Swiss National Centres of Competence in Research (NCCR)

Evaluation of the Selection Process of the 5th Series

Liv Langfeldt, Siri Brorstad Borlaug, Inge Ramberg

NIFU

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Preface

The National Centres of Competence in Research (NCCR) is a funding scheme for long-term collaborative efforts for cutting-edge research in Switzerland. This report was commissioned by the Swiss National Science Foundation (SNSF) and presents the results of an evaluation of the NCCR selection process. It provides analysis of the selection process for the 5th call for NCCR proposals and compares with previous results on the selection process for the 4th call. The purpose is to provide information for developing the procedures for the next call for NCCR proposals.

The report is written by Liv Langfeldt (project leader) and Siri Brorstad Borlaug. Inge Ramberg managed the survey to the NCCR applicants. It is a follow up of a similar report, covering the 3rd and 4th NCCR calls, provided by the same team in 2016.

We are grateful to all the participants in the NCCR application and selection process who contributed with input to the evaluation through interviews and survey replies: NCCR applicants, members of the evaluation panels, representatives of NCCR home institutions, members of the SNSF National Research Council, the SNSF administrative office and the State Secretariat for Education, Research and Innovation (SERI).

Oslo, February 2021

Vibeke Opheim   Espen Solberg
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Executive summary

National Centres of Competence in Research (NCCR) is a major funding scheme for collaborative and cutting-edge research in Switzerland research. Starting in 1999, the Swiss National Science Foundation (SNSF) has announced five calls for NCCR proposals and in total 42 centres have been funded. Each NCCR is awarded for up to a total of 12 years based on an extensive review process and is expected to have substantial structural effects on the research at the home institution and the Swiss research landscape.

An evaluation of the NCCR selection process was carried out by NIFU in 2016. The present evaluation is a follow up of the previous report and addresses the changes in the selection process in the 5th call for NCCR proposals. The purpose is to provide the SNSF with information for further developing the evaluation procedures for the next NCCR call. The evaluation is based on analysis of NCCR application and review data, a survey to the applicants in Call 5, as well as interviews with reviewers, home institutions and other stakeholders in the selection process.

Key findings

Similar to the previous evaluation, we find that the NCCR evaluation process is well organised and functions according to intentions, and that stakeholders are generally satisfied. Several of the changes made in Call 5 have helped improve the evaluation process. This regards in particular the individual expert reviews with the possibility for rebuttals added at the full proposal stage. Still, there are some challenges and ineffective features in the evaluation process, which should be amended in advance of the next call for proposals. These concern the composition of the panels reviewing the full proposals, the selection of reviewers for the outline proposals, the transparency and timeline of the evaluation process, as well as the outreach of the NCCR scheme.

Unchanged attractiveness and outreach of the NCCR call for proposals

Data on NCCR Call 5 indicates unchanged attractiveness and outreach of the NCCR scheme compared to previous calls. The scheme is highly attractive and

prestigious for the applicants and their home institutions. Similar to Call 4, Call 5 had a broad scholarly outreach, with applications coming from a broad set of research fields, and a large part of them included research in multiple research areas.

There are still concerns about the NCCR scheme's outreach in the social sciences and humanities as well as in less established research fields and smaller universities and research organisations. Stakeholders perceive the scheme best suited to larger universities and to multi- and interdisciplinary collaborative efforts in established research lines. Moreover, there is a persistent gender imbalance; in the two last calls no proposal with a female director was awarded.

Expanded basis for the assessments of the full proposals

For the full proposals in Call 5, unlike previous calls, there were individual expert reviews which were made available to applicants with the possibility to respond to the reviews (rebuttals) before the interview with the evaluation panel. There were 4-8 external expert reviews per proposal, compared to only panel review in Call 4. Hence, the basis for assessments was greatly expanded. Among interviewed panel members, views on the external reviews varied from 'very useful' reviews, to a 'mixed bag' with half irrelevant or low-quality reviews. Their views on the rebuttals also varied, but they were generally seen as useful in clearing up misinterpretations and mistakes, and to set focus in the interviews with applicants. Moreover, comparing the results from the applicant surveys in 2016 and 2020, we find a significant increase in applicants' satisfaction with the thoroughness of the review of the full proposals. We also see that among those who submitted a full proposal the satisfaction with the SNSF support in the application process is significantly higher in the 2020 survey than in the 2016 survey. Still, even if more reviewers were involved in the review of the Call 5 proposals than in Call 4, the Call 5 applicants are not significantly more satisfied with the review expertise compared to the Call 4 applicants.

Increased transparency, but still challenges

Transparency in the evaluation process was substantially improved from previous calls. In the Call 5 guidelines to applicants and reviewers, the review criteria and procedures were more clearly communicated than in the similar Call 4 documents. Moreover, the possibility for rebuttals on the full proposal reviews increased transparency and was appreciated by the applicants. Notably, the full proposal applicants were significantly more satisfied with the clarity and completeness of the feedback to applicants than in the previous calls.

However, we still found transparency concerns related to the review process. Those who only submitted an outline proposal were less satisfied with the

feedback to applicants, and several applicants, from both stages of the evaluation process, expressed concerns about transparency, e.g. lacking information about the list of proposals, transparency on the bases for the assessments, and transparency in the home institution's dialogue with the SNSF and the State Secretariat for Education, Research and Innovation (SERI).

Different from previous calls, the applicants were informed about the composition of the evaluation panel in advance of their interview with the panel. This was helpful for applicants in preparing for the interviews, but also caused dissent as there was no opening to report and act on potential conflicts of interest. Another factor causing dissatisfaction was unauthorised spread of information to applicants about the top candidates on the shortlist. This caused false expectations and probably reduced satisfaction with the selection process.

Full proposal panels extra sensitive to potential conflicts of interest

The handling of conflicts of interest was done the same way in Call 5 as in previous calls, i.e. following the SNFS guidelines and routines for checking and declaring conflicts of interest. Still, questions regarding conflicts of interest created disturbance, dissatisfaction and complaints, and there were divergent views on the definition and identification of conflicts of interest. It was noted that it is particularly challenging to avoid any potential conflicts of interest in smaller fields and when proposals come from large teams with strong international networks. Moreover, potential conflicts of interest were extra sensitive in the full proposal panels as individual panel members had a crucial role for the outcome for the specific proposal they were assigned – there were two assigned panel members on each proposal – and no overlapping assignments between proposals. Adding to this, the composition of the full proposal panels produced cases of competitive group dynamics in the panel discussions. Several panel members saw their role as to convince the other panel members about the qualities of the proposal they were assigned. Hence, any previous collaboration, relations or disagreements could easily be perceived as favouring or disfavouring a proposal.

Notably, the applicants' confidence in the impartiality of the NCCR evaluation panels is not significantly different from previous calls, and the full proposal applicants had more confidence in the process than those who only submitted an outline proposal: A majority of the full proposal applicants used the upper side of the scale when rating the impartiality of the panel, whereas a minority of those who only submitted an outline proposal did so. Hence, it seems that impartiality concerns were limited to some proposals and not a general concern about the full proposal panels.

High goal achievement, but long timeline

Overall, the NCCR selection process is well organised and goal achievement is high, in Call 5 as in previous calls. A general concern is still the long timeline – 22 months from the submission of outline proposals to the final selection in Call 5. Even if the process is one month shorter than Call 4, this is considerably longer than for other large grant funding schemes. The applicant survey indicates that applicants, both in this and previous NCCR calls, were moderately satisfied with the time and efforts required in the application and selection process, and with the efficiency of the process. In general, they appear less satisfied with the time spent on the final selection in the Ministry, than with the time spent on SNSF's part of the process. However, only a small minority of the applicants recommend cutting time for full proposal preparation as a means to shorten the NCCR selection process.

Demanding and redundant efforts for providing a ranked shortlist

Time and efforts spent on ranking the shortlist of full proposals was a concern in Call 5. Different from previous calls, the Research Council put together a ranked shortlist based on the ranked lists from the four panels. As the ranking decisions were demanding (costing both time and frustration), the Research Council's list hardly deviated from the lists provided by the evaluation panels, and the ranking provided by the SNSF was not conclusive for the Ministry's final selection of NCCRs, the ranking in retrospect appeared redundant. Moreover, within the frames of the NCCR selection process, there is a transparency dilemma in producing an indicatively ranked shortlist; it may limit transparency and spark curiosity – and so give less satisfied applicants. In Call 5 the ranked shortlist caused disturbances and discontent due to unauthorised spreading of information.

Recommendations

In order to better ensure the quality of the review and to increase transparency and applicant satisfaction, the SNSF is recommended to:
- Assign multiple proposals to each member of the panels assessing the full proposals, and also ensure a broad set of experts on each proposal.
- Allowing more input from applicants in the selection of reviewer expertise.
- Reconsider the need for ranking the shortlist of full proposals.
- Consider adjustments in the NCCR scheme to increase its outreach and flexibility.

The recommendations are explained in Chapter 6.3.

1   Introduction

1.1   The NCCR scheme

National Centres of Competence in Research (NCCR) is a key funding scheme for long-term collaborative efforts for cutting-edge research in Switzerland. The centres are set up to provide outstanding, internationally visible research, knowledge and technology transfer from basic research, and training of young researchers and promotion of gender equality in science.

Starting in 1999, the Swiss National Science Foundation (SNSF) has announced five calls for NCCR proposals and in total 42 centres have been funded. Currently, there are 22 active centres with an average of 3.7 mill CHF per centre per year funded by the scheme.[1] Table 1.1 gives an overview of the proposals and awarded centres in all calls for proposals issued.

Table 1.1   NCCR Calls 1999-2020: Number of applications and funded centres

Call and year (pre-proposals)	Submitted pre-proposals	Submitted full proposals	Approved NCCRs	Years of NCCR operation
1st Call (1999)	82	34	14	2001-2013
2nd Call (2003)	44	17	6	2005-2017
3rd Call (2008)	54	28	8	2010-2022
4th Call (2011)	63	23	8	2014-2026
5th Call (2017)	54	23	6	2020-2032

Source: Guide 2020 National Centres of Competence in Research, SNSF.

1.2   The key issues for this report

After the fourth call for proposals, an evaluation of the NCCR selection process was carried out (Langfeldt and Borlaug 2016), and substantial changes in the evaluation[2] process were implemented for the fifth call. The present report was commissioned by the SNSF in order to provide insights on the effects of these changes –

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[1] Figure based on SNSF funding in 2019 to the Call 3 and Call 4 NCCRs. Source: NCCR Guide 2020.
[2] In this report 'evaluation process' is used about the SNSF's part of the NCCR selection process – which is the main topic of the report. 'Selection process' is used about the overall process, including the final selection which is not the responsibility of the SNSF.

before launching the next call for proposals. Like the previous evaluation, the report addresses general concerns and principles in the review of grant proposals (ESF 2011; Global Summit on Merit Review 2012). The key topics are:

- Attractiveness and outreach of the NCCR calls
- Reviewer competence and adequacy of review organisation and procedures
- Impartiality, transparency, comprehensibility, legitimacy and trust
- Effectiveness and efficiency

One chapter is dedicated to each topic. This gives a similar structure as in the previous evaluation report and eases comparisons between the NCCR calls.

1.3 Overview of the NCCR selection process: Changes from the previous call

The NCCRs are selected in a multi-stage peer review process, including reviews by international experts, shortlisting by the SNSF National Research Council, final assessments and selection by the State Secretariat for Education, Research and Innovation (SERI) and formal decision by the Swiss Federal Council/Department of Economic Affairs, Education and Research (EAER). At the first stage, *outline proposals* are reviewed and rated by international experts, at the second stage *full proposals* are reviewed and rated, and applicants are interviewed, by international experts and shortlisted by the Research Council, and at the final stage the SERI and the EAER select among the proposals at the shortlist. The process also includes meetings between the SNSF and the applicant institutions/university leadership, and between the SERI and university leadership. A graphical overview of the NCCR Call 5 selection process is provided in Appendix 1.

The main aims of the changes in the 5th call were to involve a broader set of experts in the assessments of the proposals, increase transparency and shorten the timeline of the evaluation process. As outlined below, changes were implemented for all parts of the process. The introductions to the separate chapters of this report provide an overview of changes by topic/aim.

Priorities in the call for proposals: In the 5th Call, proposals that strengthen research in the area of digitalisation were encouraged. It was announced that when selecting proposals (from the shortlist recommended by the SNSF), the Government (SERI) would give high priority to those which had 'an affinity with the goals set in the Swiss "Digitalisation Action Plan"'. Previous calls had no such field or topical priorities, with the exception of Call 2 which was directed at the humanities and the social sciences only.[3]

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[3] Moreover, Call 1 was topical in the sense that some broad topics were defined, plus a residual/other category.

Letters of intent: A new 'pre-stage' was introduced to enable the SNSF to prepare for recruitment of competences needed for assessing the proposals. The Letters of intent were to include the title, summary and list of participating researchers, and to be submitted two months before the deadline for the outline proposals. Moreover, 1.5 month after they were informed by the SNSF about the result of the review of their outline proposal, applicants were asked to indicate whether they intended to submit a full proposal.

Evaluation of structural aspects: Whereas the structural aspects of the proposed NCCRs were assessed in a parallel process and communicated as separate assessments (and not part of the rates given) to the applicants in the 4th call, these assessments were integrated in the assessments given by the expert reviewers, the panel members and the Research Council, and communicated to the applicants as part of the overall assessments of the proposals.

Outline proposal stage: Call 5 aimed at more experts per proposals at the outline proposal stage than in Call 4 – at least 3 external reviewers per proposal (compared to 2 in Call 4). In addition, there was a group of 21 international external panellists (compared to 9 in Call 4).

Full proposal stage: At the full proposal stage, there were more experts involved in the assessments of the proposals. There were at 4 to 8 external reviews per proposal, in addition to panel assessments, whereas in Call 4 there were no expert reviewers apart from the panel members. Moreover, a major change was applicants' possibility to respond to the external reviews and so provide additional input to the evaluation panel. This opportunity for applicants' rebuttals was new in Call 5. Furthermore, the applicants received information about the composition of the evaluation panel about 10 days before the panel meeting/their interview. In Call 4, they only got this information in the meeting.

Organisation of panel meetings (for the outline and full proposals): In Call 5, the evaluation panels were chaired by scientists from abroad, and not by Research Council members as in previous calls. Research Council members were only present as observers in the meetings. Moreover, rates and ranking were concluded in the meetings without disclosing who gave which rates and ranks (a new online tool for anonymous voting was used).

Shortlist: The shortlist of proposals recommended by the SNSF to the State Secretariat for Education, Research and Innovation (SERI), included a ranked order of the proposals. In previous calls, the shortlists were sorted alphabetically (with some additional information on the proposals' rankings within their different panels). Before the SNSF ranked the 5th call proposals, there were individual meetings with representatives of the leadership of the home institutions to get input on the home institutions' priorities. In previous calls, the meetings with the home institutions were held in advance of the submission of the full proposals.

Timeline: As displayed below, the SNSF's part of NCCR 5th call selection process was shorter than in the previous call. Especially the time for review of the outline proposals were reduced (from 9.5 to 5.5. months). Moreover, applicants had two months less for preparing the outline proposals in Call 5 (compared to Call 4). On the other hand, the final stage – the SERI's selection of the full proposals to be funded, took more time in Call 5 than in Call 4, and in total, the time from the outline proposal submission to the final selection was reduced by one month.

Table 1.2 Timeline NCCR selection process Call 4 and Call 5

Phase	Call 4	Call 5
Outline proposal: months from submission to feedback	9.5	5.5
Full proposal: months from submission to announcement of shortlist decision	7	6.5
Full proposal: months from shortlist to final selection (SERI)	2.5	6*
Total months from outline proposal submission to final selection	23	22

 * For Call 5, this includes 2 months from the shortlist decision to the ranking of the list (in the SNSF) and 4 months from the SNSF sent the ranked list to the final selection.

1.4   Data sources and methods of the evaluation

This report is based on a broad set of data sources, including data on the applications and review process, a survey to the applicants and interviews with participants in and stakeholder to the selection process. Moreover, the data collected for the previous evaluation (Langfeldt and Borlaug 2016), provide a comparative basis.

1.4.1   Data on the applications and selection process

Following up the analyses for the previous evaluation, a comprehensive set of background material is explored, and provides basis for assessing all four evaluation topics:

Application data: We have analysed applicant and awardee profiles (outreach to various groups) and variations in success rates between target groups (i.e. possible biases) in Call 5 and compared with previous calls.

Review documents: Reviewer guidelines, review reports/evaluation documents for the outline proposals and the full proposals in Call 5 have been analysed and used for understanding the role of the different steps in the selection process and the character of the feedback to applicants.

Overview of experts and panels members: Lists of invited and recruited international experts and panels members for the Call 5 outline proposals as well as the

full proposals were used for studying competence profiles of reviewers/panels and compared with previous calls.

1.4.2 Survey to NCCR applicants

In the 2016 evaluation a survey to the applicants provided important data on the attractiveness of the NCCR scheme, the applicants' perceptions of reviewer competence, the impartiality and transparency of the process, and their general trust in the selection process. To provide updated and comparable data, we sent a similar questionnaire to the applicants in the 5th call, repeating many of the questions from the survey in 2016. The questionnaire also contained open-ended questions where the applicants could substantiate their experiences and views, and also directly comment on the changes in the selection process (the questionnaire is attached in Appendix 4).

Sample, survey execution and response rates

Invitations to participate in the electronic survey were sent out to 53 applicants in the 5th NCCR call (Table 1.3). The respondents were given two months to reply (from 2 July to 31 August 2020) and sent three email reminders. We received completed questionnaires from 37 applicants (70 per cent of the sample of 53). The response rate was higher in the group of shortlisted (90 per cent) and funded (100 per cent) applicants, and lower among those who did not make it to the last stages of the process. Notably, only 5 of the 12 full proposal applicants who were not shortlisted responded to the survey. We got feedback from a few applicants who chose not to respond to the survey indicating that some of these lacked trust in the NCCR selection processes as well as in the review of the procedures and the usefulness of the survey. Hence, a major bias in the sample of responses is underrepresentation of less successful applicants, and possibly also applicants who are dissatisfied and do not trust the procedures. Overall, we still have a reasonably good response rate in all groups, and in the analyses of the potential data biases are handled by analysing the various groups of applicants separately. When commenting on the results we focus on differences which are statistically significant (95% confidence level).

Table 1.3 Response rate by application stage

Sample	Requested sample N	Replies #	Response rate %
Total sample*	53	37	69.8
Only outline proposal	31	23	74.2
Full proposals	22	14	63.6
Full proposals shortlisted by SNSF	10	9	90.0
Approved/funded by Ministry/SERI	6	6	100.0

Source: NIFU survey to applicants in NCCR Call 5.
*Of the total 54 applicants, one had requested not to be invited to the survey.

1.4.3 Interviews with stakeholders

Interviews were used to collect data on the experiences and views of the participants in and stakeholders to the selection process. The interviews addressed the key issues of the evaluation and changes in Call 5, and were also used to elaborate on findings from the analysis of background material and the applicant survey.

