,8%
	Too early to say/Cannot say	21,4%	13,0%	16,1%
N		290	493	783

Q7p The department's support/goodwill from outside academia

		SFF relation		Total
		Only host	SFF participant	
The department's support/goodwill from outside academia	No impacts	13,7%	11,9%	12,6%
	High positive impacts	17,5%	27,6%	23,9%
	Moderate positive impacts	32,0%	35,9%	34,4%
	Both negative and positive impacts	8,9%	4,8%	6,4%
	Moderate negative impacts	2,1%	0,8%	1,3%
	High negative impacts	1,0%	0,2%	0,5%
	Too early to say/Cannot say	24,7%	18,8%	21,0%
N		291	496	787

Q7q Other impacts on the department's activities. Please specify below.

		SFF relation		Total
		Only host	SFF participant	
Other impacts on the department's activities. Please specify below	No impacts	18,4%	24,1%	21,7%
	High positive impacts	6,4%	8,1%	7,4%
	Moderate positive impacts	6,0%	4,4%	5,1%
	Both negative and positive impacts	8,1%	5,0%	6,3%
	Moderate negative impacts	4,7%	1,6%	2,9%
	High negative impacts	3,8%	2,5%	3,1%
	Too early to say/Cannot say	52,6%	54,4%	53,6%
N		234	320	554

Q7 Resource allocation within the department/unit

		Host only by field			Total
		Life sciences	SSH	S&T	
Resource allocation within the department/unit	No impacts	8,2%	3,4%	5,1%	5,4%
	High positive impacts	15,1%	24,1%	21,2%	20,5%
	Moderate positive impacts	16,4%	14,9%	20,4%	17,8%
	Both negative and positive impacts	27,4%	25,3%	26,3%	26,3%
	Moderate negative impacts	5,5%	9,2%	13,1%	10,1%
	High negative impacts	4,1%	6,9%	7,3%	6,4%
	Too early to say/Cannot say	23,3%	16,1%	6,6%	13,5%
N		73	87	137	297

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Q7 The building of strong research topics/research lines within the department/unit

		Host only by field			Total
		Life sciences	SSH	S&T	
The building of strong research topics/research lines within the department/unit	No impacts	4,2%	6,0%	5,1%	5,1%
	High positive impacts	43,7%	41,7%	44,5%	43,5%
	Moderate positive impacts	29,6%	21,4%	21,9%	23,6%
	Both negative and positive impacts	11,3%	14,3%	13,9%	13,4%
	Moderate negative impacts	0,0%	3,6%	6,6%	4,1%
	High negative impacts	0,0%	4,8%	2,2%	2,4%
	Too early to say/Cannot say	11,3%	8,3%	5,8%	7,9%
N		71	84	137	292

Q7 The plurality of strong research topics/research lines within the department/unit

		Host only by field			Total
		Life sciences	SSH	S&T	
The plurality of strong research topics/research lines within the department/unit	No impacts	2,8%	4,7%	7,2%	5,4%
	High positive impacts	19,7%	18,8%	20,3%	19,7%
	Moderate positive impacts	35,2%	27,1%	28,3%	29,6%
	Both negative and positive impacts	16,9%	17,6%	15,9%	16,7%
	Moderate negative impacts	5,6%	15,3%	10,9%	10,9%
	High negative impacts	2,8%	4,7%	6,5%	5,1%
	Too early to say/Cannot say	16,9%	11,8%	10,9%	12,6%
N		71	85	138	294

Q7 The international prestige of the department/unit

		Host only by field			Total
		Life sciences	SSH	S&T	
The international prestige of the department/unit	No impacts	7,0%	4,7%	7,3%	6,5%
	High positive impacts	36,6%	52,3%	41,6%	43,5%
	Moderate positive impacts	40,8%	24,4%	36,5%	34,0%
	Both negative and positive impacts	1,4%	2,3%	5,1%	3,4%
	Moderate negative impacts	0,0%	1,2%	2,2%	1,4%
	Too early to say/Cannot say	14,1%	15,1%	7,3%	11,2%
N		71	86	137	294

