Review of Processes Used to Manage the Rating of Individual Researchers

Report

Submitted To Steering Committee

by M. Madikizela
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Executive Summary

The Project
In 2004, an institutional review of the NRF was completed to provide, inter alia, a retrospective view on the performance of the NRF during the first five years of its existence. Furthermore, the review was intended to assess the outcomes and impact of its activities. Based on its findings the review panel made recommendations regarding the strategic direction and operational execution of the NRF’s missions.

One of the recommendations, that emanated from the review is that an in depth review of the rating process should be undertaken. In response to this recommendation, the Higher Education South Africa (HESA) in partnership with the South African National Research Foundation (NRF) commissioned the present study.

The Review of the Processes used to manage the NRF rating system
From the Terms of Reference, the purpose of this project is to conduct an in-depth assessment of the processes that are used to manage the rating system during the past five years (2002-2006). The overall aim is to assess whether these processes are working in the most effective and efficient way possible within available resources.

The specific objectives are to conduct a critical analysis of existing processes regarding their efficiency, fitness for purpose, effectiveness, cost-effectiveness and other relevant variables. The strengths and weaknesses of the processes will be examined.

Due to time constraints and to concentrate the effort, not all processes were assessed. The criteria that were used to select priority processes are described in Section 2.2.
**Findings and conclusions**
This section of the report focuses on the comments heard during the interviews with NRF staff, designated authorities of institutions, specialist panel members and chairmen of assessment panels. The common themes that emerged are highlighted below.

**Suggestions for improvement that were made by the respondents are included under the findings sections.**

**Core processes**

**Screening of Applications**

The screening of the applications by the institutions is done effectively, given the fact that on average only 7% of the submitted applications are returned to the institutions without further processing. The main reason the applications are returned is that they are “premature”; in most cases these are recently qualified researchers who do not have an adequate track record.

Most institutions that were contacted have put in place committees which assess the quality of candidates’ submissions. Furthermore, guidance on constructing well motivated submissions is made available in some institutions. Although this has become an administrative burden to the institutions, its importance is appreciated. Several institutions candidly admitted that their internal administrative systems and screening processes are inadequate. To address their shortcomings, they intend to learn best practices from other institutions.

The workshops that are conducted by the NRF are very important for creating awareness and knowledge sharing. This will assist the institutions to understand what is expected in the rating system.
**Appointment of reviewers**
The appointment of suitable reviewers is vital to the proper functioning of the rating process and is by far the most challenging. Although it is working reasonably well, there is room for improvement. Panels employ different tactics and methods to identify peer reviewers; however they experience a high level of frustration. It is a time consuming process and its success depends on the resourcefulness of the particular panel. In some cases they concede they do not know enough about the candidate’s work to identify the correct peers.

Some of the constraints that are encountered by specialist committees are:

- Reviewer fatigue
- Finding reviewers for obscure fields of research where the pool is limited.
- Identifying reviewers for researchers who work in multidisciplinary fields.
- It is also difficult to select reviewers for researchers whose research has a local content.
- Identifying reviewers for researchers who are still at an early stage of their careers, because their research work is unknown.
- In some cases, the lack of commitment from the specialist committees can cause delays.

Despite these problems, a sufficient number of reviewers can be obtained.

**Rating of candidates**

**(a) Assessment of Reports by Specialist Committees**

Before using the peer reports for rating, the Specialist Committees rate them to eliminate those that are of substandard quality. The weakness is that the quality of the reports varies considerably with 67% (2006) and 60% (2005) of the reports rated 1 (highest rank) and 2 by the panels. Reports that are rated 1, 2 and 2/3 are considered for further use. The main sources of problems are the following

- Some reviewers seem not to understand what is required from them—despite the good guidelines that are provided.
- Reviewers not using the “right” words to describe the standing of the candidate to assist the panels in placing the applicant
- One of the problems is that the reviewers do not know the candidate’s work

(b) Rating of Applicants by Assessment Panels

The rating of the applicants by the specialist committee in the presence of the assessor shows that although they assign the rating independently, in most cases they agree. For example, a recent analysis in 2006 shows that this was the case in 95% of all applicants in natural sciences and 96% of all social scientists and humanities in one subcategory.

Feedback to Applicants

The quality of the feedback that is communicated to the applicants is a serious problem area. For example, panels select extracts from the reviewers’ reports which sometimes appears to be contradictory. The main source of this problem is that the selection of the feedback is done at the end of the assessment meetings, and insufficient time is invested. It must be noted that the quality of this feedback differs from panel to panel and some get it right. To their credit, the panels are aware of this weakness and are trying to address it.