The following groups of stakeholders were interviewed:

- *Members of the SNSF National Research Council*: Interviews with selected Council members and members who observed the NCCR evaluation panel meetings.
- *International experts in the NCCR evaluation panels*: Interviews with chairs and selected panel members about the review and the NCCR evaluation process.
- *The Administrative offices of the SNSF*: Interviews with key informants, as well as contact throughout the project for clarifying issues.
- *The home institutions* of NCCRs (individual interviews with representatives from four institutions): Key topics were attractiveness and transparency of the NCCR calls, the home institutions' strategies and experiences concerning the preselection, and their general trust in the selection process.
- *The State Secretariat for Education, Research and Innovation* (SERI): Addressing the SERI's views and experiences regarding the NCCR selection process, the changes in Call 5 and the division of tasks between the SERI and the SNSF.

The interviews were semi-structured and lasted 0.5 to 1 hour. In total 21 persons were interviewed. List of informants is found in Appendix 3.

2   Attractiveness and outreach of the NCCR calls

Changes in the 5th call: Compared to Call 4, and most previous NCCR calls, Call 5 was more topically directed. In the call for proposals, it was announced that when selecting proposals, the Government (SERI) would give high priority to those which had 'an affinity with the goals set in the "Digitalisation Action Plan"'. The call was open to all fields of research, and the digitalisation priority was not to affect the evaluation process in the SNSF and was not highlighted in the call documents.

2.1   Outreach

2.1.1   The SNSF preparation phase and support

In the survey to the Call 5 applicants, we repeated a question from the previous survey about satisfaction with the support from the SNSF in application process. Table 2.1 shows the replies from the Call 5 applicants – separately for those who submitted a full proposal and those who only submitted an outline proposal. The table also includes the average scores given on a scale from 'Not at all satisfied' (1) to 'To a great extent satisfied' (5) in both surveys.

We see that among those who only submitted an outline proposal, the satisfaction with the SNSF support is reasonably good (4 on a scale from 1 to 5) and about the same in 2016 and 2020. Among those who submitted a full proposal, on the other hand, satisfaction appears significantly higher in the 2020 survey than in the 2016 survey (average 4.4 in Call 5 compared to 3.6 in Call 3 and 4).

As far as we know, the services and assistance offered to the applicants were about the same in these calls, and we see no distinct explanation to why the full proposal applicants are more satisfied with the support in the application process in Call 5 than in Call 3 and Call 4. Notably, the full proposal applicants in Call 5 appear more satisfied also with the thoroughness of the review (see Section 3.1.2) and the feedback on their proposals (see section 4.1.3) and one possibility is that

the increased satisfaction is interlinked and relates to the opportunity to rebuttals (at the full proposal stage) introduced for the first time in Call 5.

Table 2.1 Applicants' views on the support from the SNSF during the NCCR application process. Replies by proposal stage Call 5. Per cent.

	5 To a great extent	4	3	2	1 Not at all	Cannot say	N	Average (scale 1 to 5) Call 5	Call 3 & 4
The support during the application process (from the SNSF)									
Outline proposal only	22.7	45.5	18.2	0.0	0.0	13.6	22	4.1	4.0
Full proposal	57.1	28.6	14.3	0.0	0.0	0.0	14	4.4	3.6
Total	36.1	38.9	16.7	0.0	0.0	8.3	36	4.2	3.7

Source: NIFU survey to a NCCR. Question 1: Considering your NCCR application, to what extent did you find the following issues/processes satisfactory? The difference between those who submitted a full proposal and those who only submitted an outline proposal is not statistically significant.

2.1.2 The preselection at the research institutions

In the survey, a large majority of the applicants report that their home institutions preselected the outline proposals to be submitted to the 5th NCCR call (25% formal and 43% informal preselection), whereas far fewer report that full proposals were preselected (48% indicate that all eligible applicants at the home institutions were allowed to submit a full proposal).

Compared to Call 3 and 4, there seems to have been more preselection of outline proposals and less preselection of full proposals (Table 2.2).

Table 2.2 Pre-selection of NCCR outline and full proposals at home institution. Per cent.

How would you describe the pre-selection of NCCR outline / full proposals at your home institution?	Outline proposal stage		Full proposal stage	
	C5	*C3&4	C5	*C3&4
Formal pre-selection process:				
There was a defined procedure for deciding which proposals to support	27.0	17.9	18.5	18.4
Informal pre-selection process:				
Support/not support of proposals were discussed and decided in informal meetings/settings	43.2	41.1	22.2	52.6
No pre-selection:				
All formally eligible applicants were allowed to submit an outline / full proposal	24.3	33.9	48.1	18.4
Other:	5.4	7.1	11.1	10.5
N	37	56	27	38

Source: NIFU survey to applicants to NCCR call 5. Only one alternative could be chosen.

*Call 3&4 figures are from Tables 2.6 and 2.7 in Langfeldt and Borlaug 2016.

Interviews with home institutions (the larger ones) showed that practices of formal pre-selecting processes of outline proposals still vary – as in 2016. Although

the SNSF encouraged the institutions to preselect proposals submitted to Call 5, many were hesitant to do this. According to the informants, large institutions have considerable pros and cons regarding formal preselection processes. The pros are that the resources invested in the application process may focus on a limited number of promising proposals. The cons are that the home institutions do not see themselves as scientifically fit to evaluate potential proposals. Leaders underline that research is a bottom-up process and since the SNSF organises a peer-review, they do not see the need for organising an internal evaluation. However, most of the institutions experienced that the number of outline proposals was naturally reduced closer to the deadline. One informant argued that an internal pre-selection process may generate considerable frustration and discontent among candidates that are ruled out of the process in the early phase. Therefore, it seems common – at least for the larger institutions – to allow all candidates to send in an outline proposal.

In terms of the full proposals, a general rule seems to be that outline proposals receiving the grade A or B may send in full proposals. The criteria are more clearly defined in this stage.

According to the survey, most home institutions seem to have provided substantial support to the submitted proposals, especially institutions which have not succeeded in previous NCCR call. These are also among the smaller institutions. General support instruments are dedicated funding, time and administrative support to develop proposals, provision of written support to the proposals, and many also organise internal review(s) of the proposal (Table 2.3).

Table 2.3 Home institutions' support to NCCR proposals, by their previous success in NCCR calls. Per cent of applicants who indicate support from their home institutions.

My home institution supported my NCCR (outline and/or full) proposal by:	Home institution		
	No previous NCCR	Had previous NCCR	Total
Dedicating funding/time to develop the application	100.0 %	46.7 %	56.8 %
Contributing with administrative support	71.4 %	70.0 %	70.3 %
Organising internal review(s) of the proposal	42.9 %	40.0 %	40.5 %
Writing a highly supportive letter to the SNSF	85.7 %	66.7 %	70.3 %
N	7	30	37

* Source: NIFU survey to applicants to NCCR call 5. Multiple replies possible. This question not asked in 2016 survey.

In their free text comments on their home institutions' support, the applicants also emphasised support in terms of co-funding for the NCCR. One applicant expressed some unease concerning varying ability among the home institutions to co-fund NCCRs, stating that "demands made on home institution are considerable in the present NCCR funding climate" and that smaller universities may struggle to

support an NCCR proposal to the desired level, and be disadvantaged compared to the larger and federally-funded universities. The free text replies moreover emphasised support in terms of funding for preparatory research and help in preparing for the interviews. Some examples from the comments are given below:

- *Dedicating serious thinking to the implications and the embedding of the NCCR in structural terms (new positions, faculty, long term planning)*
- *Offering funds to complement the SNF contribution - Rector prepared thoroughly for the interview at the SERI*
- *Test run before the Review Panel at SNF took place*
- *Stepping up to the plate to pick up the slack when SERI support was reduced compared to the proposed budget. Incredibly gracious and greatly appreciated!*
- *The home institution provided some funds for preparing the full proposal that we could spend flexibly. We used the funds mainly to acquire some critical clinical data to support our proposed experimental approach.*

Interviews with selected home institutions show that practices for providing support vary from financial to only administrative support. This seems to relate to whether there is a formal pre-selection or not. Home institutions with no pre-selection processes seem to have limited financial support to the development of the proposals – at least from the central management (the Faculties may have other practices). The general argument is that writing grant proposals are part of the researchers' job description. The rectorate supports the proposals administratively, and co-funds the NCCRs if granted. One of the interviewed home institutions has introduced an internal funding scheme, with external review processes, to support interdisciplinary research and cross-faculty collaboration. This matches well, according to the informant, with the NCCR scheme. Another home institution has a seed-funding mechanism which supports the preparation of all larger funding grants, not only the NCCRs. In general, the home institution encourages the applicants to find friendly peers to review the proposals and may help to organise the process.

Informants commented that there seemed to be no 'winning recipe' on how the home institutions should organise the process. One institution had a formal pre-selection of outline proposals and submitted two in the capacity of being the primary home institution. This strategy turned out to be successful as both proposals were granted. Another had no pre-selection, and this strategy also turned out to be successful as two proposals, with the institution as the primary home, were granted.

The home institutions contribute with considerable co-funding to the granted NCCRs. Some of the interviewees raised the concern that short-listed proposals, which the home institution already has guaranteed funding if granted, may expect

that the projects should receive the matching funds even though they were not granted. These types of expectations pose challenges for the home institutions.

2.1.3   The NCCR applicant profile and success rates

In this section we explore the outreach of the NCCR scheme by field of research, home institutions and gender of applicants/NCCR directors.

Background to understand the figures: To understand the figures, observe that the NCCR evaluation process is not a two-stage 'filtering-out' process. A top grade on the outline proposal stage is not needed for submitting a full proposal, nor for success at the full proposal stage. Of the 54 outline proposals submitted, nine obtained top grade A. Of these, 7 obtained A at the full proposal stage, 5 were shortlisted and 2 awarded. 13 outline proposals were rated B. Of these, 12 were submitted as full proposals, 6 obtained A on full proposal stage and were shortlisted and 4 awarded.[4] In other words, there is a limited correlation between grades at the outline and full proposal stage, which must be taken into account when reading the figures. Moreover, the low number of proposals, especially at the final stages of the process, needs to be taken into account.

Open to all fields: The NCCR scheme is open to all fields and attracts proposals from the life sciences, the natural sciences/engineering (STEM) as well as the social sciences and humanities (SSH). At the 5th Call's outline proposal stage, 40% of the proposals were within life sciences, 37% within STEM and 22% SSH. In other words, the NCCR scheme seems attractive within all these broad fields, and the applicant profile is not very different from the general pattern of proposals to the SNSF (of SNSF funds in 2019, 26% were in SSH, 37% in STEM and 37% in life sciences SNFstat2019).

Varying success rates: The success of the proposals from the three fields varied through the selection process (Table 2.4). STEM proposals were more successful than the other fields at the first and last stage of the process – with a larger proportion of the top-rated outline proposals and the awarded full proposals. Within SSH, a somewhat lower percentage of the outline proposals were submitted as full proposals (33% compared to 50% in the life sciences and 40% in STEM). Life sciences on the other hand, had a larger share of the submitted full proposals, and top-rated and shortlisted full proposals.

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[4] Moreover, two outline proposals rated C were submitted as full proposals. One of these were rated A at the full proposal stage, but none of them shortlisted.

Table 2.4 Proposals in NCCR Call 5 by main research area. Proposals at different stages of the selection process, and success rates by research area. Per cent.

Call 5 distribution	Humanities/ Social Sciences	Natural sciences/ engineering	Life sciences	N
# Outline proposals	12	20	22	54
Outline proposals	22.2%	37.0%	40.7%	54
A-rated outline proposals	22.2%	44.4%	33.3%	9
Full proposals submitted	17.4%	34.8%	47.8%	23
Full proposals A-rated by panel	21.4%	28.6%	50.0%	14
Shortlisted by SNSF	18.2%	27.3%	54.5%	11
Awarded (by ministry)	16.7%	50.0%	33.3%	6
Success rates				**Total %**
1: % of outline proposals submitted as full proposals	33.3%	40.0%	50.0%	42.5%
2: % of full proposals shortlisted	50.0%	37.5%	54.5%	47.8%
3: % of shortlisted proposals awarded	50.0% (1 of 2)	100.0% (3)	33.3% (2 of 6)	54.5%

Source: Analysis of data from the SNSF. Field categorisation is according the SNF thematic division. 'Life sciences' include the medical and biological sciences. Several applications include research fields across these categories. For two full proposals, the initial field registered in the SNSF data differed from that of the field of the panel reviewing the proposal. These are counted according to the field of their evaluation panel.

17[5] organisations applied, six[6] were awarded: A broad set of Swiss research organisations participated in the NCCR call. 17 organisations submitted one or more outline proposals in the role as one of the home institutions and ten submitted one or more full proposal. Seven of the organisations without any previously awarded NCCR were among the outline proposals applicants. None of the proposals from these organisations were awarded (Table 2.5).

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[5] Including two in the role of '2nd home institution'.
[6] Including two in the role of '2nd home institution'.

Table 2.5 Call 5 NCCR applications by home institution (HI). Number of HI participations at different stages, and success rate for the SNSF part of the process. Sorted by number of outline proposals, proposals with multiple HIs are included one time per participating HI.

Home Institution	Outline proposals	Full proposals	Shortlisted by SNSF	Awarded by Ministry	**SNSF success
ETH Zürich - ETHZ	19	10	5	3	26.3
Université de Genève - GE	12	7	3	1	25.0
Universität Zürich - ZH	11	5	4	1	36.4
Universität Bern - BE	10	3	1	0	10.0
EPF Lausanne - EPFL	9	3	2	1	22,2
Université de Lausanne - LA	6	2	1	1	16.7
Paul Scherrer Institut – PSI*	3	1	0	0	0.0
Universität Basel - BS	3	3	2	2	66.7
Università della Svizzera italiana – USI*	3	1	0	0	0.0
Université de Neuchâtel - NE	2	0	0	0	0.0
HES de Suisse occidentale - HES-SO*	2	0	0	0	0.0
Eawag*	1	0	0	0	0.0
Eidg. Forschungsanstalt für Wald,Schnee,Land – WSL*	1	0	0	0	0.0
Idiap Research Institute - IDIAP	1	1	0	0	0.0
Université de Fribourg - UniFR	1	0	0	0	0.0
Universität Luzern – LU*	1	0	0	0	0.0
Zürcher Hochschule f. Angew. Wissenschaften – ZHAW*	1	0	0	0	0.0
Total HI participations	**86**	**36**	**18**	**9**	**20.9**
Total number of proposals	54	23	11	6	20.4

Source: Analysis of data from the SNSF. 29 proposals had multiple home institutions.

* Organisation without previous NCCR.

**Full proposals shortlisted by the SNSF as percentage of outline proposals.

Gender imbalance: As noted in the 2016 evaluation, the NCCR calls have had limited outreach to groups lead by women. Of the total of 42 funded NCCRs only three applied with a female NCCR director. In the 5th call, nine of the outline proposals had a female director, three of these where submitted as full proposals, and one shortlisted. This is more than in the 4th call, where eight preproposals had a female director and none of them were submitted as full proposals. Still, in the 5th call – as in the 4th call – no proposal with a female director was awarded, even if one made it to the shortlist. Notably, at the first stage of the 5th call selection process, proposals with a female director were more successful than those with a male director: a larger proportion of the 5th call outline proposals with a female director, than those with a male director, were top-rated (22% compared to 16%, table below).

It should be added that the NCCRs have women in other roles. Two of the six awarded proposals in Call 5 had a female co-director, and 25% of the senior

researchers, and 37% of the total staff, in the NCCR awarded in 3rd and 4th calls are women (NCCR Guide 2020, page 7).[7]

Table 2.6 NCCR Call 5. Per cent male and female directors at the different stages of the selection process, and success rates by gender.

Proposal stage	# proposals	% with female directors	% with male directors
Pre-proposals	54	16.7%	83.3%
A-rated outline proposals	9	22.2%	77.8%
Full proposals submitted	23	13.0%	87.0%
A-rated/recommended full proposals	14	7.1%	92.9%
Shortlisted by SNSF	11	9.1%	90.9%
Awarded (by ministry)	6	0.0%	100.0%
Success rates		**female**	**male**
1: % of outline proposals A rated	Female: 2/9 Male: 7/45	22.2%	15.6%
2: % of outline proposals submitted as full proposals	Female: 3/9 Male: 20/45	33.3%	44.4%
3: % of full proposals shortlisted	Female: 1/3 Male: 10/20	33.3%	50.0%
3: % of shortlisted proposals awarded	Female: 0/1 Male: 6/10	0.0%	60.0%

Source: Analysis of data from the SNSF.

2.2 Attractiveness

As explained in the 2016 evaluation report (Langfeldt and Borlaug 2016, page 29), the NCCR terms (large, long-term and stable funding) are generally attractive, at least to larger organisations that can afford the co-funding. It is open to all fields of research and higher education institutions, and there are few requirements which formally delimit the target group of the scheme. Yet, the high profile and prestige of the scheme may discourage smaller organisations and groups without international visibility from applying. Furthermore, the scheme requires a long planning horizon; NCCRs start up two years after the pre-proposal deadline and lasts for up to 12 years.

The views of the applicants

In the survey, the applicants were asked to compare the attractiveness of the NCCR scheme to other national funding schemes and to the European Research Council (ERC). The NCCR comes out with more prestige than other relevant national funding sources, but less prestige than the ERC. A large part (49%) of the applicants replied that the impact of the NCCR scheme on the prestige and career of the awarded researchers is better than the impact of other relevant national funding sources, whereas most of the remaining (39%) indicated that it was about the

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[7] According to the SNSF annual report 2019-2020 (page 24), overall for SNSF grants there are 39% women in projects. No figures are provided on main applicants or senior staff by gender.

same (Table A1, Appendix 2). Compared to the ERC grants, 8 % consider NCCR as more prestigious, 41% consider the schemes equal, while 32% see NCCR-funding as less prestigious (Table A2, Appendix 2). Notably, comparability is limited as ERC grants are individual and may have other impact on the prestige of the grant holder than a centre grant.

The applicants were asked to compare the amount of funding and the flexibility of use of funds. Comparing those who indicate that the NCCR is better with those who indicate poorer, we find that the NCCR comes out considerably better that other national sources (Table A1, Appendix 2), and also somewhat better than ERC grants (Table A2, Appendix 2).

These results are much the same as those from the previous survey (Langfeldt and Borlaug 2016, Table 2.14 and 2.15). Differences between the calls are not statistically significant with the exception that the comparisons with the ERC on amount of funding are more in favour of the NCCR in the last survey.

In the free text sections in the survey, we find few comments about the general attractiveness of the NCCR scheme, but there are some concerns expressed about the outreach of the scheme within the social sciences and humanities. One applicant simply stated that "The format of the NCCR is not adapted to the humanities". Others explained that they found the format and the selection process disfavouring the social sciences and humanities:

- *The process is clear, the evaluation not based on experts reviews, but on "political" decisions about priorities. Social sciences and humanities are not treated at the same level. They need a quota. It would also be useful to have a process in which smaller, but more social science or humanities oriented projects could be financed. The scheme is very generous, but more applicable for biomedicine and engineering. It would also be useful to open each two years for more (and smaller collaborative projects). Same for the time span: 8 years project would be appreciated.*
- *In my view, the SNSF is clearly veering toward the hard (natural) sciences. The results of the last round leave no questions open in this regard. As a person working in the humanities and social sciences, I would not apply for another NCCR, the chances of funding are near zero.*

The views of the home institutions

Interviewees at the home institutions underlined that the NCCR scheme is highly attractive and well known. A grant signalises scientific excellence and prestige both inside and outside the organisation and academic staff begin the work with the application process before the call is announced.