Q7 The international prestige of the research groups involved in the SFF

		Host only by field			Total
		Life sciences	SSH	S&T	
The international prestige of the research groups involved in the SFF	No impacts	5,6%	7,0%	2,2%	4,4%
	High positive impacts	59,2%	61,6%	51,4%	56,3%
	Moderate positive impacts	21,1%	14,0%	29,0%	22,7%
	Both negative and positive impacts	1,4%	2,3%	5,8%	3,7%
	Moderate negative impacts	0,0%	1,2%	0,7%	0,7%
	Too early to say/Cannot say	12,7%	14,0%	10,9%	12,2%
N		71	86	138	295

Q7 The recruitment of top qualified staff to the research topics of the SFF

		Host only by field			Total
		Life sciences	SSH	S&T	
The recruitment of top qualified staff to the research topics of the SFF	No impacts	5,7%	2,4%	4,3%	4,1%
	High positive impacts	28,6%	52,9%	42,0%	42,0%
	Moderate positive impacts	45,7%	20,0%	31,2%	31,4%
	Both negative and positive impacts	4,3%	10,6%	8,0%	7,8%
	Moderate negative impacts	0,0%	3,5%	2,9%	2,4%
	Too early to say/Cannot say	15,7%	10,6%	11,6%	12,3%
N		70	85	138	293

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Q7 The recruitment of top qualified staff to other research topics in the department/unit

		Host only by field			Total
		Life sciences	SSH	S&T	
The recruitment of top qualified staff to other research topics in the department/unit	No impacts	18,3%	18,8%	23,5%	20,9%
	High positive impacts	4,2%	17,6%	8,1%	9,9%
	Moderate positive impacts	33,8%	20,0%	24,3%	25,3%
	Both negative and positive impacts	16,9%	10,6%	14,0%	13,7%
	Moderate negative impacts	4,2%	9,4%	7,4%	7,2%
	High negative impacts	2,8%	7,1%	4,4%	4,8%
	Too early to say/Cannot say	19,7%	16,5%	18,4%	18,2%
N		71	85	136	292

Q7 The overall recruitment to the department/unit

		Host only by field			Total
		Life sciences	SSH	S&T	
The overall recruitment to the department/unit	No impacts	11,3%	8,2%	11,8%	10,6%
	High positive impacts	8,5%	22,4%	17,6%	16,8%
	Moderate positive impacts	47,9%	24,7%	29,4%	32,5%
	Both negative and positive impacts	8,5%	18,8%	14,7%	14,4%
	Moderate negative impacts	1,4%	7,1%	8,1%	6,2%
	High negative impacts	0,0%	2,4%	1,5%	1,4%
	Too early to say/Cannot say	22,5%	16,5%	16,9%	18,2%
N		71	85	136	292

Q7 Competence-building in areas important for innovation, sustainability or public sector in Norway

		Host only by field			Total
		Life sciences	SSH	S&T	
Competence-building in areas important for innovation, sustainability or public sector in Norway	No impacts	13,0%	23,8%	16,8%	17,9%
	High positive impacts	23,2%	13,1%	19,0%	18,3%
	Moderate positive impacts	40,6%	22,6%	32,1%	31,4%
	Both negative and positive impacts	4,3%	4,8%	8,8%	6,6%
	Moderate negative impacts	1,4%	7,1%	5,1%	4,8%
	High negative impacts	0,0%	2,4%	0,0%	0,7%
	Too early to say/Cannot say	17,4%	26,2%	18,2%	20,3%
N		69	84	137	290

Q7 The content of the department's study programmes/courses

		Host only by field			Total
		Life sciences	SSH	S&T	
The content of the department's study programmes/courses	No impacts	8,7%	12,9%	23,4%	16,8%
	High positive impacts	14,5%	14,1%	8,8%	11,7%
	Moderate positive impacts	42,0%	21,2%	28,5%	29,6%
	Both negative and positive impacts	15,9%	22,4%	16,1%	17,9%
	Moderate negative impacts	0,0%	12,9%	8,0%	7,6%
	High negative impacts	0,0%	4,7%	1,5%	2,1%
	Too early to say/Cannot say	18,8%	11,8%	13,9%	14,4%
N		69	85	137	291

Q7 The department's/unit's ability to attract interesting speakers to seminars/lectures