The institutions also raised similar concerns about the quality of the feedback. The feedback is sometimes out of context. In some cases it is very limited and not useful. The feedback is regarded as important to the candidate’s career development. Despite these shortcomings, some institutions have observed an improvement in the quality of the feedback.

Support Processes

Support from Evaluation Centre

In general, members of the panels and institutions are satisfied with the administrative support that is offered by the staff of the Evaluation Centre. This unit is regarded as very efficient and responds to requests and queries. The experience that has been
accumulated by the staff members in the centre is a valuable source of guidance and advice which is highly appreciated. The information on the rating system that is posted on the NRF website is very comprehensive.

Given the nature of the rating system and long turnaround times such as receiving reports from reviewers, the overall cycle time of about 8.4 months is acceptable. The estimated costs for the centre were R2.28m in 2006.

Some of the constraints that the centre experiences are:

- Difficulty of contacting reviewers - especially internationally.
- Delays in receiving reports from reviewers on time for the panel meeting.
- NRF online system not entirely suitable for rating management.

**Promotion of the Rating Process**

The NRF conducts visits to institutions to inform and educate them about the rating process. Although the feedback from the people who attend is very positive, the attendance is low. One of the impressions that came out is that there is a significant lack of in depth understanding of how the process works within the academic community.

**NRF online**

A common source of frustration that was mentioned continuously is the NRF online system. This problem is currently being addressed and suitable IT system is being investigated.

**Cost of the Rating process**

Although it is possible to estimate the cost of the rating process, one would have to take into consideration the costs incurred by the NRF, the institutions, and the panelist and reviewers. It was therefore not possible to make any meaningful findings in this regard. The analysis of the rating costs were therefore limited to assessing the rating costs that are incurred by the Evaluation Centre, which amounted to approximately R2.28m in 2006.
Fitness for Purpose of the rating system
Although opinions are divergent, some respondents strongly feel that the rating process is more suitable for the natural sciences and its use in the social sciences, such as performing arts, is problematic. The use of the rating process is also limited regarding researchers who work in multidisciplinary fields. This feedback was mentioned on various occasions.

Concluding Remarks
In conclusion, despite the challenges that are mentioned, the rating process is overall very rigorous and a fair process. The rating system is based on the well accepted principle of peer review. There are built in checks and balances that ensure quality and consistency across various disciplines.

The evolution of processes also follows the S-curve model: which consists of early phase, middle phase, mature phase and declining phase. The rating system can be regarded as a mature process that has been in use for long enough and most of the major initial faults have been addressed or reduced through continuous improvement. At the mature and declining phases, in most cases opportunities for improvement are few and the same can be said about the rating system.

It is impossible to have a process that does not have weaknesses, and the weaknesses that are mentioned are not major flaws but are opportunities for incremental improvement.

Recommendations
The NRF/HESA steering committee requested that recommendations should not be included in this report.
REVIEW OF THE PROCESSES USED TO MANAGE THE RATING PROCESS OF THE NRF

1 INTRODUCTION

The NRF’s vision is to make South Africa a globally competitive country through the promotion and support of research. Furthermore, the national system of innovation should produce highly qualified scholars, scientists and engineers.

To achieve this vision and safeguard research excellence, the NRF operates a rating system for individual researchers. This is intended to be a benchmarking system, based on peer review of the recent research outputs of each candidate’s work.

The NRF argues that the evaluation and rating process is intended to achieve the following goals:

- Provide independent and objective information about the quality of research and SA research capacity in various fields.
- Reinforce the importance of internationally competitive research and stimulate competition between researchers.
- Is used by universities to position themselves as research intensive institutions and for promotion and recruitment of staff.
- To invest financial resources in people with a track record of doing good research.

The rating process is therefore a mechanism that is used as a strategic tool to strengthen the South African research base. The rating system promotes a culture of internationally competitive research in South Africa.

Originally, it was introduced for the natural sciences and engineering disciplines in 1984.

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1 The NRF Evaluation & Rating System, Facts and Figures, 2005
After the creation of the NRF in 1999, the concept of evaluating and rating individuals in all disciplines was endorsed. In 2001, a new system was created to cater for research and scholarship in all the fields of the humanities, social and natural sciences, engineering and technology.

Because of the importance of the system to South African institutions and to the researchers who participate in the rating processes, the NRF strives to achieve a credible, reliable and valid system. This will ensure that the system enjoys both local and international support. It is therefore imperative that the processes that are used for rating support the overall goals of the rating system.

This report is an outcome of an assessment of the processes that are used to manage the rating system.

1.1 **Overview of the Rating System**

The rating system, associated procedures, rating categories and relevant information is described in detail on the NRF website through various reports and documents. This section is meant to briefly introduce the system as background.