Compared to ERC, some claimed that in terms of funding for your research group it is better to apply for an ERC grant. However, an NCCR offers the

opportunity to bring the community together as no other funding instrument allows for public-private partnerships at this scale. It further generates considerable dynamics in research – across research fields and organisations (faculties and HEIs/research institutes) and contributes to the development of interdisciplinarity.

Call 5 had digitalisation as a prioritised theme. According to some interviewees this had minor impact on the applicants as nearly all research has a touch of digitalisation. There were still divergent views on whether it is appropriate to have prioritised topics. One claimed that it was ok to signalise some areas of priority, as NCCRs have rather large structuring impacts on the Swiss research landscape and in the end it is about what research is important for Switzerland. Yet, others underlined that the NCCR-scheme should be free of political inferences.

One concern raised by the home institutions is that proposals require considerable work and resources, and therefore it is rather frustrating for involved parties that so few proposals get granted. Furthermore, like some of the applicants, some of the interviewed leaders at the home institutions raised the question of whether the NCCRs are well design for the SSH and encouraged the SNSF to take this into consideration in the future design of the scheme.

2.3   Conclusions

The changes in the 5th NCCR call, do not appear to have had impact on the outreach and attractiveness of the NCCR call. The attractiveness and outreach profiles were much the same as in previous calls:

- *Highly attractive and prestigious, with broad scholarly outreach:* The NCCR scheme is still attractive and prestigious both to applicants and to home institutions. Most applicants rate the prestige of the NCCR scheme as higher than their other relevant national funding sources, but lower or on level with ERC grants. The scheme appears attractive within all broad fields of research, and the field profile of applicants is not very different from the SNSF general proposal pattern. Similar to Call 4, Call 5 had a broad scholarly outreach, with applications coming from a broad set of research fields, and a large part of proposals encompassing research in multiple research areas.

- *Limited outreach in the humanities and social sciences:* Similar to Call 4, concerns were expressed about the NCCR scheme's outreach in the social sciences, and in the humanities in particular. To the applicants and their home institutions, the scheme does not appear well designed for these fields.

- *Concentration on a few home institutions:* The successful applicants in the 5th call came from a few larger universities. Whereas a considerable number of organisations applied, only home institutions that had previously hosted an NCCR were successful. Similar to previous calls, there was a concern among interviewees that smaller universities and research organisations may struggle to support an NCCR proposal to the desired level, and be disadvantaged compared to the larger and federally-funded universities.

- *Gender imbalance:* In the 5th call – as in the 4th call – no proposal with a female director was awarded.

On two of the outreach and attractiveness questions in the surveys to the applicants, we find significant differences between Call 4 and Call 5:

- *Full proposal applicants more satisfied with SNSF support:* Comparing the surveys, we see that among those who submitted a full proposal, the satisfaction with the SNSF support in the application process is significantly higher in the 2020 survey than in the 2016 survey. This goes along with an increased satisfaction among the full proposal applicants on multiple items in the survey and may relate to the opportunity this group of applicants had for rebuttals on the review reports.

- *Increased preselection of outline proposals at the home institutions:* According to the applicant survey, there was more preselection of the outline proposals at the home institutions in Call 5 than in Call 4. This regards both formal and informal preselection of outline proposals. On the other hand, we find less preselection of full proposals at the home institutions in Call 5. In Call 5 the home institutions were strongly encouraged by the SNSF to limit the number of outlines proposal (no specific limit), and the home institutions reacted differently to this.

Concerning the topical priority for digitalization topics in Call 5, we do not have data on how this priority affected the outreach and attractivity of the call, e.g. whether it was more attractive in some research environments and less in others, compared to previous calls. We still note different views among the informants as to whether the NCCR calls should include topical priorities. But overall, the topical priority does not seem to have impacted the outreach and attractivity apart from attracting more proposals on the topic (15 of the 54 outline proposals had digitalization, automation, big data or similar terms in their title).

3 Reviewer competence and adequacy of review organisation and procedures

Changes in the 5th call: Compared to previous calls, the evaluation process for the 5th NCCR call involved more reviewer expertise and several new elements: There were more experts per proposal than in the 4th call, and the assessments of structural aspects of the NCCRs were integrated in the assessments given at the various stages of the process. See Section 1.3 for details. Moreover, applicants were given the opportunity to respond to the external reviews of the full proposals before the panel meeting (rebuttals).

3.1 Reviewer competence

3.1.1 Recruitment and profile of experts

Compared to Call 4, the recruitment of expert reviewers was more demanding in Call 5 – it took more invitations per completed review. Furthermore, the SNSF aimed at more reviews per proposal – both at outline and full proposal stage - in Call 5. This indicates difficulties in attracting the most wanted reviewers, but still a broad set of reviews per proposal was achieved. Moreover, the evaluation panels had a broad international profile. The proportion of women in the panels and among the expert reviewers was higher than in Call 4, but still low. Table 3.1 shows the number of experts and panels in the two calls, and the number of invited experts per completed review.

External experts for the review of the outline proposals. As in Call 4, two to four external reviews were provided for each outline proposal as bases for the discussion in the panel (on average 3.1 reviews per proposal in both calls).[8] However,

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[8] There were few exceptions to this both in Call 4 and 5: In both calls there was one in case only one completed external review, and in both calls two outline proposals ended up with more than four.

recruiting these experts appeared to be more demanding in Call 5. In Call 4, an average number of 2.9 experts were contacted for each completed review. In Call 5, 4.5 experts had to be contacted to get one completed review. Hence, on average the SNSF had to contact far more experts to get the wanted 3 reviews per proposal in Call 5 (13.5 requests), than in the previous call (8.7 requests).

Due to changes in the general SNSF policy on applicants' input to the list of relevant reviewers, such input differed between Call 4 and Call 5 and may have added to the difficulties in finding willing reviewers. In Call 4, applicants could suggest a list of reviewers to include and a list of reviewers to exclude. In Call 5 they could only suggest reviewers to be excluded from reviewing their proposal. Hence, in addition to a general increase in reviewer fatigue, difficulties in recruiting reviewers may also be a result of less direct input on the type of expertise, and experts, appropriate for the review.

External experts for the review of the full proposals. At the full proposal stage, each proposal was reviewed by 4 to 8 external experts, in addition to two assigned panel members per proposal. Hence, the full proposals were assessed by a far broader set of experts than in Call 4 (where there were no experts apart from the panel members). To obtain 4-8 completed reviews per proposal, the SNSF sent out invitations to 387 experts, of which 142 accepted, and 123 completed a review. The number of invitations needed varied greatly between the proposals (from 10 to 32 per proposal). On average, the recruitment of reviewers was somewhat easier in the humanities and social sciences (2.6 invitations per completed review), than in biology and environment (3.9 invitations per completed review, Figure 3.1).

Members for the full proposal panel: As in previous calls, the members of the full proposal panels were recruited to provide expertise on the specific proposals, so that the panels consisted of two experts per proposal, plus a panel chair. For some of the proposals it was relatively easy to recruit panel members, whereas some cases were more difficult. For five of the proposals, both of the two first invited accepted. In other end, we find two cases in which 9 to 10 experts were contacted. [9]

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[9] In total, there were 104 requests to get the 46 panel members, i.e. two panel members for each proposal. For the Natural Sciences & Engineering panel on average 5.75 per proposal, for Biology & Environment and the Humanities & Social Sciences panels on average 4 per proposal, and for the Medical Sciences panel on average 3.6 per proposal.

Table 3.1 Number of experts and panels in NCCR Call 4 and 5.

	# Pro-posals	# External experts[1]	# Panel members	Expertise per proposal	Invited experts per completed review
Call 5					
Outline proposals (one panel)	**54**	**165**	**20**	**3.1[2]**	**4.5**
Full Proposals panels:					
Humanities & Social Sciences	4	18	8	7	2.6
Biology and Environment	6	34	12	8	3.9
Medical sciences	5	28	10	8	3.1
Natural sciences & Engineering	8	43	16	7	2.8
Total (for full proposals)	**23**	**123**	**46**	**7.3**	**3.1**
Call 4					
Outline proposals (one panel)	**63**	**193**	**9**	**3.1[2]**	**2.9**
Full Proposals panels:					
Humanities & Social Sciences	3		9	3	
Nano & Bio	4		8	2	
Medical sciences	4		8	2	
Basic Sciences	5		10	2	
Technology & Ecology	7		14	2	
Total (for full proposals)	**23**	**0**	**49**	**2.2**	**n.a.**

[1] There were 2-4 external individual reviews per outline proposal in both calls. In Call 4 there were no external individual reviews for the full proposals.

[2] The figures include the external experts, not the assigned panel members for the outline proposals. In addition comes two panel experts per proposal in Call 5 (both with written assessments). In Call 4 there was one panel expert with written assessments and one with oral for each outline proposal. For the full proposals, the figures include both the external experts and the assigned experts in the panel. There were between 4 and 8 external experts per full proposal in Call 5, none in Call 4.

International profile of experts: The evaluation panels had a broad international profile. The outline proposal panel included members located in 6 different countries, whereas the panels for the full proposal included members from 13 different countries. At both stages there was a large proportion of US experts (accounting for 23 of the 48 persons in the full proposal panels and 6 of the 21 persons in the outline proposal panel). Also, a large part of the external experts for the review of the full proposals came from the US (37% according to figures from the SNSF). In sum, the international profile was quite similar to that in Call 4 (Langfeldt and Borlaug 2016, page 35).

Gender balance: The proportion of female panel members was low, but still higher than in the previous call. In the outline proposal panel, 29% were women (compared to 11% in Call 4), and in the full proposal panel, 23% were women (compared to 22% in Call 4). Among the external experts for the outline proposals, there were about 15% women (compared to 12% in Call 4), and among the external experts for the full proposals, there were about 20% women.[10]

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[10] The figures on the external experts are estimates based on name list (excluding 15 uncertain/unisex names in the list of experts for the full proposals and 29 experts for the outline proposals).

3.1.2 Applicants' opinions on the review and the reviewer competences

In the survey to the applicants, we asked about their satisfaction with the competence of the experts who reviewed their proposals. Table 3.2 shows the replies from the Call 5 applicants – separately for the full proposals and the outline proposals, and the latter split on those who submitted a full proposal and those who did not. The table also includes the average scores, from the 2020 survey as well as from the 2016 survey.

The applicants appear moderately satisfied with the reviewer competence for the outline proposals (3.2 on a scale from 1 to 5). In both surveys, those who submitted a full proposal are significantly more satisfied with the reviewer competence on the outline proposals, than those who only submitted an outline proposal.

Concerning the reviewer competence for the full proposals, the applicants appear more positive. 79 per cent of them use the upper part of the scale (4 or 5) when indicating their satisfaction.

On both proposal stages, the full proposal applicants appear a bit more satisfied with the reviewer competence in Call 5 than in the previous calls (0.5 higher average on outline proposals and 0.4 higher on full proposals). However, the numbers are small and the differences not statistically significant.

Table 3.2 The NCCR applicants' opinions on the reviewers' competence. Replies by call and proposal stage. Per cent and average rate.

Considering your NCCR application to what extent did you find the following issues/processes satisfactory?	5 To a great extent	4	3	2	1 Not at all	Cannot say	N	Average (scale 1-5) Call 5	Call3 &4
The competence of the experts reviewing the outline proposals									
No full proposal submitted	17.4%	13.0%	4.3%	21.7%	26.1%	17.4%	23	2.7	2.9
Submitted full proposal	28.6%	57.1%		14.3%			14	4.0	3.6
*Total	21.6%	29.7%	2.7%	18.9%	16.2%	10.8%	37	3.2	3.3
The competence of the experts reviewing the full proposals									
Submitted full proposal	28.6%	50.0%	7.1%	7.1%	7.1%	0.0%	14	3.9	3.5

Source: NIFU survey to applicants to NCCR Call 5, Question 1. Differences between Call 5 and Call 3&4 are not statistically significant.

Also, when asked about the evaluation panel's ability to assess all the fields of research involved in their application and the thoroughness of the review of the *outline proposals*, the applicants were moderately satisfied (Table 3.3). On both questions, we find a somewhat higher average score in the 2020 survey – than in 2016 – also among those who submitted a full proposal. However, these differences are not statistically significant, and we cannot conclude that satisfaction with the thoroughness or field coverage for the outline proposals is increased.

Table 3.3 Outline proposals: The NCCR applicants' opinions on the thoroughness of the review of the Call 5 outline proposals. Per cent and average rate.

To what degree do you think the evaluation panel:	5 To a great extent	4	3	2	1 Not at all	Cannot say	N	Average (scale 1-5) Call 5	C3&4
Was able to assess all the fields of research involved in the application?									
No full proposal submitted	4.8 %	19.0 %	9.5 %	28.6 %	19.0 %	19.0 %	21	2.5	3.0
Submitted full proposal	14.3 %	50.0 %	28.6 %	7.1 %	0.0 %	0.0 %	14	3.7	3.4
*Total	8.6 %	31.4 %	17.1 %	20.0 %	11.4 %	11.4 %	35	3.1	3.2
Provided a thorough assessment of your application?									
No full proposal submitted	0.0 %	22.7 %	18.2 %	13.6 %	40.9 %	4.5 %	22	2.2	2.7
Submitted full proposal	21.4 %	50.0 %	21.4 %	7.1 %	0.0 %	0.0 %	14	3.9	3.2
Total	8.3 %	33.3 %	19.4 %	11.1 %	25.0 %	2.8 %	36	2.9	3.0

Source: NIFU survey to applicants to NCCR call 5, Question 4. Differences between Call 5 and Call 3&4 are not statistically significant.

Yet, turning to the *full proposals* we find a significant increase in satisfaction with the thoroughness of the review (Table 3.4). The large majority used the upper part of the scale (86% rate 4 or 5), and on average 0.9 points higher than in the 2016 survey.[11] For the panel's ability to assess all the fields of research and understand and respond to the presentation of the proposals there is non-significant increase from 2016 (0.4 point higher in 2020).

Table 3.4 Full proposals: The NCCR applicants' opinions on the thoroughness of the review of the Call 5 full proposals. Per cent and average rate.

To what degree do you think the evaluation panel:	5 To a great extent	4	3	2	1 Not at all	Cannot say	N	Average (scale 1-5) Call 5	C3&4
Was able to understand and respond to the presentation of your proposal (during your meeting with the selection panel)?	50.0 %	21.4 %	0.0 %	14.3 %	14.3 %	0%	14	3.8	3.4
Was able to assess all the fields of research involved in the application?	21.4 %	28.6 %	28.6 %	7.1 %	14.3 %	0%	14	3.4	3.0
Provided a thorough assessment of your application?	35.7%	50.0%	0.0 %	0.0 %	14.3 %	0%	14	4.0*	3.1

Source: NIFU survey to applicants to NCCR Call 5, question 5.

*Differences between Call 5 and Call 3&4 are statistically significant for this question only.

The applicants were furthermore asked to compare with the reviewer competence in other national funding schemes and in the European Research Council (ERC). About half of the applicants replied that the reviewer competence in the NCCR scheme was about the same as for their other relevant national funding sources (46 per cent) and in ERC (43 per cent, Table 3.5). This is much the same as in the previous survey (Langfeldt and Borlaug 2016, Table 3.6).

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[11] In 2016, 52% used the upper part of the scale, see Table 3.5 in Langfeldt and Borlaug 2016.

Comparing those who indicated that the NCCR was better with those who indicated poorer, we find that the NCCR reviewer competence comes out negatively compared to the ERC as well as to other national funding sources. The exception is the replies from the full proposal applicants' concerning comparisons with the ERC; in sum this group rated the NCCR better than the ERC. They were also more positive on this than in 2016. The numbers are however small and the difference between the calls are not statistically significant.

Table 3.5 Reviewer competence in the NCCR scheme compared to *other national funding sources and to ERC. Replies by proposal stage. Per cent.

Reviewer competence	The NCCR scheme is				N	PP difference Better-poorer		Better C5 vs
	Better	About the same	Poorer	Cannot say/NA		Call 5	Call 3&4[1]	C3&4 (PP)[1]
NCCR compared to your relevant national[2] funding sources								
Only NCCR pre-proposal	0.0%	43.5%	34.8%	21.7%	23	-34.8	-46.2	-3.8
Full NCCR proposal	21.4%	50.0%	28.6%	0.0%	14	-7.2	-29.1	18.2
Total	8.1%	45.9%	32.4%	13.5%	37	-24.3	-36.9	4.6
NCCR compared to the European Research Council								
Only NCCR pre-proposal	0.0%	39.1%	26.1%	34.8%	23	-26.1	-15.4	-11.5*
Full NCCR proposal	28.6%	50.0%	14.3%	7.1%	14	14.3	-3.2	18.9
Total	10.8%	43.2%	21.6%	24.3%	37	-10.8	-8.8	0.3

Source: NIFU survey to applicants to NCCR call 5. Question 8 and 9: When comparing the NCCR scheme to your other relevant national funding sources/ to the selection process of the European Research Council, is the NCCR poorer, about the same or better, concerning Reviewer competence.

[1] The two last columns show comparable figures from the survey to applicants to NCCR calls 3 and 4. The last column shows the percentage indicating 'Better' in Call 5 minus the (combined) percentage indicating 'Better' in Call 3&4. The second last shows the 'better' minus 'poorer' in Call 3&4. See Table 3.6 in Langfeldt and Borlaug 2016 for the distributions of replies to these questions from NCCR Call 3 and 4 applicants.

[2] 25 respondents entered information on which other funding source they compared with. 23 of these compared with other SNSF funding, 2 with funding schemes in other countries.

*Differences between Call 5 and Call 3&4 are statistically significant for this question only.