		Host only by field			Total
		Life sciences	SSH	S&T	
The department's/unit's ability to attract interesting speakers to seminars/lectures	No impacts	4,3%	7,1%	11,7%	8,6%
	High positive impacts	41,4%	46,4%	35,0%	39,9%
	Moderate positive impacts	32,9%	33,3%	32,8%	33,0%
	Both negative and positive impacts	5,7%	3,6%	8,8%	6,5%
	Moderate negative impacts	0,0%	0,0%	0,7%	0,3%
	High negative impacts	0,0%	0,0%	0,7%	0,3%
	Too early to say/Cannot say	15,7%	9,5%	10,2%	11,3%
N		70	84	137	291

Appendix 4

Q7 The department's/unit's ability to address key scientific challenges

		Host only by field			Total
		Life sciences	SSH	S&T	
The department's/unit's ability to address key scientific challenges	No impacts	1,4%	12,2%	10,2%	8,7%
	High positive impacts	31,9%	25,6%	27,7%	28,1%
	Moderate positive impacts	42,0%	29,3%	39,4%	37,2%
	Both negative and positive impacts	7,2%	7,3%	8,0%	7,6%
	Moderate negative impacts	5,8%	2,4%	4,4%	4,2%
	High negative impacts	0,0%	3,7%	0,7%	1,4%
	Too early to say/Cannot say	11,6%	19,5%	9,5%	12,8%
N		69	82	137	288

Q7 The department's/unit's ability to address important social challenges

		Host only by field			Total
		Life sciences	SSH	S&T	
The department's/unit's ability to address important social challenges	No impacts	20,0%	23,8%	27,9%	24,8%
	High positive impacts	12,9%	19,0%	14,7%	15,5%
	Moderate positive impacts	27,1%	16,7%	23,5%	22,4%
	Both negative and positive impacts	15,7%	8,3%	11,0%	11,4%
	Moderate negative impacts	4,3%	3,6%	2,9%	3,4%
	High negative impacts	0,0%	4,8%	2,2%	2,4%
	Too early to say/Cannot say	20,0%	23,8%	17,6%	20,0%
N		70	84	136	290

Q7 The department's/unit's ability to produce reliable/robust research results

		Host only by field			Total
		Life sciences	SSH	S&T	
The department's/unit's ability to produce reliable/robust research results	No impacts	7,1%	9,5%	12,4%	10,3%
	High positive impacts	41,4%	38,1%	29,9%	35,1%
	Moderate positive impacts	31,4%	28,6%	36,5%	33,0%
	Both negative and positive impacts	8,6%	4,8%	6,6%	6,5%
	Moderate negative impacts	0,0%	3,6%	4,4%	3,1%
	High negative impacts	0,0%	1,2%	0,0%	0,3%
	Too early to say/Cannot say	11,4%	14,3%	10,2%	11,7%
N		70	84	137	291

Q7 The department's interaction with society outside academia

		Host only by field			Total
		Life sciences	SSH	S&T	
The department's interaction with society outside academia	No impacts	10,1%	15,3%	17,6%	15,2%
	High positive impacts	13,0%	17,6%	13,2%	14,5%
	Moderate positive impacts	52,2%	27,1%	38,2%	38,3%
	Both negative and positive impacts	5,8%	5,9%	7,4%	6,6%
	Moderate negative impacts	0,0%	4,7%	2,2%	2,4%
	High negative impacts	0,0%	4,7%	0,7%	1,7%
	Too early to say/Cannot say	18,8%	24,7%	20,6%	21,4%
N		69	85	136	290

Q7 The department's support/goodwill from outside academia

		Host only by field			Total
		Life sciences	SSH	S&T	
The department's support/goodwill from outside academia	No impacts	11,4%	14,3%	14,6%	13,7%
	High positive impacts	24,3%	16,7%	14,6%	17,5%
	Moderate positive impacts	37,1%	27,4%	32,1%	32,0%
	Both negative and positive impacts	5,7%	9,5%	10,2%	8,9%
	Moderate negative impacts	0,0%	3,6%	2,2%	2,1%
	High negative impacts	0,0%	3,6%	0,0%	1,0%
	Too early to say/Cannot say	21,4%	25,0%	26,3%	24,7%
N		70	84	137	291