In figure 1, the high level end-to-end processes are summarized to illustrate the process flow from the inputs to outputs. The diagram depicts the core processes (middle level) which represent the core activities with respect to evaluation and rating.

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3 Rating Brochure: The Evaluation and rating of the Research Performance of Researchers in South Africa through the National Research Foundation, July 2005
The bottom level represents support processes that support the core process. It must be noted that this diagram is mainly designed to illustrate the main components of the rating process in a simple manner. Furthermore, it does not mean that support processes are of less importance. For example, the appointment of specialist committee members, reviewers, chairpersons and assessors are critical but to present the overall process logically these processes are depicted as support processes.

The evaluation and rating process is initiated when a screened and approved application is submitted by the institution to the NRF. After acknowledging receipt, the application is screened for acceptance by the NRF Evaluation Centre (EC). The full documentation is then sent to members of subject-specific specialists, the Specialist Committees, who on the basis of their knowledge and recommendations from the applicants, identify suitable peer reviewers.

At least six reviewers (peers) evaluate the research outputs of each applicant. The Evaluation Centre forwards the relevant documentation (such as applications and guidelines) to peer reviewers and asks them to scrutinise it in order to provide an evaluation on the following:
The quality of the research-based outputs of the last seven years as well as the impact of the applicant's work in his/her field and how it has impacted on adjacent fields.

An estimation of the applicant's standing as a researcher in terms of both a South African and international perspective.

The appraisal reports from the peers including the documentation submitted by the applicant are then used by the Specialist Committees, Chairpersons and independent assessor (collectively known as Assessment Panels) to assign a rating (the rating categories are shown in Appendix F). The final step in the process is the communication of the rating results including feedback from the reviewers’ reports to the institutions by the Evaluation Centre.

If a candidate is dissatisfied with the rating, he/she can lodge an appeal. If an appeal is against decisions taken by the Assessment Panels/L Committee, it is heard by the Executive Evaluation Committee (EEC). Besides hearing appeals the EEC is responsible for rating candidates in the A, P categories and cases in which the assessment panels do not reach consensus.

Appeals against a decision of the EEC are heard by the Appeals Committee.

The composition of these committees/panels and their roles are also discussed and explained further under the findings section.

To illustrate this process further and highlight the roles and interfaces, a summary of this process is shown in table 1.

Table 1 Five Column Process Models for Rating System

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>INPUT</th>
<th>ACTION</th>
<th>OUTPUT</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Institutions</td>
<td>Applications completed by candidates</td>
<td>Screening and approval by institutions</td>
<td>Screened approved applications</td>
<td>NRF Evaluation centre</td>
</tr>
<tr>
<td>Screening of Applications by</td>
<td>Submitted Applications</td>
<td>Screening for completeness</td>
<td>Screened applications</td>
<td>Specialist committees</td>
</tr>
<tr>
<td>Evaluation Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13
<table>
<thead>
<tr>
<th>Specialist committees</th>
<th>Applications from Evaluation centre</th>
<th>Identify the names of at least six, suitable peer reviewers.</th>
<th>Reviewers appointed</th>
<th>NRF evaluation centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer reviewers</td>
<td>Applications from NRF evaluation Centre</td>
<td>Evaluate the research outputs of each applicant</td>
<td>Evaluation Reports</td>
<td>Evaluation Centre</td>
</tr>
<tr>
<td>Assessment Panels/L Committee</td>
<td>Applications from candidates and reports from reviewers</td>
<td>Assess peer reports, recommend a rating and select feedback</td>
<td>Assigned rating</td>
<td>Evaluation Centre</td>
</tr>
<tr>
<td>Evaluation Centre</td>
<td>Feedback on Rating</td>
<td>Compiles feedback and forwards communicates rating results to institutions</td>
<td>Outcomes letters and feedback</td>
<td>Institution</td>
</tr>
<tr>
<td>Institutions</td>
<td>Outcomes letters of Rating results</td>
<td>Informs applicants and lodges appeals if necessary</td>
<td>Rated researchers/ unsuccessful researchers</td>
<td>Applicants</td>
</tr>
<tr>
<td>EEC</td>
<td>A and P applicants Non-consensus and Appeals</td>
<td>Considers A and P candidates, Non-consensus and Appeals</td>
<td>Rated researchers and results of appeals</td>
<td>Institutions</td>
</tr>
<tr>
<td>Appeals Committee</td>
<td>Appeals against EEC decisions</td>
<td>Considers appeals against EEC</td>
<td>Results of appeals</td>
<td>Institutions</td>
</tr>
</tbody>
</table>

1.2 Relationship Map of the Rating System

As mentioned in the previous section, within the NRF, the Evaluation Centre was established to, among other things, manage and administer the evaluation system. In this regard, its specific objectives, amongst others, are

- To interact with individual researchers and/or employing institutions and/or NRF staff about the strategies, logistics and closing dates for submission of applications for evaluation and rating.
- To screen the incoming submissions for completeness.
- To ensure that a sufficient number of reviewers’ reports have been solicited and received for each applicant.
- To facilitate all the logistic arrangements and ensure smooth running of the meetings.