In the free text sections, several applicants commented on reviewer competences. Those who only submitted an *outline* proposal expressed concerns regarding the limited number of reviews, wrong and narrow expertise and lack of thoroughness in review, as well as difficulties in covering the full scholarly breadth of the proposal and in assessing interdisciplinary projects:

- *It was the worst evaluation experience in my entire career. I find it offensive that only two very brief reviews were relied on given all the effort it took to prepare a pre-proposal. One reviewer admitted not being an expert on the relevant topic […] and the other reviewer wrote merely a dozen lines proposing his or her own "interpretation" of our project […] I and my team spent a lot of time and effort to prepare the pre-proposal. I am particularly shocked by this experience since I have learnt to respect reviewers from SNSF that are almost always professional and well-informed. […] There should be a minimum of 4-5 reviews even for pre-proposals and the evaluation team has to take responsibility for the reviews to make sure they are "serious" and if not, new reviews would need to be solicited.*
- *For my proposal, I had a feedback from two international experts who gave a negative feedback for opposite reasons.*
- *more external reviewers are needed, we had one really positive and two not really negative, nonetheless we did not enter the second round.*
- *The reviewer comments were out of context and focused on only one part of the proposal. The reviewing process is highly biased by the selection of the reviewers. In our case I was deeply surprised on how off the mark were the reviews and even more that the Committee accepted them. I doubt anyone read the full proposal. The reviewers had relation to only a small fraction of the proposal.*
- *All members of my consortium were disappointed that two of the three reviewers focussed strongly on one of the [many] research topics of our proposal. We had the feeling that none of the three reviewers was capable to appreciate that this consortium joined researchers from non-related disciplines to merge into a unique collaborative cluster of excellence. The excellence of the majority of PIs was simply neglected in an unfair manner. When investing so much effort in a proposal that joins world-class experts on distant topics, we would have expected that care is taken to reach out to reviewers who are willing to take the breadth of the topic into account.*
- *The reviews were obviously opinionated, unsubstantiated and unfair. […] The quality of reviewers' contributions should be checked before entering the decision-making process and reviews with unsubstantiated and wrong claims and without being informed by the complete application materials should be discarded. […] First, review quality should be up to standard. Second, reviews should be informed by interdisciplinary expertise, not just expertise from one or particular disciplines. Currently, a topic such as [..] is probably reviewed by medical scientists despite being a concerted effort with data scientists, ethicists, legal scientists, psychologists and medical experts. As disciplines tend to protect their interests, truly interdisciplinary applications hardly stand a chance and most NCCR are perceived as "the X-discipline NCCR".*

- *Was just wondering that in the panel, there were no social scientists for such interdisciplinary endeavour! Seems that interdisciplinarity still is only happening on paper but not in the evaluation.*
- *It is most likely impossible to find reviewers that can adequately rate and assess NCCR proposal because the stretch or disciplines and subjects are very broad.*
- *We had submitted an interdisciplinary proposal [...]. Reviewers complained about "too interdisciplinary". From my point of view, interdisciplinary proposals are not welcome in this funding line - nor in other standard funding lines. The reason is simple. We had [multiple] application domains [...] snf will respond to this by selecting three types of reviewers: [...] All of them will understand only 1/3rd of the proposal, leading to reluctant negative reviews. [...]. So, the proposal gets rejected. Please note that this is not connected exclusively to NCCRs, I have seen this many times also in other funding lines. As a consequence, we have stopped writing interdisciplinary proposals.*

Among the full proposal applicants, on the other hand, we find concerns that the panel members assigned the review of their proposals did not have the adequate expertise or for other reasons were unfit for the task, while others were very satisfied:

- *The selection of the two panel members was extremely difficult for our consortium. One had a heavy COI and the other was a focused specialist in a field which covered less than 3% of the whole proposal. This latter panel member not even knew most of the applicants.*
- *the decisive panel member's academic record is very thin. It was very frustrating to see two years of preparation work essentially fail because of one biased and frankly not competent panel member. The lesson from this for the SNF is to set the academic bar significantly higher for NCCR panel members than for panel members in other funding programmes. Given the large stakes of NCCR decisions, those decisions should be entrusted to top researchers.*
- *In my case, none of the main reviewers or panellists was from the research field of either of the both designates directors [...] - please make sure in the future that at least one of the panellists represent the discipline of at least one of the main applicants and shares the same academic culture*
- *The interview panel was outstanding, with strong academics who kept the discussion at the right level of scope and detail.*
- *The reviewers, experts and committee were extremely devoted, professional, competent and fair.*

3.2 Adequacy of review organisation and procedures

3.2.1 Review of the outline proposals

As in previous NCCR calls, all the outline proposals were assessed in one multi-disciplinary panel. There were however some modifications to the review process in Call 5 compared to previous calls. These modifications were appreciated by the interviewed stakeholders. At the same time, some concerns about the ability to give a similarly fair assessment of proposals within all fields were raised.

Larger panel: The Call 5 review of the outline proposals combined elements from previous calls, and had both 2-4 external/remote experts per proposal and a relatively large panel (20 members and a chair) to reach conclusions based on the remote reviews and panel members' assessments.[12] The panel was considerably larger than the one in Call 4 (20 compared to 9 members), and according to the informants the panel review worked well and covered sufficiently the fields of the proposals. In comparison, in Call 4 there were concerns that it was difficult to handle the full scope of fields in a nine-member panel (Langfeldt and Borlaug 2016, page 39).

Panel chairs from abroad: In Call 5, all evaluation panels – the outline proposal panel as well as the full proposal panels – were chaired by scientists from abroad, and not by Research Council members as in previous calls. Research Council members did observe the panel meetings but did not take part in the discussion. The chairs were experienced scholars from fields not matching the proposals, and they did not review proposals but had the task of moderating the discussion and ensuring similar and fair review of all proposals. According to informants this worked well and also provided more equal procedures across panels as one chair served several panels.

Expertise from across sciences: Several of the NCCR proposals cut across main areas of science (i.e. SSH, STEM and life sciences), and panel members from various fields were involved in both the written and oral assessments of the proposals. A large part of the 54 outline proposals were assigned panel referees[13] from different areas of science (e.g. both SSH and STEM, or both life sciences and STEM): 21 proposals had a referee and a co-referee from different areas of science, whereas the remaining 33 had a referee and a co-referee from within one area (i.e. within SSH, STEM or life sciences, but still covering different disciplines). With one exception, those with two referees within the same area, had a "non-expert" third referee from another area of science. Moreover, the majority of those with referee

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[12] In comparison, the outline proposals in Call 3 were assessed by a 16-member panel and no external experts and in Call 4 by a 9-member panel and 2-4 external experts per proposal. See Section 3.1.1 on panel size and external experts.

[13] Who wrote review reports in advance of the meeting.

and co-referee from different areas of science, had a non-expert referee in a third area (e.g. referees from the life sciences and SSH and a non-expert from STEM). We do not have similar Call 4 figures for assigned referees from different areas of science. However, a larger panel and formalised responsibilities for non-expert comments (new to Call 5), appear to have broadened the expertise involved in the review of the outline proposals. Notably there are limitations to scholars' abilities to assess research outside their field, as well as the time they can be expected to spend on reading proposals outside their field. Some informants emphasised that the panel members were expected to be generalists and assess the outline proposals based on the external expert reviews. At the same time some would like to have seen more cross-reading within the panel and more efforts to present proposals and assessments so they were more easily understood outside one's field, and linking it up to criteria that work across different fields.

Concurrence and critical panel review: In most cases the grades given to the outline proposals in advance of the panel meeting concurred or differed slightly.[14] However, the result of the meeting was in most cases lower grades. For 32 outline proposals the panel discussion ended with lower grades than what the two panel referees suggested in their written reviews in advance of the meeting, in 19 cases there were no change, and only in three cases did the panel discussion conclude with higher grades than those given in advance of the meeting. We do not have similar data for Call 4, but note that the review was organised to include a broad set of expertise in one panel, and so facilitate that all outline proposals were assessed similarly (i.e. rated based on similar considerations), and the data indicates significant interaction between fields in the review of the proposals. Presumably, the larger panel and the introduction of an extra "non-expert" panel referee for each proposal in Call 5, increased interaction between fields in the review process, and gave a broader scope to, and possibly more coherence in, the assessments. Looking through the reviews of the proposals with concurrent pre-meeting grades which were lowered in the meeting, we note that several of these review reports point to insufficiencies in the integration of the proposed research, that it does not appear as a unified research programme, and/or doubts that NCCR is the adequate funding instrument for the proposal. Hence, it seems that one of the factors behind lower grades from the panel discussions was that the proposal did not present a research programme sufficiently unified or designed to be an NCCR – which can be seen as an overall and important concern regardless of field.

Imbalances between fields: Still, some of the interviewed stakeholders were concerned that it was difficult to achieve similar and fair assessments across all fields.

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[14] In 31 cases both panel referees gave the same grade in advance of meeting, in 19 cases they different by 1 grade, and one case by 3 grades (one giving A and the other D). In 3 cases only one panel referee graded the proposal in advance of the meeting.

Different fields of research have different review practices – in some fields, peers appear more critical towards each other, and these fields are thereby disadvantaged when competing with other fields. It was also stated that some fields were represented with loud voices in the panel, others with more quiet voices. Even if balanced by the chair's efforts to structure and moderate the discussion, this was seen as potentially causing bias. More specifically it was stated that the natural sciences did particularly well in the multi-disciplinary outline proposal panel. This view complies with the figures in Table 2.4 – the natural sciences and engineering obtained a larger proportion of top-rated outline proposals.

3.2.2   Review of the full proposals

Some of the major changes in Call 5 concerned the review of the full proposals: There were reviews by external experts in advance of the panel review, and the applicants were given the possibility to respond to these reviews in advance of the panellists' reviews and the applicants' interviews with the panel. Both the external reviews and the rebuttals were new in Call 5 – in previous calls there were neither external reviews nor rebuttals.

The composition and role of the evaluation panels, on the other hand, remained much the same. Each full proposal was reviewed in one of four multidisciplinary panels: Humanities & Social Sciences; Biology & Environment; Medical Sciences; Natural Sciences & Engineering.[15] Each panel was composed to provide expertise on the specific proposals. As explained above, each panel reviewed 4 to 8 proposals and there were two dedicated panel members on each proposal (Table 3.1). Each panel had a two-day meeting[16], going through the proposals one by one and interviewing the applicants.

The evaluation of the Call 4 evaluation process noted that for some of the panels, the composition produced a competitive group dynamic in the panel discussions (Langfeldt and Borlaug 2016, p. 40). This was also the case in Call 5. With two assigned experts on each proposal, several panel members saw their role as to convince the other panel members about the qualities of the proposal they were assigned. Still, panel dynamics varied, and seemed linked to differences in panel size, scholarly overlap and heterogeneity, as well as different personalities and propensity to involve in assessments outside one's specific field of expertise in the panel discussion. According to informants, the largest panel had more overlap in expertise and there were more cross reading and interactive assessments. The members of the smallest panel (SSH) provided more critical reviews and were less

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[15] Proposals were interdisciplinary and one or two of the proposals was said to be in between these panels, i.e. they could have been assessed in another panel.
[16] The largest panel had a 3-day meeting for revieing their proposals and interviewing the applicants.

advocates of the proposals they had been assigned for review. In the two medium-sized panels, the members (more than in the other panels) acted as proponents of their assigned proposals, but still group dynamics varied as one panel was more scholarly homogeneous than the other.[17]

Several informants – panel members as well as observers – raised concerns regarding possible imbalances resulting from the panel composition, and more specifically that the panel members possessed different authority and ability to voice their views in the panel discussion, and/or propensity to advocate for the proposal they were assigned (cf. Section 3.2.1 for similar concerns regarding the outline proposal stage). The meetings were structured and chaired to modify such imbalances. Still, a major concern was that applicants could perceive being disadvantaged because their application was assigned to apparently weak panel members or some who was not likely to advocate for their proposal. Notably, a digital tool allowing anonymous voting was used to clarify opinions in the panel during the meetings and for concluding and ranking the proposals (new in Call 5). Hence, all panel members had an equal say regardless of their competence and scholarly authority in the panel. The informants found the voting tool useful and efficient, and appreciated its help in reaching conclusions after lengthy and thorough discussions of each proposal. They did not question that the voting was anonymous, that all panel members had an equal say regardless of competences and review responsibilities, or that it was unclear how possible imbalances in the panel composition impacted the voting. Ranking the proposals seems to have been much easier than in the previous NCCR evaluation processes.

According to informants, much of the discussion in the panel meetings focused on the proposed research and its scientific impact and the synergies of the research within the centres. The applicants/teams were generally found to be excellent and less a topic of discussion, it was stated. Structural aspects – as the involvement and priorities of the home institutions and the centres' role in the Swiss research landscape – were more difficult to assess for the international panels and some interviewees were concerned that the assessments of the structural aspects were not done as thoroughly as in Call 4 (see sections 3.2.3 and 5.2).

When asked about the use of the external reviews and the role of rebuttals and interviews in panels assessments, informants noted that the interviews with the applicants were important, while the external reviews and the rebuttals in many cases appeared to have had less importance:

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[17] That panel members have different approaches is found in studies of other selection processes, and not unique to NCCR panels: "Panel members approach the work of selecting grants in different ways. Some act as representatives of their field or discipline, others attempt to act for the good of their discipline or the nation" (Mow 2009, page 201). Moreover, inflation in reviewer scores to promote proposals is reported in other centre grant selection processes (Klein and Olbrecht 2011, p. 346), and organising the review of interdisciplinary research and handling biases are general challenges in peer review (Guthrie et al. 2019; Langfeldt 2006; Lamont et al. 2006).

- *External reviews:* The external reviews were part of the basis for panel discussions, and provided some checks for the panellists' own assessments, but according to some informants they had limited importance for the panels' assessments. Among the interviewed panel members, views varied from "very useful" reviews, to a "mixed bag" with half irrelevant or low-quality reviews. Hence, in some cases the external reviews were important for the assesses, in other cases not.
- *Rebuttals:* All applicants used the opportunity to rebuttal on the external reviews of their proposals. According to the interviewed panel members and observers, the usefulness of the rebuttals varied a bit, but generally they were seen as useful in clearing up misinterpretations and mistakes, and to set focus in the interviews with applicants.
- *Interviews:* The interviews with applicants were generally seen as very useful and appear to have provided important information for the assessments of the proposals. Several informants told that the interviews had changed opinions in the panels. Along with the discussion in the panel, the interviews also gave a common ground for the panel's assessments – across the different proposals they were assigned and had read.

The role of the Research Council - Monitoring and shortlist: The Research Council has two key roles in the NCCR evaluation process: Firstly, the Council monitors the process to ensure the proposals are assessed in a fair way and according to the call documents and that the written evaluations are clear and plausible and all important aspects included. Secondly, the Council decides which proposals to include in the list of recommended full proposals to be send to the SERI for the final stage of the selection process. In putting together this shortlist, the Council considers overlaps and synergies with existing programmes, the structural developments and contributions by the home institutions, significance of the research topic (risk vs. opportunities of initiating an NCCR on the topic) and points out open questions to be discussed with the home institutions. [18]

The roles were performed somewhat differently in Call 4 and Call 5. In Call 4, Research Council members had an active role in the evaluation panels as they chaired the meetings (without reviewing proposals), in Call 5 they were passive observers in the panel meetings. In Call 4 the Research Council delivered an unranked shortlist to the SERI, in Call 5 they ranked the shortlisted proposals. In both calls the shortlist was made based on the evaluation reports from the panels, as well as panel members' observations of the panels. Looking closer at the Call 5 shortlist, we see that the Research Council omitted three of the A-rated proposals from the four panels and merged the remaining proposals from the four panels

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[18] Roles according to SNSF 23 May 2019: "NCCR S5: 5th call – Shortlisting of the NCCR proposals".

into one ranked shortlist, in compliance with the panels' ranking. The omitted proposals were the number 4 in the two panels that recommended four proposals (the two other panels recommended 3 proposals each), plus one proposal in a third panel, that the Research Council found to have open questions that the panel had not been able to sufficiently assess. Hence, with one exception the Research Council did not deviate from the ranking provided by the evaluation panels. Still, the ranking in the Research Council was perceived as a difficult process and it was time-consuming.[19] The Research Council (division IV) represents the full scope research fields – from the hard sciences to humanities – and the participants in the meeting had different views and background, and according to some interviewees the making of the shortlist appeared as a competition between fields of research (see also Section 4.1.1 on the transparency aspects of the shortlist).

3.2.3 Review of structural aspects

In Call 4, the SNSF performed a separate assessment of the structural aspects of the NCCRs. This included separate reviews for the outline and the full proposals. There was no direct link between the scientific and structural assessments: the structural assessments by the SNSF were not communicated to the expert panels, and the scientific and structural assessments were communicated as two separate texts to the applicants (Langfeldt and Borlaug 2016). For Call 5, SNSF did not perform separate assessments, and structural aspects were integrated in the assessments by the international experts. For both the outline and full proposals, the home institutions wrote a letter of support (template to be filled in) where they stipulated their financial and structural commitment to the proposals. No specific funding level was required for the contributions by home institutions and third-party funding to the NCCRs.

Structural aspects were part of the assessments of both the outline proposals and the full proposals; 'centre aspects/management/structural relevance' was one of the three main criteria assessed by the panels at both stages.

For the shortlisted full proposals there were meetings between representatives for the home institutions (the rectorate) and the SNSF. The meetings aimed to clarify any remaining questions regarding the structural developments and commitments as well as the compatibility of the initiative with the strategic priorities and long-term planning of the home institutions. Informants representing selected home institutions found the meeting with the SNSF useful as it gave the opportunity to confirm support to the proposals.

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[19] It was discussed in three Research Council meetings in the period May to August 2019. The first meeting was set up to discuss observers' feedback from the panel meetings and prepare for the two next meetings. The second meeting was for putting together the shortlist, and the last meeting for ranking the list.

For the proposals on the shortlist, the structural aspects were further an issue in the meetings between the home institutions and the SERI. The meeting with the SERI, was by some assessed less positive as the SERI asked the home institutions if they could increase their co-funding so that six instead of five NCCRs could be granted. This came as a surprise to some of the interviewees, and they perceived the meeting to turn out to include a process of bargaining/negotiation.

3.2.4 Applicants' opinions on the adequacy of the NCCR policies and review processes

The NCCR applicants have very different opinions on the NCCR policies and review processes. When asked about the appropriateness of the NCCR scheme for a variety of policy aims, their opinions differ greatly on all aspects (Table 3.6). Whereas 22 per cent indicate that the policies and review processes to a great extent are appropriate for supporting the most promising and important research, 11 per cent indicate 'Not at all' on this question. Moreover, 21 per cent find that the policies and review processes to a great extent support original and ground-breaking research, whereas 11 per cent indicate 'Not at all' on this question.

On a scale from 1 ('Not at all') to 5 ('To a great extent'), average rates are between 3.0 and 3.7 on the various aspects. The highest average is for "Enable Switzerland to become a world leader in a particular research area", whereas support to high-risk research appears with the lowest average rate. In other words, to the applicants, the NCCR scheme is better for building specific research areas than at enabling high-risk research. Altogether 59% rate the NCCR scheme on the upper part of the scale (rate 4 or 5) on enabling Switzerland to become a world leader in a particular research area, while 28% do so on its ability to enable high-risk research.

Looking at the averages we find the same pattern as in 2016, and differences between the calls are not statistically significant. We still note that on the two questions that received the lowest scores in 2016 – support to high-risk research and to original and ground-breaking research – the applicants give slightly higher scores in 2020.

Table 3.6 Applicants' views on the NCCR policies and review processes. Per cent and rate average.

In your opinion to what degree does the NCCR scheme provide the appropriate policies and review processes to	5 To a great extent	4	3	2	1 Not at all	Cannot say	N	Average (scale 1-5)	
								Call 5	Call 3&4
Support the most promising and important research?	21.6 %	16.2 %	29.7 %	13.5 %	8.1 %	10.8 %	37	3.3	3.2
Facilitate interdisciplinary research?	27.0 %	24.3 %	21.6 %	13.5 %	8.1 %	5.4 %	37	3.5	3.6
Support high-risk research?	19.4 %	8.3 %	30.6 %	13.9 %	16.7 %	11.1 %	36	3.0	2.6
Support well founded and solid research?	16.2 %	35.1 %	27.0 %	8.1 %	5.4 %	8.1 %	37	3.5	3.7
Support original and ground-breaking research?	18.9 %	24.3 %	27.0 %	8.1 %	10.8 %	10.8 %	37	3.4	3.0
Enable Switzerland to become a world leader in a particular research area?	24.3 %	35.1 %	16.2 %	10.8 %	5.4 %	8.1 %	37	3.7	*
Deliver transformational change in the Swiss Higher Education landscape?	13.5 %	32.4 %	27.0 %	10.8 %	10.8 %	5.4 %	37	3.3	*

Source: NIFU survey to applicant to NCCR calls 5. Questions 7. Differences between Call 5 and Call 3&4 are not statistically significant. Within the Call 5 averages, the difference between 'Support high-risk research' and 'Enable Switzerland to become a world leader in a particular research area' is the only that is statistically significant.