Q8 The number of participating researchers

		Field3cat			Total
		Life sciences	SSH	S&T	
The number of participating researchers	Too large	8,3%	0,0%	5,0%	4,3%
	Appropriate	83,3%	92,9%	85,0%	87,0%
	Too small	8,3%	7,1%	10,0%	8,7%
N		12	14	20	46

Q8 The number of participating research organisations in Norway

		Field3cat			Total
		Life sciences	SSH	S&T	
The number of participating research organisations in Norway	Too large	0,0%	0,0%	5,0%	2,2%
	Appropriate	100,0%	92,9%	95,0%	95,7%
	Too small	0,0%	7,1%	0,0%	2,2%
N		12	14	20	46

Q8 The number of participating research organisations abroad

		Field3cat			Total
		Life sciences	SSH	S&T	
The number of participating research organisations abroad	Appropriate	83,3%	100,0%	95,0%	93,5%
	Too small	16,7%	0,0%	5,0%	6,5%
N		12	14	20	46

Q9 The SFF's relationship to the head of the unit/department hosting the SFF

		Field3cat			Total
		Life sciences	SSH	S&T	
The SFF's relationship to the head of the unit/department hosting the SFF*	Good	91,7%	50,0%	85,0%	76,1%
	Neither good nor bad	8,3%	42,9%	10,0%	19,6%
	Bad	0,0%	7,1%	5,0%	4,3%
N		12	14	20	46

Q9 The SFF's relationship to the faculty leadership (if a research institute, please relate your answer to the..)

		Field3cat			Total
		Life sciences	SSH	S&T	
The SFF's relationship to the faculty leadership (if a research institute, please relate your answer to the leadership of the institute)	Good	66,7%	35,7%	90,0%	67,4%
	Neither good nor bad	25,0%	42,9%	10,0%	23,9%
	Bad	8,3%	21,4%	0,0%	8,7%
N		12	14	20	46

Q9 The financial support from your institution

		Field3cat			Total
		Life sciences	SSH	S&T	
The financial support from your institution	Good	58,3%	64,3%	85,0%	71,7%
	Neither good nor bad	33,3%	28,6%	15,0%	23,9%
	Bad	8,3%	7,1%	0,0%	4,3%
N		12	14	20	46

Q9 The administrative support from your institution during the SFF period

		Field3cat			Total
		Life sciences	SSH	S&T	
The administrative support from your institution during the SFF period	Good	66,7%	64,3%	65,0%	65,2%
	Neither good nor bad	16,7%	21,4%	30,0%	23,9%
	Bad	16,7%	7,1%	5,0%	8,7%
	Cannot say	0,0%	7,1%	0,0%	2,2%
N		12	14	20	46

Appendix 4

Q10 Shared physical facilities/offices

		Field3cat			Total
		Life sciences	SSH	S&T	
Shared physical facilities/offices	Not at all	0,0%	7,1%	5,3%	4,4%
	To some extent	25,0%	35,7%	42,1%	35,6%
	To a high extent	66,7%	57,1%	52,6%	57,8%
	Not relevant	8,3%	0,0%	0,0%	2,2%
N		12	14	19	45

Q10 Joint social arrangements (lunches, dinners, etc.)

		Field3cat			Total
		Life sciences	SSH	S&T	
Joint social arrangements (lunches, dinners, etc.)	Not at all	0,0%	7,1%	5,3%	4,4%
	To some extent	41,7%	7,1%	31,6%	26,7%
	To a high extent	50,0%	85,7%	63,2%	66,7%
	Not relevant	8,3%	0,0%	0,0%	2,2%
N		12	14	19	45

Q10 Joint scientific seminars and workshop

		Field3cat			Total
		Life sciences	SSH	S&T	
Joint scientific seminars and workshop	Not at all	0,0%	7,1%	0,0%	2,2%
	To some extent	16,7%	7,1%	15,8%	13,3%
	To a high extent	75,0%	85,7%	84,2%	82,2%
	Not relevant	8,3%	0,0%	0,0%	2,2%
N		12	14	19	45

Q11 Which feature of the SFF-funding is/was the most important for the realisation of research in the SFF? (select one option)

		Field3cat			Total
		Life sciences	SSH	S&T	
Which feature of the SFF-funding is/was the most important for the realisation of research in the SFF? (select one option)	The flexibility of the funding	8,3%	7,1%	0,0%	4,3%
	The long term financing	66,7%	92,9%	90,0%	84,8%
	The size of the funding	25,0%	0,0%	10,0%	10,9%
N		12	14	20	46

