COMITE NATIONAL DE LA RECHERCHE SCIENTIFIQUE

SECTION 10
Fluids and reactive media: transports, transfers and transformation processes

General comments on the profession of researcher and its assessment

The activities of researchers are varied and the quality of their investment can take different forms. During their evaluation, the members of the section consider **in the first place the scientific contributions**, while also taking into account the involvement and the integration of researchers in their professional environment. The evaluation is based on the nature, quality, originality, impact and scope of all these activities, taking into account their context (scientific, material, human) and the opportunities available to each researcher. The assessment also **takes into account the stage of the career and the specific career path, the conditions in which the activities take place** and **the elements the researcher wishes to present**. For example, the researcher could explain the opportunities and/or abilities (or even interest) in participating or not in certain types of activities, during the period under consideration.

Recommendations for preparation of the dossiers

The section evaluates the candidates in competition or for promotion using the documents provided by the researchers. These documents must be specific and prepared according to the nature of each evaluation ("wave/mid-wave", promotion, recruitment).

The common and specific criteria given below are open-ended, not exclusive, and not presented in order of importance. Examples of elements, possibly interesting for the evaluation, are given in the *notes* as an indication and in a non-exhaustive manner.

There are many ways to produce high-quality work. It is therefore recommended, both for scientific contributions and for contributions important to the community in general, to present in a clear and concise manner the main thrusts and highlights of the activities in their context, how they fit in the career path and any significant developments.

For each activity or responsibility, a concise and explicit description of the way in which it is carried out is expected, including factual data (volume and complexity), self-assessment data and any information that the candidate wishes to bring to the attention of the assessors.

1. Periodic evaluation of researchers

The criteria listed below will be used to evaluate the contributions produced during the evaluation period, at 30 months ("mid-wave") and 60 months ("wave"). For the mid-wave evaluation, the presentation of the scientific project is not required. The report can also provide an opportunity to explain any difficulties encountered (for example a drop in scientific output as a result of risk-taking).

Common criteria

- Quality of the **activity** and (for 60 months evaluation) of the scientific **project**: approach, originality and risk-taking, evolution. [1]
- Quality of the scientific **outputs** (publications in peer-reviewed journals, patents, book chapters, monographs, software, etc.), with details of the researcher's role.[2]
- Integration within the laboratory and contribution to the development of the laboratory project.[3]
- Quality of **dissemination** activities towards the scientific community (providing available data or software, participation in well-known conferences, workshops, or seminars, etc.).[4]
- Societal and economical /technological valorization and contracts, links with socio-economic players[5] .
- Quality of **collaborations** (internal, local, national, international).[6]
- Quality of **supervision** (students, non-permanent staff, project teams, permanent staff, etc.).[7]
- Teaching, training in/through research, transmission of knowledge, organisation of conferences or schools, dissemination of ethical practices, scientific culture and other communication initiatives aimed at civil society and the general public.[8]
- Involvement in **tasks of collective interest**[9] including participation in the activities of its scientific community.[10]

Specific criteria according to the grade

Grade CRCN
Common criteria listed above.

Grade CRHC
In addition to the common criteria listed above, the following criteria are taken into account:
- Recognised **expertise** in a specific field.[11]
- Involvement and/or **responsibility in collective projects**[12] **.**
- Investment in the **transmission** (for the laboratory via participation in the supervision of researchers and/or students, for the community) **of scientific or technical knowledge** derived from expertise and the ability to develop it, if necessary.[13]

Grade DR2
For DRs, involvement in the professional environment is expected, with scientific contributions taking precedence. In addition to the common criteria listed above, the following criteria are taken into account:
- Recognised **expertise** in a field. [11]
- Recognition (national or international), personal or collective.[14]

- Ability **to conceive and lead projects**.[15]
- Investment in the **transmission** (for the laboratory, for the community, etc.) **of scientific or technical knowledge** based on expertise and the ability to develop it, if necessary.[13]
- Ability to support young researchers.
- Quality of **scientific leadership.**
- Involvement in responsibilities of general interest.[16]

Grade DR1
In addition to the common criteria and the criteria specific to the grade of DR2 listed above, the following criteria are taken into account:
- Ability to develop a **forward-looking, creative and innovative vision of their field,** contribution to the development of the laboratory project.
- Ability to foster **high-quality interactions with the environment** and to define and implement a **strategy useful to** the working environment.[17]

Grades DRCE
In addition to the common criteria and the criteria specific to the DR2 and DR1 grades listed above, the following criteria are taken into account:
- Breakthrough, major contribution, exceptional **scope** in a scientific field.[18]
- Exceptional personal or collective **recognition.**[19]
- Leading role in **structuring research**.[20]

2. Grade advancement for researchers (promotions)

The evaluation criteria specific to the researcher's grade will be used to assess contributions since the last promotion.
Potential or proven ability to meet a substantial part of the evaluation criteria for the grade to which the researcher is applying will also be taken into account.
As explained above, you do not have to meet all of these criteria.
The dynamics of the career path will be taken into account in the assessment.

3. Recruitment of researchers

General comments on recruitment
The criteria below will be used to assess all scientific contributions prior to the recruitment competition and the quality of the proposed project. As explained above, it is not necessary to meet all of these criteria.