* Questions not posed in the 2016 survey.

We also note that facilitating interdisciplinary research comes out quite positively, with 27% of Call 5 applicants replying that the scheme to a great extent (rate 5) facilitates interdisciplinary research, and 51% use the upper part of the scale (rate 4 or 5). Still, 22 % used the lower part of the scale (rate 1 or 2) on this question, and as noted in Section 3.1.2, some of the applicants expressed concerns that the NCCR evaluation process did not involve the proper expertise for assessing interdisciplinary proposals. At the other hand, not all saw interdisciplinary as an important aim. One applicant commented that "NCCR should be a means of supporting excellence, not for spreading the money around and favouring interdisciplinary mediocrity".

Furthermore, some applicants commented that the selection process gave low chances for newly established networks/new collaborative research, early ideas and novel topics and approaches, as the funding scheme was not properly designed for this, but rather for "safe and conservative" selection:

- *I do not think that interdisciplinary proposals do have a good chance in the NCCR funding scheme. Neither do have newly established networks or "early" ideas. Best chances for positive feedback are existing and established networks and not too innovative approaches. Please do not get me wrong: this is completely fine. But it should be clear from the call which are the background ideas for the call.*
- *NCCRs are fine as nice quality projects once they are approved. Both SNF and SERI, may be for this reason, seem to be quite proud of the instrument. However, the instrument is completely overrated as it does in no way optimally promote collaborative research in Switzerland, as many relevant, topical and novel topics*

and approaches are not captured (as the format is not very flexible), as the calls are way too infrequent (should be one call per year or every other year), as there are way too few granted projects (should rather be 5 per year) and have thematical strings attached (this time digitalisation) and as the instrument is overloaded in its hybrid function in seeking research programs and as contribution to formally structuring the Swiss university landscape. A reform of collaborative research in Switzerland is urgent and important to prevent the country from falling behind internationally in all realms which require medium to larger scale collaboration.

- *the selection procedure of the SNSF disregarded some non-scientific problems of proposals. It is problematic to rate proposals very high although they have already been funded generously elsewhere and although the SNSF proposals did not go much further than already-financed projects. This is a very safe and conservative strategy which is not likely to further boost scientific highlights in the country.*

3.2.5 Home institutions' views on the adequacy of the NCCR policies and review processes

Overall, the interviewed representatives for the home institutions were satisfied with the organisation of the process, except from the last stage. Concerning the first stage, some thought the SNSF should use more resources on the review of the outline proposals. Considerable resources are invested by the researchers in writing a research proposal – both outline and full proposals, and it was suggested that with a more strict selection in the outline proposal stage and only allowing those who a graded A to submit a full proposal, one might reduce the resources spent at the home institutions and by the researchers themselves. This implies then that SNSF invests more resources in the outline proposal stage. The suggestion was also based on a perception that some researchers claimed that their proposal had not received a proper review, as pointed out by the applicants (see above).

Another issue was the above-mentioned role of the SERI in the selection process. Some argued that the decisions to grant a NCCR should be based purely on the scientific aspects of the proposals, while others acknowledged that the size of the NCCRs and its potential for restructuring also imply a political view on what is seen as important for Switzerland.

Still, according to interviewees it is time to revise the NCCR scheme – including the size of the grant, the number of centres granted as well as the frequency of calls.

3.3   Conclusions

More expert reviewers, but harder to recruit them: Compared to Call 4, the recruitment of expert reviewers was more demanding in Call 5 – it took more invitations per completed review. The evaluation panels had a broad international profile, similar to that in Call 4. The proportion of women in the panels and among the expert reviewers was higher than in Call 4, but still low. Overall, a broad set of reviews per proposal was achieved. The Call 5 outline proposal evaluation panel was much larger than the one in Call 4, and according to informants the panel review worked well and covered sufficiently the fields of the proposals (based on 2-4 expert reviews per proposal). At the full proposal stage, review expertise was expanded with 4-8 expert reviews per proposal (compared to no remote reviews in Call 4). Still, the difficulties in recruiting expert reviewers indicates that the most wanted reviewers and the best fitted expertise for the individual proposal were not always available. Moreover, for the outline proposals the wanted number of reviews per proposal was in some cases not obtained.

Concurrence and critical review in the outline proposal panel: In most cases the grades given the outline proposals in advance of the panel meeting concurred or differed slightly. However, the result of the meeting was in a majority of the cases lower grades. The review reports indicate that a key concern that resulted in lower grades was that that proposals did not present a research programme sufficiently unified or designed to be an NCCR. The larger panel and the introduction of an extra "non-expert" panel referee for each proposal in Call 5, seem to have increased interaction between fields in the review process, and gave a broader scope to, and possibly more coherence in, the assessments.

Imbalances between fields in the outline proposal review: Some of the interviewed stakeholders were concerned that it was difficult to achieve similar and fair assessments across all fields in the outline proposal panel. More specifically it was stated that the natural sciences did particularly well in the multi-disciplinary panel. Different fields of research have different review practices – in some fields, reviewers appear more critical towards their peers and the field can thereby be disadvantaged in a multi-disciplinary panel. Moreover, it was noted that fields were represented with different voices (from loud/convincing to quiet/modest) in the panel. Even if balanced by the chair's efforts to structure and moderate the discussion, this was seen as potentially causing bias.

Added basis for reviewing the full proposals – external reviews and rebuttals: Addressing the role of two new elements in the Call 5 – the external reviews of full proposals and the rebuttals – in panel assessments, panel members and observers noted that the interviews with the applicants were important, while the external reviews and the rebuttals in many cases appeared to have had moderate importance. Among the interviewed panel members, views on the external reviews

varied from 'very useful' reviews, to a 'mixed bag' with half irrelevant or low-quality reviews. The rebuttals were seen as useful in clearing up misinterpretations and mistakes, and to set focus in the interviews with applicants.

Competitive dynamics in the full proposal panels: Similar to the Call 4, the composition of the full proposal panels in Call 5 produced cases of competitive group dynamics in the panel discussions. With two assigned experts on each proposal, several panel members saw their role as to convince the other panel members about the qualities of the proposal they were assigned. Still, panel dynamics varied, and seem linked to differences in panel size, scholarly overlap and heterogeneity, as well as different personalities and propensity to involve in assessments outside one's specific field of expertise in the panel discussion. Replacing panel chairs – from Research Council members in previous calls to scientists from abroad in Call 5 – do not seem to have altered the panel dynamics.

Moderate satisfaction with reviewer competence: Even if more reviewers were involved in the review of the Call 5 proposals than in previous calls, the applicants were not significantly more satisfied with the review expertise. The NCCR applicant survey in 2020 shows much the same results as the one in 2016: The applicants are moderately satisfied with the competence of the experts who assessed their applications, and with the evaluation panels' ability to assess all the fields of research involved and the thoroughness of the review.

The full proposal applicants are more satisfied with review thoroughness than before: Notably, the full proposal applicants are more satisfied with the competences of reviewers and the thoroughness of the reviews than those who only submitted an outline proposals, and there is also a significant increase in satisfaction with the thoroughness of the review of the full proposals compared to the 2016 survey.

Concerns about limited number of reviews of the outline proposals and the fit of expertise of the full proposals: Specific concerns pointed to in the survey differ between the outline proposals and the full proposals. Those who only submitted an outline proposal expressed concerns regarding the limited number of reviews, lack of thoroughness in review, as well as difficulties in covering the full scholarly breadth of interdisciplinary projects. Among the full proposal applicants, we find concerns that the panel members assigned to their proposals did not have the adequate expertise or for other reasons were unfit for the task. Some of the interviewed representatives of the home institutions suggested that the SNSF invested more resources in the review of the outline proposals in particular.

Split views on ability to enable high-risk and ground-breaking research: According to the applicant survey, the NCCR scheme is better at building specific research areas than at enabling high-risk research. A majority rated the NCCR scheme positively on enabling Switzerland to become a world leader in a particular research area, while a minority did so on its ability to enable high-risk research. Still, views

on the latter differed greatly, as did views on ability to enable original and ground-breaking research.

Challenges in providing a ranked shortlist: Different from previous NCCR calls, the Research Council put together a ranked shortlist based on the lists from the four panels. With one exception the Research Council did not deviate from the ranked list provided by the evaluation panels, still the Research Council's decision-making on the ranking was perceived as difficult and time consuming. The Research Council represents the full scope research fields – from the hard sciences to humanities – and according to some interviewees the making of the shortlist appeared as a competition between fields of research.

4 Impartiality, transparency, comprehensibility, legitimacy and trust

Changes in the 5th call: Compared to Call 4, the evaluation process for the 5th NCCR call involved several new elements directed at improving impartiality, transparency and trust in the process. (a) To enable the SNSF to prepare for recruitment of competent and impartial experts for assessing the proposals, applicants were required to submit a letter of intent two months before deadline for the outline proposals, stating the title, summary and list of participating researchers of their planned proposals. (b) The assessments of the structural aspects of the centres where integrated in the panel assessments and also communicated to the applicants as part of the overall assessments of the proposals. Moreover, (c) applicants were given the opportunity to respond to the to external reviews of the full proposals before the panel meeting (rebuttals), and they received (d) information about the composition of the evaluation panel before their interview with the panel. (e) The evaluation panels were chaired by scientists from abroad, and not by Research Council members as in previous calls. (f)Rates and ranking were concluded in the meetings without disclosing who gave which rates and ranks. (g) The shortlist of proposals recommended by the SNSF to the SERI, included a ranked order of the proposals. (h) There were individual meetings with representatives of the leadership the home institutions to get input on the home institutions' priorities (in advance of ranking the shortlist). See Section 1.3 for details.

4.1 Communication, comprehensibility and transparency

4.1.1 Communication of review criteria, procedures and results

Review criteria: The Call 5 documents informed about the review criteria and explained them under three main headings: Quality and originality of the planned research, Centre aspects (management and structural relevance) and Quality of

applicants. Grouping the criteria into these categories was new to Call 5. Moreover, the Call 5 document was longer and more comprehensive and gave more explication of review criteria, and also some more information about the evaluation process than in Call 4. The reviewer guidelines and explication of the review criteria were also more elaborate than in Call 4. In sum, in Call 5 the review criteria and procedures appear more clearly communicated to applicants, as well as to reviewers, than in Call 4. Concerning the specific Call 5 priority for strengthening research in the area of digitalisation, this was mentioned, but not emphasised, in the call document. It was furthermore not mentioned in the review forms or guidelines to external reviewers or panel members, as the digitalisation priorities were left to the last stage of the selection process/the Ministry.

Review results: The reviews of the outline proposals were communicated to applicants much the same way as in Call 4. Both the individual external reviews and the unified panel assessments were communicated to the applicants. The differences between assessments, and the role of the external reviews and the panel assessments respectively, were explained with some standard lines in the letter to applicants. [20] For the *full proposals,* different from previous calls, there were individual expert reviews, and these were made available to applicants and they were also given the possibility to respond to the reviews in advance of the panel meeting (rebuttals). Access to the reviews also enabled the applicants to better prepare for their interviews with the panel. Moreover, the applicants were informed about the composition of the panel 10 days in advance of the interviews. This was also to help the applicants prepare for the interview – the panels were set and applicants could not object to the panel composition.

The shortlist of proposals sent to the SERI: The SNSF gave each applicant and home institution information about their own applications – whether or not they were on the shortlist. Compared to previous calls, information about the shortlist was more sensitive as the list was in ranked order. In their meeting about the shortlist with the SERI, the home institutions were given information about the other applications on the list, but not about the ranked order. At some stage information about the top candidates on the list was spread, unauthorised, and caused false expectations – as not all top candidates on the list was funded (see also Section 3.2.2 on the difficulties in ranking the shortlist/comparing between fields).

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[20] "The panel strived to reach a balanced overall assessment of each proposal. The overall quality of the received applications was outstanding, and the panel was compelled to adopt a very rigorous selection. The external reviews played an important role in this. However, while the reviewers reviewed only one proposal, the panel had to assess and rate the quality of all proposals comparatively. The opinions expressed in external reviews are generally positive, or they may occasionally include critical remarks that are largely irrelevant to the assessment conducted by the evaluation body. Therefore, the final decision taken by the evaluation panel need not necessarily reflect all assessments and comments submitted by the external experts."

4.1.2 Home institutions' views

Generally, the interviewees at the home institutions were in favour of more communication and transparency, but also saw some dilemmas. They thought that the idea of communicating of the identity of panel members 10 days before the interviews was good. However, most of the informants did not see the purpose of doing so if there were no possibility to act on potential conflicts of interest. It was noted that questions about conflicts of interest in the Call 5 process created considerable frustration and for some also distrust in the evaluation process. The interviewees saw the dilemma between announcing the identity of the panel members early, which may result in a direct approach by the applicants to nudge the panel members, and announcing it at a later stage which means limited opportunities to react. Some of them suggested that there should be a 48 hours opportunity to report potential conflict of interests according to criteria listed by the SNSF.

Some interviewees further underlined that the applicants invest considerable resources in the proposal – much more than for other funding schemes – and therefore there are also much emotions involved as well as pressures. In the final heat the reviews of the proposals are communicated to the applicants, and since they all have reached so far, the reviews are in general positive. The positive reviews may make it challenging for the applicants to accept that their proposal was not selected for an NCCR.

4.1.3 Applicants' opinions on transparency

Concerning transparency, the most pronounced survey result is that the applicants appreciated the possibility for rebuttals on the reviews of the full proposals, and that a large part of those who only submitted an outline proposal were not satisfied with the transparency of funding decisions (Table 4.1).

A large majority gave top score on the possibility for rebuttals on the full proposal reviews (64% rated it 5, 21% rated 4). Those who submitted a full proposal were also generally more satisfied with the feedback to applicants and the transparency of funding decisions than those who only submitted an outline proposal. Moreover, in Call 5 this group was significantly more satisfied with the clarity and completeness of the feedback to applicants than in the previous calls (average 3.9 in 2020 and 2.8 in 2016).

Concerning transparency of funding decisions on other hand, a majority of those who only submitted an outline proposal gave bottom rate (52% rated 'Not at all' transparent). This group is also significantly less satisfied (than the full proposal applicants) with the clarity and completeness of the feedback to applicants.

Both groups of applicants, however, seem reasonably satisfied with the clarity of the terms and requirements for proposals.

Table 4.1 NCCR applicants' views on clarity, transparency and feedback. Replies by proposal stage reached. Per cent.

Considering your NCCR application, to what extent did you find the following issues/processes satisfactory?	5 To a great extent	4	3	2	1 Not at all	Cannot say	N	Average (scale 1-5) [1] Call 5	Call 3&4
The clarity of the terms and requirements for proposals (call documents)									
Only outline proposal	30.4 %	47.8 %	13.0 %	4.3 %	4.3 %		23	4.0	3.7
Full proposal	42.9 %	35.7 %	21.4 %				14	4.2	4.0
Total	35.1 %	43.2 %	16.2 %	2.7 %	2.7 %		37	4.1	3.9
The transparency regarding the funding decisions[2]									
Only outline proposal	4.3 %	13.0 %	21.7 %	4.3 %	52.2 %	4.3 %	23	2.1	
Full proposal	7.1 %	35.7 %	21.4 %	28.6 %	7.1 %		14	3.1	
Total	5.4 %	21.6 %	21.6 %	13.5 %	35.1 %	2.7 %	37	2.5	
The clarity and completeness of the feedback to applicants regarding the outline proposals									
Only outline proposal	4.3 %	13.0 %	8.7 %	30.4 %	43.5 %		23	2.0	(2.6)[1]
Full proposal	42.9 %	28.6 %	28.6 %				14	4.1	
Total	18.9 %	18.9 %	16.2 %	18.9 %	27.0 %		37	2.8	(2.7)[1]
The clarity and completeness of the feedback to applicants regarding the full proposals									
Full proposal	35.7 %	35.7 %	14.3 %	14.3 %			14	3.9*	(2.8)[1]
The possibilities to respond to the review of my full proposal (rebuttal) [2]									
Full proposal	64.3 %	21.4 %	7.1 %		7.1 %		14	4.4	

Source: NIFU survey to applicants to NCCR call 5. Question 1: Considering your NCCR application, to what extent did you find the following issues/processes satisfactory?

[1] *Figures in brackets are not directly comparable. The 2016 questionnaire did not distinguish between the feedback on the outline and full proposals on this item, but simply asked about "The clarity and completeness of the feedback to applicants". See Table 4.1 in the 2016 report.*

[2] *Questions not posed in the 2016 questionnaire.*

*Differences in averages between Call 5 and Call 3&4 are statistically significant for this question only.

Also, when comparing with transparency in other funding schemes, those who only submitted an outline proposal are less satisfied with the NCCR selection process. Whereas around 40% in both groups indicate that transparency in the NCCR scheme is about the same as in their other relevant national funding sources and in ERC, a substantial proposition of the full proposal applicants (29%), but none of those who only submitted an outline proposal, find that it is better (Table 4.2).

The transparency of the selection process	The NCCR scheme is				N	PP difference Better-poorer	
	Better	About the same	Poorer	Cannot say/NA		Call 5	*Call 3&4
NCCR compared to your other relevant national funding sources							
Only outline proposal	0.0 %	43.5 %	43.5 %	13.0 %	23	-43.5	-60.0
Full proposal	28.6 %	42.9 %	28.6 %	0.0 %	14	0.0	-29.0
Total	10.8 %	43.2 %	37.8 %	8.1 %	37	-27.0	-42.9
NCCR compared to the European Research Council							
Only outline proposal	0.0 %	43.5 %	34.8 %	21.7 %	23	-34.8	-15.4
Full proposal	28.6 %	35.7 %	28.6 %	7.1 %	14	0.0	0.0
Total	10.8 %	40.5 %	32.4 %	16.2 %	37	-21.6	-7.1

Source: NIFU survey to applicants to NCCR call 5. Question 8 and 9: When comparing the NCCR scheme to your other relevant national funding sources/ to the selection process of the European Research Council, is the NCCR poorer, about the same or better, concerning: The transparency of the selection process.

* Figures from Table 4.3 in Langfeldt and Borlaug 2016.

**25 respondents entered information on which other funding source they compared with. 23 of these compared with other SNSF funding, 2 with funding schemes in other countries.