Q 12 Hosting and supporting the SFF(s) implies/implied less financial means for other research

		FieldDeptHead			Total
		Life sciences	SSH	S&T	
Hosting and supporting the SFF(s) implies/implied less financial means for other research lines/topics in the department/unit	Not at all	35,3%	73,3%	38,1%	47,2%
	To some extent	52,9%	13,3%	38,1%	35,8%
	To a high extent	0,0%	6,7%	9,5%	5,7%
	Cannot say	11,8%	0,0%	9,5%	7,5%
	Not relevant	0,0%	6,7%	4,8%	3,8%
N		17	15	21	53

Q 12 Hosting and supporting the SFF(s) implies/implied less recruitment positions for other research

		FieldDeptHead			Total
		Life sciences	SSH	S&T	
Hosting and supporting the SFF(s) implies/implied less recruitment positions for other research lines/topics in the department/unit	Not at all	41,2%	40,0%	38,1%	39,6%
	To some extent	47,1%	46,7%	47,6%	47,2%
	To a high extent	0,0%	6,7%	4,8%	3,8%
	Cannot say	11,8%	0,0%	9,5%	7,5%
	Not relevant	0,0%	6,7%	0,0%	1,9%
N		17	15	21	53

Appendix 4

Q 12 SFF staff have contributed to Master level teaching at the department.

		FieldDeptHead			Total
		Life sciences	SSH	S&T	
SFF staff have contributed to Master level teaching at the department.	Not at all	11,8%	6,7%	9,5%	9,4%
	To some extent	52,9%	66,7%	33,3%	49,1%
	To a high extent	29,4%	20,0%	47,6%	34,0%
	Cannot say	5,9%	0,0%	0,0%	1,9%
	Not relevant	0,0%	6,7%	9,5%	5,7%
N		17	15	21	53

Q 12 SFF staff have contributed to Bachelor level teaching at the department

		FieldDeptHead			Total
		Life sciences	SSH	S&T	
SFF staff have contributed to Bachelor level teaching at the department	Not at all	35,3%	20,0%	19,0%	24,5%
	To some extent	29,4%	53,3%	47,6%	43,4%
	To a high extent	11,8%	6,7%	19,0%	13,2%
	Cannot say	5,9%	6,7%	4,8%	5,7%
	Not relevant	17,6%	13,3%	9,5%	13,2%
N		17	15	21	53

Q 13 My institution ensures/ensured further support of the SFF(s) after the SFF grant is/was terminated

		FieldDeptHead			Total
		Life sciences	SSH	S&T	
My institution ensures/ensured further support of the SFF(s) after the SFF grant is/was terminated	Not at all	0,0%	6,7%	19,0%	9,4%
	To some extent	70,6%	66,7%	52,4%	62,3%
	To a high extent	5,9%	6,7%	4,8%	5,7%
	Cannot say	11,8%	6,7%	4,8%	7,5%
	Not relevant	11,8%	13,3%	19,0%	15,1%
N		17	15	21	53

Q 13 As head of department/unit, I have/had limited possibilities for ensuring the continuation of the research in the SFF(s)

		FieldDeptHead			Total
		Life sciences	SSH	S&T	
As head of department/unit, I have/had limited possibilities for ensuring the continuation of the research in the SFF(s)	Not at all	0,0%	13,3%	14,3%	9,4%
	To some extent	47,1%	6,7%	47,6%	35,8%
	To a high extent	35,3%	40,0%	0,0%	22,6%
	Cannot say	0,0%	20,0%	0,0%	5,7%
	Not relevant	17,6%	20,0%	38,1%	26,4%
N		17	15	21	53

Q 13 My department/unit has/had challenges in maintaining important personnel after the SFF period

		FieldDeptHead			Total
		Life sciences	SSH	S&T	
My department/unit has/had challenges in maintaining important personnel after the SFF period	Not at all	17,6%	20,0%	40,0%	26,9%
	To some extent	35,3%	33,3%	25,0%	30,8%
	To a high extent	11,8%	20,0%	10,0%	13,5%
	Cannot say	0,0%	20,0%	0,0%	5,8%
	Not relevant	35,3%	6,7%	25,0%	23,1%
N		17	15	20	52