Specific criteria according to grade

CRCN recruitment
The key point is the assessment of the candidates' potential to become excellent CNRS researchers. This assessment will take into account the candidate's scientific career (in relation to the length of time they have been working) and the quality of their project.
- Quality and diversity (thematic, geographical) of **training** and research experience.
- The candidates' personal contributions to the results obtained.
- Quality of the short- and medium-term **research project**, in line with the research context envisaged and the themes of section 10, and consistent with the training curriculum.
- Ability to carry out a personal research project.

- Potential or proven ability to meet some of the evaluation criteria common to all researchers.

DR2 recruitment
The essential point of the evaluation is to identify the originality and impact of the scientist on his or her field and environment. This assessment will be made in relation to the context (scientific, material, human) and the opportunities available to him or her. As explained above, it is not a question of meeting all of these criteria, but rather of considering the activity as a whole, in its context and overall dynamics.
- Potential or proven ability to meet a substantial part of the DR2 evaluation criteria.[21]
- Quality of the proposed research **project.**[22]
- Development of an original **scientific path**.[23]

DR1 recruitment
- Potential or proven ability to meet a large proportion of the DR1 assessment criteria.

4. Application for or renewal of emeritus status

The following criteria will be used:
- Quality of scientific **activity**.
- Integration of the project and scientific activity into the **collective strategy of** the laboratory and host team.
- Investment to **enable the laboratory and host team to benefit from** the applicant's network, new collaborations and the transmission of knowledge and skills.

Examples of elements that could be looked for in the report. They are indicative and non-exhaustive :

[1] *Approach, originality and risk-taking (relevance to the state of the art, local, national and/or international positioning), progress and development of the project with capacity for training where appropriate, thematic mobility and/or interdisciplinary scope.*

[2] *Role of the researcher in the various contributions, impact of the most significant contributions in relation to the state of the art, efforts made to promote an open science approach.*

[3] *Involvement of the researcher in the team's and laboratory's research dynamics, positioning of the researcher's research topic within the laboratory's themes.*

[4] *Type of availability (open archives, databases, etc.), type of presentations (oral communications, posters, etc.), ability to encourage the involvement of members of the scientific community, importance of the conference in the field of expertise for the most significant presentations.*

[5] *Drafting of projects (selected for funding or, in the event of funding difficulties, nonetheless leading to collaborations that will enrich the scientific project), ability to look for appropriate funding, role and position in partnerships, description of actions to exploit research results if applicable.*

[6] *Relevance of the collaborations to the project, management of the collaboration over time (formalisation, co-supervision, joint visits, etc.), quality of the results of the collaborations.*

[7] *Description of its functions and the way in which they are carried out, efforts made to promote the progress of those supervised and to guarantee respect for individuals and scientific integrity, efforts made to improve their own practices (recruitment methods, supervision, monitoring, etc.), implication in the future of non-permanent and permanent staff.*

[8] *Nature, impact and volume of activities.*

[9] *Description of activities (participation, expertise, leadership, management, etc.) and how they are carried out, volume and level of complexity of the most important activities, ability to train for these activities, impact of their actions.*

[10] *In the broadest sense, i.e. the community within the host organisation, the local, national and international community, professional networks, working groups, committees, learned societies and large (infra)structures.*

[11] *Specialist in the development of innovative experimental systems, specialising in advanced characterisation, elaborate simulations or the interpretation of complex data. Expertise that has been published in recognised journals or presented at conferences, for example.*

[12] *Research projects, structuring of laboratory activities, national or international collaborations.*

[13] *Description of the actions and the way in which knowledge is passed on, and the changes brought about.*

[14] *Impact of the most significant contributions, distinctions or invitations obtained or honoured on a personal basis or by collaborators or supervised persons (conferences, articles, book chapters, seminars, etc.), organisation of or participation in the scientific committee of recognised scientific events in his/her field, involvement in a national or international learned society, editorial activity (books, recognised journals in his/her field, etc.), building and/or leading an international network of collaborations.*

[15] *Funded projects, establishment of collaborative networks (sustainability, impact of results), industrial contracts.*

[16] *Examples: leading a team, administrative responsibilities, active participation in evaluation or research management committees, leading group projects, etc. Description of role in the context, scope and impact of action, level of responsibility, recognition of collective work, ability to promote the progress of supervised staff.*

[17] *Description of role in the context, scope and impact of action, ability to relate activity to the needs of the organisation and to mobilise the instruments available, management functions, achievement of good governance (i.e. ability to manage interdependencies in a way that is useful for the organisation as a whole: proper functioning of internal bodies, ability to provide or operate means of (self-) evaluation).*

[18] *Ability to create a school of thought, vision and breakthrough scientific trajectory.*

[19] *Prestigious prizes, long-term invitations or plenary lectures at major conferences in the field, won or honoured in a personal capacity, by employees or supervised staff.*

[20] *Outstanding collective responsibilities, description of role and impact (on national and international steering bodies, councils, steering committees, structuring participation in the activities of learned societies, etc).*

[21] *An HDR (or similar qualification) can in particular attest the capacity of the candidate to supervise junior researchers.*
[22] *Ability to explain the importance of the chosen challenges (scientific, societal) and how they relate to the project.*
[23] *Strategic vision for their field and originality in the national and international context.*