In the free text sections of the survey, the concerns regarding transparency are mostly from applicants who did not submit a full proposal. They address both transparency regarding the list of proposals, the number of reviews and the bases for the assessments:

- *It is totally intransparent how many reviews the SNSF requests and how many are actually communicated.*
- *Overall, I find the SNSF very intransparent with respect to communicating how many applications came in, from what institutions and with what results. This makes it difficult to cooperate with other institutions in future applications. Maybe the data is there but I would not know where to find it.*
- *We would like the panel members to be more accountable for the decisions they take; to provide more details on how the decisions are reached, and in general to provide more transparency. Currently, there is the impression that factors beyond scientific excellence and relevance to the Swiss society play a role in these processes.*

Among the full proposal applicants at the other hand, two stated that there was more transparency in Call 5 than in previous NCCR calls, while another suggested to increase "transparency about the balance between the weights assigned to basic science vs societal relevance", and a third one was more concerned about lack of transparency in the home institution's dialogue with the SNSF and the SERI:

- *The selection procedure in the SNF was good. However I find that the step at which my institution is interacting first with SNF and then with SERI lacks transparency towards us. I wish that the leader (and coleader) of the application would be present together with the rector/vice-rectors in those two meetings. Also what*

was going to be the content of those meetings was less clear to us than other steps in the selections.

Moreover, one full proposal applicant commented that the priority regarding digitalisation in Call 5 was not clearly described in the call documents, and would like more information about what roles future NCCRs were supposed to have in digitalisation. Another would like more information about the SERI's criteria for assessing the proposals.

4.2 Impartiality, legitimacy and trust

4.2.1 The handling of conflicts of interest

According to the SNSF general conflicts of interest regulations, persons involved in SNSF grant evaluation, including external reviewers, members of evaluation bodies and SNSF staff, shall withdraw from the evaluation if they have any personal interest in the matter, are related to or in close collaboration or competition with the applicant or there are any other conflicts of interest.[21] The following up of these rules in NCCR Call 5 were done much the same way as in previous calls. Potential conflicts of interest of the external experts and panel members were checked by the SNSF administration in advance and each expert/panel member had to declare any conflicts of interest in advance of the review.

Among informants it was noted that questions regarding conflicts of interest created disturbance, dissatisfaction and complaints in the Call 5 process. There were some divergent views on the definition and identification of conflicts of interest that seem to have been hard to resolve. Informants noted that it is particularly challenging to avoid any potential conflicts of interest in smaller fields and that the groups applying for NCCRs are large, and often have strong international networks. Some noted that one might need to check for collaboration longer back than 5 years (which in the SNSF regulations is the general period for identifying conflicts of interest) to ensure no doubts about conflicts of interest.

Taking the view of the external observer is important in defining and handling potential conflicts of interest. As noted in the SNSF factsheet on conflicts of interest, an objective conflict of interest appears when an external observer would have "reasonable grounds to think that an evaluation body member might not be impartial".[22] Still, defining and agreeing on these "reasonable grounds" is difficult. In the NCCR Call 5 evaluation process, ensuring that all parties saw the process as

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[21] http://www.snf.ch/SiteCollectionDocuments/richtlinien_interessenkonflikte_gesuchsverfahren_e.pdf

[22] http://www.snf.ch/SiteCollectionDocuments/Factsheet_CoI_2018.pdf

impartial appears to have been challenging. The concerns regarded both on the panel reviews and the Research Council.

The evaluation panels: Interviewed panel members perceived questions about conflicts of interest to be well handled and unproblematic; there were standard procedures like those in other funding agencies they had served. Still, some of the interviewed panel members and observers raised questions whether all reviewers were equally impartial. It was stated that it was generally hard to get an overview of all relations of a large NCCR team, sort out everybody with a conflict of interest and still find external experts and panel members who are competent and willing to do the review. Regarding the panel members at the full proposal stage, potential conflicts of interest are extra sensitive. As explained in Section 3.2.2, several panel members perceived that they were expected to act as advocates of the specific proposals assigned to them, and in case they did not take on that role, this could disfavour the proposal. Hence, any previous collegiate collaboration, relations or disagreements/conflicts may more easily be perceived as favouring or disfavouring a proposal. This calls for a strict interpretation of conflicts of interest in selecting the panel members.

Still, it is hardly feasible to find panel members equally impartial and competent – i.e. at the same collaborative and scholarly distance – for all proposals. Ideally the panel members should have the same level of competence for the assigned proposal, be equally able to promote the proposal in the panel, and have no relations that could be questioned. Among the factors complicating/impeding this, are small and specialised fields of research where most researchers in the forefront collaborate or they may be antagonists. Moreover, some NCCR proposals have a broad interdisciplinary scope, and it is hard to find expertise that covers the whole proposal, let alone equally qualified and impartial expertise on each part of it. Then comes the more general problem of finding experts who are willing and available to do the assessments.

The Research Council: Conflicts of interest was an important concern also in the Research Council. Research Council members with a formal conflict of interest did not observe NCCR panel meetings or participate in the discussions or decisions about the shortlist. The Research Council's role in putting together and ranking the shortlist may still be perceived as problematic. The SNSF Research Council consists of active researchers affiliated with Swiss universities and research organisations, and they put together the shortlist of proposals to be forwarded to the SERI. Even if Council members with a formal conflict of interest (i.e. relations to the proposals or applicants) are excluded from the discussion and the decisions, the remaining may have concerns about research topics or research environments that make them less impartial. As noted in the previous evaluation report, in such situations the Council may put extra emphasis on being thorough and fair, and so

find it hard to make clear priorities (Langfeldt & Borlaug 2016, p. 50). In Call 4, the result was that the Council refrained from ranking the shortlist; in Call 5 the result was that much time and efforts were spent on providing a ranked list that (with one exception) did not deviate from the ranking provided by the evaluation panels (see Section 3.2.2 above). There were different opinions on this among the informants; some would like to limit the Council's role (and time) in putting together the shortlist, others thought the Council should be involved in the assessments and produce a ranked list.

4.2.2 Applicants' opinions on impartiality

When analysing the survey replies concerning impartiality, again we see that the full proposal applicants are more positive than those who only submitted an outline proposal. A large part of the full proposal applicants (57%) use the upper part of the scale when rating the impartiality of the outline proposal panel, whereas 23% of those who only submitted an outline proposal did so (Table 4.3). Moreover, none of the full proposal applicants, but 46% of those who only submitted an outline proposal, use the lower part of the scale.

Concerning the full proposal panel, the applicants appear to have more confidence in the impartiality of the review in 2020 than in 2016 (50% give top rate for Call 5, compared to 29% for Call 3 and 4), but due to small numbers the difference between the calls is not statistically significant. Nor are differences in averages scores appearing in the last columns of Table 4.3, and the confidence in the impartiality of the review seem to be about the same as in previous calls.

Table 4.3 Applicants' perceptions of the impartiality of the evaluation panel. Replies by call and funding. Per cent.

To what degree do you think the panel that assessed your outline/full proposal provided an **impartial and unbiased assessment** of your application?	5 To a great extent	4	3	2	1 Not at all	Cannot say	N	Average (scale 1-5)	
								C5	*C3 &4
Outline proposal									
Only outline proposal	13.6%	9.1%	13.6%	18.2%	27.3%	18.2%	22	2.6	2.8
Submitted full proposal	28.6%	28.6%	28.6%	0.0%	0.0%	14.3%	14	4.0	3.6
Total	19.4%	16.7%	19.4%	11.1%	16.7%	16.7%	36	3.1	3.2
Full proposal									
Submitted full proposal	50.0%	7.1%	7.1%	14.3%	14.3%	7.1%	14	3.7	3.3

Source: NIFU survey to applicants to NCCR call 5. Question 4 (outline proposal) and Question 5 (full proposal).

*Last column shows average score from the survey to applicants to NCCR calls 3 and 4. See Table 4.4 in Langfeldt and Borlaug 2016 for the distributions of replies to these questions from NCCR Call 3 and Call 4 applicants. Differences in averages between the calls are not statistically significant.

We also asked the applicants to compare impartiality and confidence in the NCCR scheme with their other relevant national funding sources and with the European Research Council (ERC). As in the previous survey, a large part of the applicants indicate that this is about the same for NCCR, ERC and other national funding schemes, or they find the NCCR scheme poorer. Still, on some items we see a significant difference between the calls. The proportions who find the NCCR scheme *better than other national funding schemes* regarding impartiality and ethical standard of the selection process and general confidence in the selection process, are significantly higher in 2020 that in 2016. Especially the full proposal applicants found the NCCR scheme better than other national funding schemes on these items (Appendix 2, Table A3).

Further comparing the results from the two surveys, we find the opposite results when the applicants compare the NCCR with the ERC (Appendix 2, Table A4). Compared with the similar figures from 2016, in 2020 a larger proportion of the applicants rated the NCCR poorer than the ERC on the general confidence in the selection process (43% rated poorer in 2020, and 23% in 2016).[23] We see no clear explanation for this. It may relate to increased general confidence in the ERC selection process or decreased general confidence in the NCCR selection process – due e.g. to concerns with transparency and impartiality in NCCR Call 5.

Responses regarding the handling of intellectual property and confidential information are much the same in the 2020 and in 2016 survey. Most respondents indicate that this is about the same for NCCR, ERC and other national funding schemes, or they reply that they do not know. Still, in the free text comments we find one respondent with serious concerns over confidentiality and conflicts of interests, stating that a conflict of interest "became only evident after the panel meeting" and that "Finally, we lost the race, and a competitor with financial interests got deep insights into our projects."

Other free text comments addressed various kinds of (perceived) biases. The full proposal applicants were concerned about the composition of the evaluation panels, whereas among those who had submitted an outline proposal only, we find concerns with focus on the support and policies of the home institutions, as well as distrust in the impartiality of the SNSF:

Full proposal:

- *The administrative procedures implemented by the SNF are very good, and personal contact with SNF staff was always helpful and constructive. Our only (but important) complaint is with the selection of the proposal panels. At each stage, the two members in charge of every submission are the key players, and their*

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[23] The similar differences regarding the impartiality and ethical standard of the selection process are not statistically significant.

selection is absolutely crucial. We felt our panel was biased at the outline stage already, but it was more flagrant still at the full proposal stage. One of the two panel members in charge of our submission very clearly had a negative prior not only with respect to our proposal but also to our academic discipline.

- *the bias of some reviewers toward or against certain institutions was showing [in the interview with the panel]*
- *The evaluation of proposals in broad panels may introduce bias. Different communities have different cultures for reviewing proposals (and publications), formulating scientific claims, "sales pitch", etc. This makes it difficult to compare and rank proposals from different disciplines in the same panel and can favour certain areas over others.*

Outline proposal:

- *The process was highly political and non scientific. It is more about the agenda of departmental politics than about science and Swiss interests.*
- *The SNF is staffed at all its panels by several mediocre scientists with no international visibility who happen to be well connected and that is how they get elected. In turn this affects every activity of the SNF. Creating panels with scientists of international calibre would help. I am afraid CH there are far too many connections and interests given the size of the place.*

4.3 Conclusions

Increased transparency, but still challenges: In the Call 5 guidelines, the review criteria and procedures were more clearly communicated to applicants, as well as to reviewers, than in the Call 4 documents. Moreover, for the full proposals, different from previous calls, there were individual expert reviews which were made available to applicants with the possibility to respond to the reviews (rebuttals). The applicants were also informed about the composition of the panel in advance of the interview. This was a help for applicants in preparing for the interviews, but also caused dissent as there was no opening to report and act on potential conflicts of interest. Another factor causing dissatisfaction was unauthorised spread of information to applicants about the top candidates on the shortlist. This caused false expectations and probably less confidence in the selection process.

Applicants were concerned about low transparency: Those who only submitted an outline proposal were far less satisfied with the feedback to applicants and the transparency of funding decision than the full proposals applicants. Specific concerns were lacking information about the list of proposals, limited transparency about the bases for the assessments – in particular the weights assigned to scientific quality and societal relevance – and transparency about the home institution's dialogue with the SNSF and the SERI.

More satisfied full proposal applicants: The applicants appreciated the possibility for rebuttals on the reviews of the full proposals. In the survey, a large majority gave top score on the possibility for rebuttals on the full proposal reviews. Those who submitted a full proposal were also generally more satisfied with the feedback to applicants than those who only submitted an outline proposal. The full proposal applicants were also significantly more satisfied with the clarity and completeness of the feedback to applicants than in the previous calls.

Pronounced challenges in defining conflicts of interest and ensuring impartiality: The handing of conflicts of interest was done the same way in Call 5 as in previous calls, i.e. following the SNFS guidelines and routines for checking and declaring conflicts of interest. Still, questions regarding conflicts of interest created disturbance, dissatisfaction and complaints, and there were divergent views on the definition and identification of conflicts of interest. The impartiality concerns included both the full proposal panels and the Research Council. Concerning the first, it was noted that it is particularly challenging to avoid any potential conflicts of interest in smaller fields and when proposals come from large teams with strong international networks. Moreover, potential conflicts of interest were extra sensitive in the full proposal panels due to competitive panel dynamics (described in Section 3.2.2). Panel members, to varying degrees, acted as advocates of the proposals assigned to them and had a crucial role for the outcome for this specific proposal. Hence, any previous collaboration, relations or disagreements may more easily be perceived as favouring or disfavouring a proposal. Regarding the Research Council, the concerns were its impartiality in putting together and ranking the shortlist, as Council members have close links to Swiss research – even if those with links to the proposed NCCRs are excluded from the process.

Applicants' opinions on impartiality: The applicants' confidence in the impartiality of the NCCR evaluation panels was not significantly different from previous calls. As in previous calls, the full proposal applicants were more positive than those who only submitted an outline proposal. A majority of the full proposal applicants used the upper side of the scale when rating the impartiality of the panel, whereas a minority of those who only submitted an outline proposal did so. However, when comparing to ERC's selection process, the full proposals applicants of Call 5 had significantly less confidence in the NCCR selection process than had the applicants in Call 4.

5   Effectiveness and efficiency

Changes in the 5th call: In Call 5, measures were taken to shorten the SNSF's evaluation process, and especially the time for review of the outline proposals were reduced. Still, the final selection of the full proposals to be funded, took somewhat more time in Call 5 than in Call 4. In sum, the time from the outline proposal submission to the final selection was one month shorter in Call 5 than in Call 4. Moreover, part of the evaluation process was simplified by integrating the assessments of the structural aspects of the proposed NCCRs in the evaluation panels' assessments, rather than as separate assessments by the Research Council members (as in Call 4). See Section 1.3 for details.

5.1   Time and resources

A general concern of the NCCR selection process is the long timeline – 22 months from the submission of outline proposals to the final selection in Call 5, reduced from 23 months in Call 4 (see Table 1.2, Chapter 1). Especially the time for the review of the outline proposals was reduced, and this was enabled by letters of intent (containing information of topics and teams) that allowed the SNSF to start recruitment of expert reviewers in advance of receiving the outline proposals. As noted in the 2016 evaluation report, the NCCR selection process is considerably longer than that of other funding schemes for large centre grants (Langfeldt and Borlaug 2016, p.60).

In the survey, the applicants were asked about the overall cost efficiency of the NCCR application and selection process, the time and efforts needed to prepare an outline proposal and a full proposal, the time from submitting the outline proposal to the result of the outline proposal round was announced, the time from submitting the full proposal to the shortlist was announced, as well as the time from the shortlist was announced to the final decision by the SERI.

The results show that the applicants were moderately satisfied with the time and efforts required, and the efficiency of the process, and that the average rates given are about the same as for previous NCCR calls (Table 5.1). The lowest

average score appear on the time from the shortlist was announced to the final decision by the SERI, where half of the applicants used the lower part of the scale, and on the overall cost efficiency of the application and selection process where 35% of the applicants used the lower part of the scale.

We also note that the reduction of the time from outline proposals were submitted to the result of this first stage was announced[24] did not result in better scores on this item.[25]

Table 5.1 Considering your NCCR application, to what extent did you find the following issues/processes satisfactory? Replies by NCCR proposal stage. Per cent.

	5 To a great extent	4	3	2	1 Not at all	Cannot say	N	Average (scale 1-5)	
								Call 5	C3&4
The overall cost efficiency of the application and selection process									
Outline p only	4.3 %	21.7 %	13.0 %	34.8 %	8.7 %	17.4 %	23	2.7	2.9
Full proposal	14.3 %	21.4 %	35.7 %	7.1 %	14.3 %	7.1 %	14	3.2	3.0
Total	8.1 %	21.6 %	21.6 %	24.3 %	10.8 %	13.5 %	37	2.9	2.9
The time and efforts needed to prepare an outline proposal									
Outline p only	4.3 %	43.5 %	26.1 %	17.4 %	8.7 %		23	3.2	3.3
Full proposal	35.7 %	50.0 %	14.3 %				14	4.2	3.8
Total	16.2 %	45.9 %	21.6 %	10.8 %	5.4 %		37	3.6	3.6
The time and efforts needed to prepare a full proposal									
Full proposal	21.4 %	35.7 %	28.6 %	14.3 %			14	3.6	3.6
The time from submitting the outline proposal to the result of the outline proposal round was announced (5.5 months)[2]									
Outline p only	17.4 %	52.2 %	21.7 %		4.3 %	4.3 %	23	3.8	3.7
Full proposal	14.3 %	21.4 %	42.9 %	14.3 %	7.1 %		14	3.2	3.7
Total	16.2 %	40.5 %	29.7 %	5.4 %	5.4 %	2.7 %	37	3.5	3.7
The time from submitting the full proposal to the short-list was announced (6.5 months)									
Full proposal	14.3 %	28.6 %	28.6 %	14.3 %	14.3 %		14	3.1	(3.6)[1]
The time from short-list was announced to the final decision by SERI (6 months)									
Full proposal	7.1 %	7.1 %	28.6 %	35.7 %	14.3 %	7.1 %	14	2.5	(3.6)[1]

Source: NIFU survey to applicants to NCCR call 5.

[1] Figures are not comparable between surveys. In 2016, these two phases were one item in the questionnaire and there was no information about months: "The time from submitting the full proposal to the final decisions was announced". See Table 5.1 in the 2016 report.

[2] In the 2016 questionnaire there was no information about months.

When asked to compare the time and efficiency of the NCCR application and selection process with other national funding sources and with ERC grants, the applicants in most cases indicate that the NCCR scheme is about the same or poorer. 62% indicate that time and efficiency of the NCCR application and selection process is about the same as their other relevant national funding schemes, 27% that it is poorer. 51% indicate that time and efficiency of the NCCR application and selection process is about the same as for ERC, 24% that it is poorer. On both items, 5% indicate that the NCCR scheme is better (Table 5.2).

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[24] It was reduced from 9.5 to 5.5 months, see Table 1.2.
[25] Figures are not fully comparable as in the previous survey the questions did not include information about the number of months.

These figures are much the same as in the previous survey, with the exception that a significantly higher proportion of the full proposal applicants indicate that the NCCR application and selection process is poorer than ERC. [26] Notably the comparisons are with less complex grants and selection processes, and when applicants rate the time and efficiency of the NCCR application and selection process as about the same as other funding schemes, it can be interpreted as a positive result.

Table 5.2 Time and efficiency of the NCCR application and selection process compared to other national funding sources and to ERC. Replies by proposal stage. Per cent.