Q15 My present research builds on the research I did in the SFF

		Postdoc (in at least 1 SFF)		Total
		0	1	
My present research builds on the research I did in the SFF	Not at all	9,6%	7,8%	9,0%
	To some extent	40,7%	45,7%	42,3%
	To a high extent	34,3%	34,9%	34,5%
	Cannot say	2,5%	0,8%	2,0%
	Not relevant	12,9%	10,9%	12,2%
N		280	129	409

Q15 I have changed research line/research topic because I have found other lines/topics that are more interesting

		Postdoc (in at least 1 SFF)		Total
		0	1	
I have changed research line/research topic because I have found other lines/topics that are more interesting	Not at all	35,1%	29,9%	33,5%
	To some extent	37,3%	40,2%	38,2%
	To a high extent	8,0%	12,6%	9,4%
	Cannot say	4,0%	4,7%	4,2%
	Not relevant	15,6%	12,6%	14,6%
N		276	127	403

Q15 I have changed research line/research topic because I could not get funding for my SFF research topic(s)

		Postdoc (in at least 1 SFF)		Total
		0	1	
I have changed research line/research topic because I could not get funding for my SFF research topic(s)	Not at all	48,9%	43,0%	47,0%
	To some extent	17,9%	20,3%	18,7%
	To a high extent	3,6%	10,2%	5,7%
	Cannot say	3,6%	6,3%	4,5%
	Not relevant	25,9%	20,3%	24,1%
N		274	128	402

Q15 I still have access to the research facilities/equipment/data registries/biobanks needed to continue the research lines of the SFF

		Postdoc (in at least 1 SFF)		Total
		0	1	
I still have access to the research facilities/equipment/data registries/biobanks needed to continue the research lines of the SFF	Not at all	6,3%	21,1%	11,1%
	To some extent	30,4%	21,1%	27,4%
	To a high extent	28,9%	26,6%	28,1%
	Cannot say	4,4%	6,3%	5,0%
	Not relevant	30,0%	25,0%	28,4%
N		270	128	398

Q15 I still have access to the competence/collaborators needed to continue the research lines of the SFF

		Postdoc (in at least 1 SFF)		Total
		0	1	
I still have access to the competence/collaborators needed to continue the research lines of the SFF	Not at all	5,6%	7,8%	6,3%
	To some extent	41,6%	44,5%	42,6%
	To a high extent	37,2%	31,3%	35,3%
	Cannot say	2,2%	3,1%	2,5%
	Not relevant	13,4%	13,3%	13,4%
N		269	128	397

Q15 I still collaborate with the same senior researchers in Norway as during the SFF period

		Postdoc (in at least 1 SFF)		Total
		0	1	
I still collaborate with the same senior researchers in Norway as during the SFF period	Not at all	12,0%	17,2%	13,7%
	To some extent	46,6%	45,3%	46,2%
	To a high extent	25,2%	25,0%	25,1%
	Cannot say	1,1%	1,6%	1,3%
	Not relevant	15,0%	10,9%	13,7%
N		266	128	394

Appendix 4

Q15 I still collaborate with the same senior researchers abroad as during the SFF period

		Postdoc (in at least 1 SFF)		Total
		0	1	
I still collaborate with the same senior researchers abroad as during the SFF period	Not at all	12,7%	15,0%	13,5%
	To some extent	40,1%	44,9%	41,6%
	To a high extent	27,0%	23,6%	25,9%
	Cannot say	1,9%	1,6%	1,8%
	Not relevant	18,4%	15,0%	17,3%
N		267	127	394

Q15 I still collaborate with non-academic organisations that I first got in touch with during the SFF (firms, public policy, healthcare organisations, or similar)

		Postdoc (in at least 1 SFF)		Total
		0	1	
I still collaborate with non-academic organisations that I first got in touch with during the SFF (firms, public policy, healthcare organisations, or similar)	Not at all	18,0%	24,4%	20,1%
	To some extent	22,5%	18,1%	21,1%
	To a high extent	6,7%	2,4%	5,3%
	Cannot say	5,2%	3,1%	4,6%
	Not relevant	47,6%	52,0%	49,0%
N		267	127	394

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