Time and efficiency of the application and selection process	The NCCR scheme is					PP difference Better-poorer	
	Better	About the same	Poorer	Cannot say/NA	N	Call 5	C3&4
NCCR compared to your relevant national funding sources[1]							
Only pre-proposal	8.7 %	69.6 %	13.0 %	8.7 %	23	-4.3	-23.1
Full proposal	0.0 %	50.0 %	50.0 %	0.0 %	14	-50.0	-33.4
Total	5.4 %	62.2 %	27.0 %	5.4 %	37	-21.6	-28.6
NCCR compared to the European Research Council							
Only pre-proposal	8.7 %	56.5 %	8.7 %	26.1 %	23	0.0	7.7
Full proposal	0.0 %	42.9 %	*50.0 %	7.1 %	14	-50.0	0.0
Total	5.4 %	51.4 %	24.3 %	18.9 %	37	-18.9	3.5

Source: NIFU survey to applicants to NCCR calls 3 and 4. Question: When comparing the NCCR scheme to your other relevant national funding sources/ to the selection process of the European Research Council, is the NCCR poorer, about the same or better, concerning Time and efficiency of the application and selection process.

[1] 25 respondents entered information on which other funding source they compared with. 23 of these compared with other SNSF funding, 2 with funding schemes in other countries.

* Difference between the calls is statistically significant (more find NCCR poorer compared to ERC in Call 5 than in Call3&4).

The applicants were given four months for preparing the full proposals in Call 5 (and in previous calls). In the 2020 survey, we asked the applications how much time – after receiving the feedback letter on the outline proposals – they would like to have for preparing their full proposal. As shown in Table 5.3, half of the full proposal applicants would like more than four months. 36% of them indicate six months, 14% indicate five months, 36% of them indicate four months and 14% three months (no one indicates two months or more than six months). In sum, only a small minority of the applicants seem to agree with cutting time for full proposal preparation as a means to shorten the NCCR selection process.

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[26] 50% in 2020 compared to 13% in 2016. Fewer reply cannot say, and fewer reply better, in 2020.

Table 5.3 Time wanted for preparing an NCCR full proposal. Replies by NCCR applicant's proposal stage. Per cent.

	Number of months wanted for full proposal							
Applicant stage	3	4	5	6	7	8	Don't know	N
Only outline proposal	12.5 %	6.3 %	25.0 %	12.5 %	6.3 %	12.5 %	25.0 %	16
Submitted full proposal	14.3 %	35.7 %	14.3 %	35.7 %				14
Total	13.3 %	20.0 %	20.0 %	23.3 %	3.3 %	6.7 %	13.3 %	30

Source: NIFU survey to applicants to NCCR Call 5. Question 2. "Time for preparing an NCCR full proposal: How much time would you like to have for preparing the full proposal (after receiving the feedback letter on the outline proposal)?" Reply categories also included 2 months, which no one selected.

The free text sections in the survey also display different views on the time and efficiency of the process. Comparing with previous NCCR selection processes, one applicant stated that Call 5 was "more efficient and leaner". Another expressed that "The complete review process is long, but adequate for the complexity and schemes of the undertakings in the NCCRs". On the other hand, some expressed concerns that the application process demanded too much work, and that also the length of the selection process was a burden. Concerns were mostly regarding the last parts of the process. One applicant suggested that "If possible, the time until a decision is communicated should be shortened", another was concerned that "there is again a very long time even after the decision to be able to actually start".

5.2   Organisation and goal achievement

Similar to what was found in the previous review (Langfeldt and Borlaug 2016) of the SNSF's evaluation process, the process appears well organised and goal achievement is generally high. The funding scheme is highly attractive, the grants have high prestige and interviewed international panel members involved in the review found the evaluation process very well organised by the SNSF.

A concern in the evaluation of the Call 4 process was that there were separate assessments of the structural aspects of the proposed NCCRs, but no defined procedures for integrating these in the evaluation process (see Section 3.2.3 above and Langfeldt & Borlaug 2016, p. 58). In Call 5, the assessments of the structural aspects were more integrated in the peer review part of the process; "Centres aspects/management/structural relevance" were separately assessed and rated as well as integrated in the panels' overall assessments (see Section 3.2.3). In this way structural assessments were provided without demanding a parallel process, and better integrated in the assessments, rather than demanding resources for reviews that seemingly had no impact on the outcome.

Assessments of the structural aspects were not done as thoroughly and with the same level of expertise as in Call 4, and some interviewees were concerned they were insufficient. Overall, assessments of the structural aspects still seemed

sufficient for the SNSF-part[27] of the selection process, and by integrating the structural assessments in the panel review the process appeared more efficient and streamlined than in Call 4.

Another concern in the 2016 report, was that much time and effort were spent in the Research Council trying to rank the full proposals, but the SNSF still ended up sending an unranked shortlist to the SERI. Different from this, in Call 5, the panels that assessed the full proposals provided the SNSF with more conclusively ranked lists than in Call 4, and the Research Council put together a ranked shortlist based on the lists from the four panels. As explained in Section 3.2.2 above, with one exception the Research Council did not deviate from the ranked lists provided by the evaluation panels, while the discussions for concluding on the ranking was perceived as difficult and time consuming. Moreover, the ranking provided by the Council was not conclusive for the SERI's/EAER's final selection of NCCRs. Hence, time and efforts spent on a demanding and unfulfilling decision-making process was still a concern in Call 5.

These concerns are further discussed in Chapter 6.

5.3   Conclusions

Well organised, but long timeline: Overall, the NCCR selection process is well organised and goal achievement is high, in Call 5 as in previous calls. A general concern is still the long timeline – 22 months from the submission of outline proposals to the final selection in Call 5. This is considerably longer than for similar large grant funding schemes.

Integrated assessments of structural aspects: In Call 5, the assessments of the structural aspects were more integrated in the peer review part of the process and did not demand the extra resources and parallel process spent on this in Call 4. This gave a more efficient and streamlined evaluation process and the structural assessments still appeared sufficient for the SNSF-part of the selection process.

Demanding and redundant ranking of full proposals: Time and efforts spent on ranking the shortlist of full proposals was a concern in Call 5. Different from previous calls, the Research Council put together a ranked shortlist based on the ranked lists from the four panels. As the ranking decisions were demanding (costing both time and frustration), the Research Council's list hardly deviated from the list provided by the evaluation panels, and the ranking provided by the SNSF was not conclusive for the Ministry's final selection of NCCRs, in retrospect the ranking appeared redundant.

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[27] SERI conducted additional assessments of the structural aspects and integrated these in the final decision-making.

Unchanged satisfaction with efficiency: The applicant survey indicates that the applicants were moderately satisfied with the time and efforts required in the application and selection process, and with the efficiency of the process. The applicants' average rates on these items are about the same as for previous NCCR calls. When comparing with efficiency in the application and selection processes for smaller and less complex grants, applicants' assessments of the NCCR process comes out reasonably well. In general, the applicants appear less satisfied with the time spent on the final selection in the Ministry, than with the time spent on SNSF part of the process. Moreover, only a small minority of the applicants recommend cutting time for full proposal preparation as a means to shorten the NCCR selection process.

6 Conclusions and recommendations

The 5th NCCR call differed from previous calls in many respects. In this chapter we first assess the impact of the reforms in Call 5. We then review goal achievement and remaining challenges with regard to outreach, attractivity, reviewer competence and procedures, transparency, impartiality and efficiency. In the final section we provide some suggestions for handling the challenges.

6.1 The changes in the last NCCR call

External reviews with rebuttals for the full proposals

Unlike previous calls, the full proposals stage in Call 5 included individual expert reviews which were made available to applicants with the possibility to respond to the reviews (rebuttals) before the interview with the evaluation panel. There were 4-8 external expert reviews per proposal, compared to reviews from panel members only in Call 4. Hence, the basis for assessments was greatly expanded. According to the interviewed panel members and observers, the external reviews and the rebuttals appeared to have had varying importance. Among interviewed panel members, views on the external reviews varied from 'very useful' reviews, to a 'mixed bag' with half irrelevant or low-quality reviews. Views on the rebuttals also varied, but they were generally seen as useful in clearing up misinterpretations and mistakes, and to set focus in the interviews with applicants.

Even if more reviewers were involved in the review of the Call 5 proposals than in previous calls, the applicants are not significantly more satisfied with the review expertise. Still, the full proposal applicants are more satisfied with the competences of reviewers and the thoroughness of the reviews than those who only submitted an outline proposal. Moreover, compared to the 2016 survey, there is a significant increase in their satisfaction with the thoroughness of the review of the full proposals. We also see that among those who submitted a full proposal, the satisfaction with the SNSF support in the application process is significantly higher in the 2020 survey than in the 2016 survey.

Priority for digitalization topics

Call 5 included a priority for digitalization topics. Overall, the topical priority does not seem to have impacted the outreach and attractivity, apart from attracting more proposals on the topic. We still note that there were different views among the informants on whether the NCCR calls should include topical priorities.

Integrated evaluation of structural aspects

In Call 5, the assessments of the structural aspects were more integrated in the peer review part of the process and did not demand the extra resources and parallel process spent on this in Call 4. This gave a more efficient and streamlined evaluation process, and overall the provided structural assessments appear sufficient for the SNSF-part of the selection process. Furthermore, the home institutions appreciated the meetings for clarifying structural aspects with the SNSF.

Panel chairs from abroad and the Research Council less involved

In Call 5, the evaluation panels were chaired by scientists from abroad, and not by Research Council members as in previous calls. Hence, the role of the Research Council members changed from active chairs in previous calls to passive observers in Call 5, while experienced scholars from abroad chaired the meetings. The chairs were from fields not matching the proposals and did not review proposals but had the task of moderating the discussion and ensuring similar and fair review of all proposals. According to informants, this worked well and also provided more equal procedures across panels as one chair served on several panels. Looking at applicants' satisfaction with impartiality of the panels we still do not see a significant increase from previous calls. In the applicant survey, there is an increase in the proportion who replied that the panel to a great extent provided an impartial and unbiased assessment of their full proposal (compared to similar figures in Call 3 and 4), but this increase is not statistically significant.

Ranked shortlist of full proposals

Time and efforts spent on ranking the shortlist of full proposals was a concern in Call 5. Different from previous NCCR calls, the Research Council put together a ranked shortlist based on the lists from the four panels. As the ranking decisions were demanding (costing both time and frustration), the Research Council's list hardly deviated from the list provided by the evaluation panels, and the ranking was not conclusive for the Ministry's final selection of NCCRs, the ranking in retrospect appears redundant. The ranked shortlist also caused disturbances and discontent due to unauthorised spreading of information. There is a transparency

dilemma in producing a ranked list: Whereas the list as such was binding for the Ministry (the Ministry could only choose among the proposals on the lists), the ranking was only indicative, intended as an aid in the Ministry's work. Whereas an unranked list might be public information, a list with an indicative ranking make less sense as public information. At the same time, in terms of transparency about the process, the very fact that the shortlist was ranked should be open information (and the Call document from 2017 announced that the list would be ranked by the Research Council), and a ranked list is likely to spark much curiosity among the applicants about the outcome. Hence, ranking a list may at the same time limit transparency and spark curiosity – and so give less satisfied applicants.

Strong encouragement to limit the number of outlines proposal

In Call 5, the home institutions were strongly encouraged by the SNSF to limit the number of outline proposals (no specific limit), and some fewer outline proposals were submitted in Call 5 than in Call 4 (54 vs. 63). The home institutions reacted differently to the encouragement – some performed an internal pre-selection round, while others did not. While an internal pre-selection seems to be inevitable for the smaller institutions due to resource considerations, this is not an issue for some of the larger ones. Rather they preferred not to interfere in the scientific processes and all who wanted could submit an outline proposal. According to the applicant survey, there was more preselection of the outline proposals, but less preselection of full proposals, at the home institutions in Call 5 than in Call 4.

6.2   Goal achievement and remaining challenges

Outreach and attractiveness

The NCCR scheme is attractive and prestigious both to applicants and to home institutions. Most applicants rate the prestige of the NCCR scheme as higher than their relevant national funding, but lower or on level with ERC grants. Similar to Call 4, Call 5 had a broad scholarly outreach, with applications coming from a broad set of research fields, and a large part of them included research in multiple research areas. Still, concerns were expressed about the NCCR scheme's outreach in the social sciences and humanities as well as in less established research fields. Furthermore, most NCCRs are awarded to a few (large) universities. A considerable number of organisations applied in Call 5, but only home institutions that had previously hosted an NCCR were successful. Similar to previous calls, there was a concern among interviewees that smaller universities and research organisations may struggle to support an NCCR proposal to the desired level. There is also a

persistent gender imbalance; only one proposal with a female director made it to the shortlist in Call 5 and none was awarded.

Review competence and procedures

The evaluation panels had a broad international profile, similar to Call 4. The proportion of women in the panels and among the expert reviewers was higher than in Call 4, but still low. Overall, a broad set of reviews per proposal was achieved. Still, the difficulties in recruiting expert reviewers – for the outline proposals in particular – indicates that the most wanted reviewers and the best fitted expertise for the individual proposal were not always available. Moreover, for the outline proposals the wanted number of reviews per proposal was in some cases not obtained.

The larger outline proposal panel and the introduction of an extra "non-expert" panel referee for each proposal in Call 5, seem to have increased interaction between fields in the review process, and given a broader scope to, and possibly more coherence in, the assessments at the outline proposal stage. Still, some of those who only submitted an outline proposal expressed concerns regarding the limited number of reviews, wrong or narrow expertise and lack of thoroughness in review, as well as difficulties in covering the full scholarly breadth of the proposal and in assessing interdisciplinary projects. Moreover, some of the interviewed stakeholders were concerned that it was difficult to achieve similar and fair assessments across all fields in the outline proposal panel. More specifically it was stated that the natural sciences did particularly well in the multi-disciplinary panel. Even if balanced by the chair's efforts to structure and moderate the discussion, differences in review style and practices between fields and panel members were seen as potentially causing bias.

Similar to the Call 4, the composition of the full proposal panels in Call 5 produced cases of competitive group dynamics in the panel discussions. With two assigned experts on each proposal, several panel members saw their role as to convince the other panel members about the qualities of the proposal they were assigned. Still, panel dynamics varied, and seem linked to differences in panel size, scholarly overlap and heterogeneity, as well as different personalities and propensity to involve in assessments outside one's specific field of expertise in the panel discussion.

Transparency in the selection process

The introduction of rebuttals on the full proposal reviews increased transparency in the evaluation process and was appreciated by the applicants. In the survey, a large majority gave top score on the possibility for rebuttals on the full proposal

reviews. Those who submitted a full proposal were also generally more satisfied with the feedback to applicants than those who only submitted an outline proposal. The full proposal applicants were also significantly more satisfied with the clarity and completeness of the feedback to applicants than in the previous calls. There were still transparency concerns related to the review process. Those who only submitted an outline proposal were far less satisfied with the feedback to applicants and the transparency of funding decision than the full proposals applicants. Specific concerns were lacking information about the list of proposals, transparency on the bases for the assessments, and transparency in the home institution's dialogue the SNSF and the SERI.

Impartiality and the handling of conflicts of interest

The handing of conflicts of interest was done the same way in Call 5 as in previous calls, i.e. following the SNFS guidelines and routines for checking and declaring conflicts of interest. Still, questions regarding conflicts of interest created disturbance, dissatisfaction and complains, and there were divergent views on the definition and identification of conflicts of interest. The impartiality concerns included both the full proposal panels and the Research Council. Concerning the first, it was noted that it is particularly challenging to avoid any potential conflicts of interest in smaller fields and when proposals come from large teams with strong international networks. Moreover, potential conflicts of interest were extra sensitive in the full proposal panels as individual panel members had a crucial role for the outcome for the specific proposal they were assigned. Any previous collaboration, relations or disagreements could easily be perceived as favouring or disfavouring a proposal. Regarding the Research Council, the concerns were its impartiality in putting together and ranking the shortlist, while its members all have close links to Swiss research – even if those with links to the proposed NCCRs are excluded from the process.

Notably, the applicants' confidence in the impartiality of the NCCR evaluation panels is not significantly different from previous calls, and the full proposal applicants had more confidence in the process than those who only submitted an outline proposal: A majority of the full proposal applicants used the upper side of the scale when rating the impartiality of the panel, whereas a minority of those who only submitted an outline proposal did so. Hence, it seems that the impartiality concerns were limited to some proposals and not a general concern about the full proposal panels.

Time and efficiency

Overall, the NCCR selection process is well organised and goal achievement is high, in Call 5 as in previous calls. A general concern is still the long timeline – 22 months from the submission of outline proposals to the final selection in Call 5. This is considerably longer than for other large grant funding schemes. The applicant survey indicates that the applicants – as applicants in previous calls – were moderately satisfied with the time and efforts required in the application and selection process, and the efficiency of the process. In general, they appear less satisfied with the time spent on the final selection in the Ministry, than with the time spent on SNSF part of the process. Only a small minority of the applicants recommend cutting time for full proposal preparation as a means to shorten the NCCR selection process.

6.3   Recommendations for the next NCCR call

Even if involved actors and stakeholders are generally very satisfied with the NCCR scheme, they point to multiple challenges in the selection process:
1. The full proposal panels are extra sensitive to conflicts of interest
2. It is challenging to attract experts to do the individual/remote reviews of the proposals, and their review reports have varying quality and match of expertise with the proposals
3. Applicants call for increased transparency
4. The long timeline of the selection process
5. The NCCRs have limited outreach in the humanities and social sciences, as well as in less established research fields

The suggestions below to address these challenges build on input from the interviewees, as well as NIFU's general expertise on grant review processes. Furthermore, they opt to find a workable balance between different concerns in grant peer review, such as transparency versus anonymity, and efficiency versus thoroughness.

Addressing challenges 1 & 3
Reconsider the need for separate experts for each proposal in the panels assessing the full proposals

The NCCR full proposal panels have been composed of two assigned panel members on each proposal and no overlapping assignments between proposals. This gives a setting where the expertise and authority of a panel member is crucial for the outcome for the specific proposal assigned, and any potential conflict of interest becomes extra sensitive. Furthermore, science is collaborative and international, and it may be hard to draw a clear line for who has a conflict of interest and

who has not. To reduce such uncertainty and situations with conflicting perceptions of conflicts of interest, the SNSF should reconsider the need for separate experts for each proposal in the panels assessing the full proposals. An option may be to have panels in which all members assess all proposals in advance of panel meeting and write a review for at least two of them. Panel size may be kept and members selected more independently of the submitted proposals represent high-level and multi-disciplinary expertise in the general fields covered by each panel (e.g. medical and life sciences; social sciences and humanities; natural and technical sciences). In addition to reducing the importance of potential conflicts of interest, when panels are more generally composed they could be announced well in advance, making it possible to react to potential conflicts of interest, and so further reduce challenges with potential conflicts of interest, as well as increasing transparency. Increased transparency about panel composition would need to be considered in terms of increased risk for panel members being influenced by applicants during the process, and e.g. additional conflicts of interest regulations for contact between panel members and applicants in advance of the panel meeting. Moreover, there would be more multidisciplinary expertise on each proposal, the external reviews would have a more defined role, and it would be easier to replace panel members in case of a conflict of interest detected late in the process.

Addressing challenges 2 & 3
Allowing more input from applicants in the selection of reviewer expertise

In Call 5 it took more efforts to recruit experts to review the proposals, and the wanted number of individual reviews per proposal was not always obtained. Several applicants, especially at the outline proposal stage, complained about wrong or narrow expertise and lack of thoroughness in review, as well as difficulties in covering the full scholarly breadth of multidisciplinary proposals. One way to increase the quality of reviews and match of expertise with the proposals may be to allow more input from applicants in the selection of reviewer expertise. Even if there are good reasons to restrict the use of applicant nominated reviewers[28], applicants should be encouraged to give detailed information on the kind of expertise they think necessary to review their proposals, and be allowed to give examples of experts (without a conflict of interest) who hold this expertise (and as in Call 5, also indicate who for some reason should not review the proposal). Even if not necessarily using the suggested experts, input from applicants can make it easier to find the experts who match well the different fields and competences involved in the proposals. It should be noted that applicant input is no guarantee for enhancing reviewer competence and increasing trust in the evaluation process, but

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[28] Regarding potential positive bias of applicant nominated external reviewers (Severin 2020), such biases may be restrained by informing the panels about the origin of reviewer nominations.

is a better option – than not having such input – in terms of informing the review process and ensuring the inclusion of the perspectives and concerns of the applicants and reducing the chance element in peer review (i.e. the 'lottery of the reviewer draw', Cole et al. 1981).

Addressing challenges 3 & 4
Reconsider the need for ranking the shortlist of full proposals

The ranking decisions in the Research Council were demanding and time-consuming, and in retrospect the ranked list appeared redundant as the ranking was not conclusive. Moreover, there is a transparency challenge in producing a non-public ranked shortlist; it limits transparency and sparks curiosity. Hence, producing a non-ranked list – which may be public information – the SNSF may both shorten the timeline of the selection process and avoid the particular transparency concerns for a ranked shortlist that is not conclusive, only indicative. Furthermore, an unranked shortlist could reduce the concerns regarding the impartiality of the Research Council members in the NCCR selection process. Additionally, the need for two rounds of meetings with the home institutions about the shortlist – separate meetings with both the SNSF and SERI – may be reconsidered.

More radical changes to shorten the timeline could include e.g. skipping the outline proposal phase and instead have an extra stage for screening of the full proposals before the applicant interviews, but we perceive omitting the ranking of the shortlist as the one kind of cut in the SNSF's procedures that can be implemented with least implications for the thoroughness of the evaluation process.

Addressing challenge 5
Consider adjustments in the NCCR scheme to increase its outreach and flexibility

The NCCR scheme has limited outreach in the humanities and social sciences, as well as in newly established research fields. It is not perceived as designed for smaller consortia or for groups who cannot set up a 12-year research plan. Several informants argued for a reform of the NCCR scheme. This included to make the scheme more flexible, and fit it better also to new research topics, the humanities and social sciences, including moderate sized collaborations, and possibly smaller/shorter grants and more frequent calls for proposals. Future calls may be clearer regarding the possibilities of smaller consortia and shorter timelines for NCCRs, and ensure potential applicants that proposals for smaller NCCRs are welcome and will have similar chances of success as larger ones. Still, the proposal requirements and long selection process of the NCCR scheme may disincentive proposals for smaller NCCRs. Hence, separate and more fast-track and frequent calls for smaller NCCRs should also be considered.
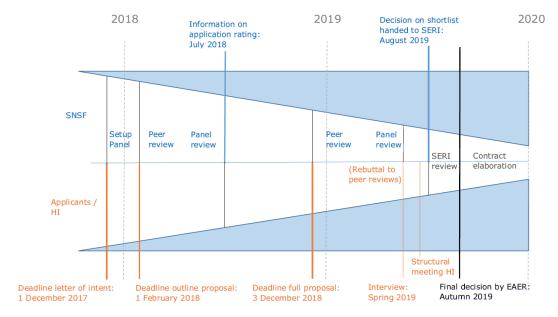
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Appendix 1   Overview of the Call 5 NCCR selection process

Source: SNSF, National Centres of Competence in Research NCCR Extended call document 2017.

Appendix 2   Tables

Table A 1 NCCR's attractiveness compared to applicants' other relevant national funding sources. Replies by NCCR proposal stage. Per cent.

	The NCCR scheme is				N	PP difference Better-Poorer[1]	
	Better	About the same	Poorer	Cannot say/NA		Call 5	C3&4*
Impact on the prestige and career of the awarded investigators/researchers							
Only outline proposal	43.5 %	39.1 %	4.3 %	13.0 %	23	39.2	65.4
Full proposal	57.1 %	35.7 %	7.1 %	0.0 %	14	50.0	38.7
Total	48.6 %	37.8 %	5.4 %	8.1 %	37	43.2	50.9
Amount of funding							
Only outline proposal	69.6 %	13.0 %	8.7 %	8.7 %	23	60.9	53.9
Full proposal	78.6 %	21.4 %	0.0 %	0.0 %	14	78.6	61.3
Total	73.0 %	16.2 %	5.4 %	5.4 %	37	67.6	57.8
Flexibility of use of funds							
Only outline proposal	21.7 %	30.4 %	4.3 %	43.5 %	23	17.4	20.0
Full proposal	57.1 %	21.4 %	0.0 %	21.4 %	14	57.1	43.3
Total	35.1 %	27.0 %	2.7 %	35.1 %	37	32.4	32.7

Source: NIFU survey to applicants to NCCR call 5. Question: When comparing the NCCR scheme to your other relevant national funding sources, is the NCCR poorer, about the same or better, concerning [prestige/funding/flexibility].

[1] Last column shows comparable figures (percentage points more 'better' than 'poorer') from the survey to applicants to NCCR calls 3 and 4. See tables 2.14 and 2.15 in 2016 report the distributions of replies to these questions from NCCR calls 3 and 4 applicants.

25 respondents entered information on which other funding source they compared with. 23 of these compared with other SNSF funding, 2 with funding schemes in other countries.

Table A 2 NCCR's attractiveness compared to the ERC. Replies by NCCR proposal stage. Per cent.

	The NCCR scheme is				N	PP difference Better-Poorer[1]	
	Better	About the same	Poorer	Cannot say/NA		Call 5	Call 3&4*
Impact on the prestige and career of the awarded investigators/researchers							
Only outline proposal	13.0 %	39.1 %	26.1 %	21.7 %	23	-13.1	-15.4
Full proposal	0.0 %	42.9 %	42.9 %	14.3 %	14	-42.9	-32.3
Total	8.1 %	40.5 %	32.4 %	18.9 %	37	-24.3	-24.6
Amount of funding							
Only outline proposal	30.4 %	34.8 %	13.0 %	21.7 %	23	17.4	0.0
Full proposal	35.7 %	35.7 %	21.4 %	7.1 %	14	14.3	-19.3
Total	32.4 %	35.1 %	*16.2 %	16.2 %	37	16.2	-10.5
Flexibility of use of funds							
Only outline proposal	8.7 %	39.1 %	8.7 %	43.5 %	23	0.0	7.7
Full proposal	28.6 %	21.4 %	21.4 %	28.6 %	14	7.2	19.3
Total	16.2 %	32.4 %	13.5 %	37.8 %	37	2.7	14.1

Source: NIFU survey to applicants to NCCR call 5. Question: When comparing the NCCR scheme to the selection process of the European Research Council, is the NCCR poorer, about the same or better, concerning [prestige/funding/flexibility].

[1] Last column shows comparable figures (percentage points more 'better' than 'poorer') from the survey to applicants to NCCR calls 3 and 4. See tables 2.14 and 2.15 in 2016 report the distributions of replies to these questions from NCCR calls 3 and 4 applicants.

*Difference between the calls is statistically significant: fewer find NCCR poorer in Call 5 survey than in the combined call 3 and 4 survey (Langfeldt and Borlaug 2012, Table 2.15).

Table A 3 Impartiality and confidence of the NCCR scheme compared to applicants' other[1] relevant national funding sources. Replies by NCCR proposal stage. Per cent.

	The NCCR scheme is				N	PP difference Better-Poorer[2]	
	Better	About the same	Poorer	Cannot say/NA		Call 5	Call 3&4
The handling of intellectual property and confidential information							
Only pre-proposal	0.0 %	47.8 %	0.0 %	52.2 %	23	0.0	0.0
Full proposal	14.3 %	64.3 %	7.1 %	14.3 %	14	7.2	0.0
Total	5.4 %	54.1 %	2.7 %	37.8 %	37	2.7	0.0
The impartiality and ethical standard of the selection process							
Only pre-proposal	4.3 %	39.1 %	34.8 %	21.7 %	23	-30.5	-23.1
Full proposal	14.3 %	57.1 %	28.6 %	0.0 %	14	-14.3	-22.6
Total	*8.1 %	45.9 %	32.4 %	13.5 %	37	-24.3	-22.8
Your general confidence in the selection process							
Only pre-proposal	0.0 %	30.4 %	56.5 %	13.0 %	23	-56.5	-73.1
Full proposal	35.7 %	35.7 %	28.6 %	0.0 %	14	7.1	-45.2
Total	*13.5 %	32.4 %	45.9 %	8.1 %	37	-32.4	-57.8

Source: NIFU survey to applicants to NCCR call 5. Question: When comparing the NCCR scheme to your other relevant national funding sources, is the NCCR poorer, about the same or better, concerning [IP handling/impartiality/confidence].

[1] 25 respondents entered information on which other funding source they compared with. 23 of these compared with other SNSF funding, 2 with funding schemes in other countries.

[2] Last column shows figures from the survey to applicants to NCCR calls 3 and 4. See Table 4.5 in Langfeldt and Borlaug 2016 for the distributions of replies to these questions from NCCR Call 3 and Call 4 applicants.

* Difference between the calls is statistically significant (more find NCCR general confidence better in Call 5 compared to other schemes in Call 5 than in Call3&4).

Table A 4 Impartiality and confidence of the NCCR scheme compared to the ERC. Replies by NCCR proposal stage. Per cent.

	The NCCR scheme is				N	PP difference Better-Poorer	
	Better	About the same	Poorer	Cannot say/NA		**Call 5**	**Call 3&4**
The handling of intellectual property and confidential information							
Only pre-proposal	8.7 %	39.1 %	0.0 %	52.2 %	23	8.7	8.0
Full proposal	7.1 %	42.9 %	7.1 %	42.9 %	14	0.0	0.0
Total	8.1 %	40.5 %	2.7 %	48.6 %	37	5.4	3.6
The impartiality and ethical standard of the selection process							
Only pre-proposal	8.7 %	43.5 %	17.4 %	30.4 %	23	-8.7	-15.4
Full proposal	21.4 %	35.7 %	21.4 %	21.4 %	14	0.0	-9.6
Total	13.5 %	40.5 %	18.9 %	27.0 %	37	-5.4	-12.3
Your general confidence in the selection process							
Only pre-proposal	4.3 %	30.4 %	39.1 %	26.1 %	23	-34.8	-19.3
Full proposal	35.7 %	7.1 %	50.0 %	7.1 %	14	-14.3	0.0
Total	16.2 %	21.6 %	*43.2 %	18.9 %	37	-27.0	-8.8

Source: NIFU survey to applicants to NCCR call 5. Question: When comparing the NCCR scheme to the selection process of the European Research Council, is the NCCR poorer, about the same or better, concerning [IP handling/impartiality/confidence].

[2] Last column shows figures from the survey to applicants to NCCR calls 3 and 4. See Table 4.6 in Langfeldt and Borlaug 2016 for the distributions of replies to these questions from NCCR Call 3 and Call 4 applicants.

* Difference between the calls is statistically significant (more find NCCR general confidence poorer compared to ERC in Call 5 than in Call3&4).

Appendix 3 Overview interviewees

SNSF The National Research Council (present and former members)

- Prof. Friedrich Eisenbrand
- Prof. Katharina M. Fromm
- Prof. Stuart Lane
- Prof. Katharina Michaelowa
- Prof. Nicolas Rodondi

SNSF Office

- Stefan Bachmann
- Anaëlle Foucault-Dumas
- Marc Zbinden

International experts/NCCR panel members Call 5

- Professor Sabine Kropp, member Social Sciences & Humanities Panel
- Professor Michel Loreau, member Biology & Environment Panel
- Professor Matteo Maffei, member Natural Sciences & Engineering Panel
- Professor Suzanne R. Pfeffer, chair Outline proposal panel and three full proposal panels
- Professor Peter Sorger, member Medical Sciences Panel and Outline proposal panel
- Professor Ashok Venkitaraman, chair Natural Sciences & Engineering Panel and member of Outline proposal panel

The State Secretariat for Education, Research and Innovation (SERI)

- Nicole Schaad
- Claudine Dolt

University leadership

- Prof. Detlef Günther
- Prof. Christian Leumann
- Prof. Daniel Candinas

- Prof. Brigitte Galliot
- Prof. Torsten Schwede

Appendix 4   Questionnaire to NCCR applicants

The NCCR selection process: Survey to applicants

The purpose of this survey is to gain insight into the applicants' views and experiences with the NCCR application and selection processes. The survey goes to all who have applied (as main applicant/designated NCCR Director) in the last NCCR call for proposals (Call 5, announced in 2017). The experiences of both successful and unsuccessful applicants are of great value to the improvements of the NCCR selection process and we kindly ask you to participate.

Your experiences of the NCCR application and selection process

1. Considering your NCCR application, to what extent did you find the following issues/processes satisfactory?

	5 = To a great extent	4	3	2	1 = not at all	Cannot say
The clarity of the terms and requirements for proposals (call documents)	○	○	○	○	○	○
The support during the application process (from the SNSF)	○	○	○	○	○	○
The transparency regarding funding decisions	○	○	○	○	○	○
The overall cost efficiency of the application and selection process	○	○	○	○	○	○

Outline proposal stage:	5 = To a great extent	4	3	2	1= not at all	Cannot say
The competence of the experts reviewing the outline proposals	○	○	○	○	○	○
The clarity and completeness of the feedback to applicants regarding the outline proposals	○	○	○	○	○	○
The time and efforts needed to prepare an outline proposal	○	○	○	○	○	○
The time from submitting the outline proposal to the result of the outline proposal round was announced (5.5 months)	○	○	○	○	○	○

Full proposal stage (leave open if you did not submit a full proposal):	5 = To a great extent	4	3	2	1= not at all	Cannot say
The competence of the experts reviewing the full proposals	○	○	○	○	○	○
The clarity and completeness of the feedback to applicants regarding the full proposals	○	○	○	○	○	○
The possibilities to respond to the review of my full proposal (rebuttal)	○	○	○	○	○	○
The time and efforts needed to prepare a full proposal	○	○	○	○	○	○
The time from submitting the full proposal to the short-list was announced (6.5 months)	○	○	○	○	○	○
The time from short-list was announced to the final decision by SERI (6 months)	○	○	○	○	○	○

2. Time for preparing an NCCR full proposal: How much time would you like to have for preparing the full proposal (after receiving the feedback letter on the outline proposal)?

○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 months ○ don't know

3. Below, please enter your comments and experiences concerning the NCCR selection process (e.g. positive or negative experiences regarding the format of feedback to applicants or rebuttals), and what you would like to be kept or changed for the next NCCR selection process.

[ ]

4. To what degree do you think the evaluation panel that assessed your outline proposal:

	5 = To a great extent	4	3	2	1 = not at all	Cannot say
Was able to assess all the fields of research involved in the application?	○	○	○	○	○	○
Provided an impartial and unbiased assessment of your application?	○	○	○	○	○	○
Provided a thorough assessment of your application?	○	○	○	○	○	○

5. *To what degree do you think the panel that assessed your <u>full proposal:</u>

	5 = To a great extent	4	3	2	1 = not at all	Cannot say
Was able to understand and respond to the presentation of your proposal (during your meeting with the selection panel)?	○	○	○	○	○	○
Was able to assess all the fields of research involved in the application?	○	○	○	○	○	○
Provided an impartial and unbiased assessment of your application?	○	○	○	○	○	○
Provided a thorough assessment of your application?	○	○	○	○	○	○

*Leave open if you did not submit a full proposal.

6. Below you may enter comments and experiences concerning the assessment of your NCCR proposal (e.g. positive or negative experiences regarding how the review is organised), and what you would like to be kept or changed for the next NCCR review process.

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7. In your opinion, to what degree does the NCCR scheme provide the appropriate policies and review processes to:

	5 = To a great extent	4	3	2	1 = not at all	Cannot say
Support the most promising and important research?	○	○	○	○	○	○
Facilitate interdisciplinary research?	○	○	○	○	○	○
Support high-risk research?	○	○	○	○	○	○
Support well founded and solid research?	○	○	○	○	○	○
Support original and ground-breaking research?	○	○	○	○	○	○
Enable Switzerland to become a world leader in a particular research area?	○	○	○	○	○	○
Deliver transformational change in the Swiss Higher Education landscape?	○	○	○	○	○	○

8. When comparing the NCCR scheme <u>to your other relevant national funding sources</u>, is the NCCR poorer, about the same or better, concerning:

	Better	About the same	Poorer	Cannot say/NA
Reviewer competence	○	○	○	○
The transparency of the selection process	○	○	○	○
The handling of intellectual property and confidential information	○	○	○	○
The impartiality and ethical standard of the selection process	○	○	○	○
Your general confidence in the selection process	○	○	○	○
Time and efficiency of the application and selection process	○	○	○	○
Impact on the prestige and career of the awarded investigators/researchers	○	○	○	○
Amount of funding	○	○	○	○
Flexibility of use of funds	○	○	○	○

Which other national funding source/scheme is your main reference? (please specify)

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9. When comparing the NCCR scheme to the selection process of the European Research Council, is the NCCR poorer, about the same or better, concerning:

	Better	About the same	Poorer	Cannot say/NA
Reviewer competence	○	○	○	○
The transparency of the selection process	○	○	○	○
The handling of intellectual property and confidential information	○	○	○	○
The impartiality and ethical standard of the selection process	○	○	○	○
Your general confidence in the selection process	○	○	○	○
Time and efficiency of the application and selection process	○	○	○	○
Impact on the prestige and career of the awarded investigators/researchers	○	○	○	○
Amount of funding	○	○	○	○
Flexibility of use of funds	○	○	○	○

Changes in the selection process

10. If you have experiences from previous NCCR selection processes (as an applicant or/and as involved in the selection process in your organisation or in the SNSF), please explain how you found the last selection process compared to previous process(es), e.g. the same, better or poorer concerning transparency, competence and other issues you find important (leave open if no previous experience):

The pre-selection processes at your home institution

11. How would you describe the pre-selection of NCCR outline proposals at your home institution?

○ No pre-selection: All formally eligible applicants were allowed to submit an outline proposal
○ Informal pre-selection process: Support/not support of proposals were discussed and decided in informal meetings/settings
○ Formal pre-selection process: There was a defined procedure for deciding which proposals to support
○ Other:

12. How would you describe the pre-selection of NCCR full proposals at your home institution?

○ No pre-selection, all formally eligible applicants were allowed to submit a full proposal
○ Informal pre-selection process: Support/not support of proposals were discussed and decided in informal meetings/settings
○ Formal pre-selection process: There was a defined procedure for deciding which proposals to support
○ Other:

13. My home institution supported my NCCR (outline and/or full) proposal by:

(multiple replies possible)

☐ Dedicating funding/time to develop the application
☐ Contributing with administrative support
☐ Organising internal review(s) of the proposal
☐ Writing a highly supportive letter to the SNSF
☐ Other:

Open comments/Free text

14. If you have further comments regarding the NCCR selection process, please use the space below. Of particular interest are your ideas for improvement of future processes, e.g. your experiences from similar funding schemes in other countries and what the SNSF may learn from their selection processes.

Save   Finish