The Evaluation Centre also acts as a secretariat of the committees and communicates the rating decisions to the institutions.

From the background information that is presented in the previous section, it is apparent that to manage the rating system, the Evaluation Centre works and relies in some cases on external parties such as the institutions, the reviewers, assessors, Specialist Committees and Chairpersons. These interactions are illustrated diagrammatically in figure 2.

The key stakeholders in the rating system are:
- The researchers who apply
- The research institutions, to which the researchers are affiliated.
- The NRF Evaluation Centre, which administers the process.
- The reviewers who assess the standing of the researchers.
- Specialist Committees and Assessment Panels who rate candidates.
- Executive Evaluation and Appeals Committees who consider appeals and deals with certain categories.
2 PURPOSE AND REVIEW METHOD

2.1 Purpose

In 2004, an institutional review of the NRF was completed to provide, inter alia, a retrospective view on the performance of the NRF during the first five years of its existence. Furthermore, the review was intended to assess the outcomes and impact of its activities. Based on its findings the review panel made recommendations regarding the strategic direction and operational execution of the NRF’s missions.

In response to the recommendations proposed in the review, the Higher Education South Africa (HESA) in partnership with the South African National Research Foundation (NRF) commissioned the present study to conduct an in-depth review of the NRF evaluation and rating system of individual researchers.

The specific objectives are to conduct a critical analysis of existing processes regarding their efficiency, fitness for purpose, effectiveness, cost and other relevant variables. The strengths and weaknesses of the processes are to be identified. (See Appendix A, Terms of Reference)
2.2 Approach and Methods Used

2.2.1 Information Gathering Methods
A combination of the following information gathering methods was used:

- Review of some existing documentation
- Questionnaire-based interviews with NRF evaluation centre staff and executive management.
- Questionnaire-based survey of some panel members (specialist/panel members, assessors and chairpersons)
- Questionnaire-based interviews with designated authorities at institutions

2.2.1.1 Review of documentation
- A wide range of available documentation relating to the rating system were reviewed, including:
  - Business Plans
  - Internal management progress reports;
  - Procedure manuals
  - Survey Report of Y-Rated Researchers
  - Survey reports from the Evaluation Centre
  - NRF annual reports
  - Information booklets
  - Sample of Reviewers reports

A list of all documentation materials reviewed is listed in Appendix B.

2.2.1.2 Interviews with NRF staff, Panel members and other resource persons
Interviews were held with the following individuals/groups:

- Management and staff of the Evaluation centre who are involved in the rating process. (The interviews with Evaluation Centre staff covered the screening of applications, receiving peer reports, communicating feedback to the institutions, IT system and appeals process. This was done in two full days of face to face interviews with the responsible staff except for the appeals
Follow up telephone discussions were made to obtain additional information.

- Executive management of NRF involved in rating process
- Members of specialist committees and chairpersons
- Designated Authorities from institutions

All interviews with the above-noted individuals/groups, were of a semi-structured open-ended nature. In each case, a list of major questions was provided (different for each different respondent individual/group to individual/group) to structure and guide the interview. The intent was to keep the exchange as informal as possible and leaving sufficient flexibility for pursuing relevant issues and aspects arising during the interview. The main purpose for creating an informal and flexible atmosphere during interviews and informal discussions was to put interviewees or informants at ease and encourage them to volunteer, ad hoc, potentially important views and information not necessarily anticipated at the outset, and thus to enhance the likelihood of getting a more comprehensive, rounded and balanced picture of different views and perspectives on any given issue.

A detailed list of interviewees is provided in Appendix C. The sample of questionnaires used in interviews of Evaluation Centre staff, Assessment Panel members and designated authorities at institutions are reproduced in Appendix D.

### 2.2.1.3 Selection of Priority Processes

The objective of this step was to identify processes that would receive the highest priority during the assessment. This was done to save time and focus on key issues.

To make this selection, two methods were used. The first approach was to select processes that appear to cause problems based on initial discussion with management. Information on process metrics was gathered including the following:

- Number of people involved in executing the process (e.g. number of staff involved in screening of applications).
- Volumes of the process (e.g. number of applicants received)
- Figures on quality (e.g. rating of reviewers).
- Processing time (e.g. cycle time for rating process).
- Costs (e.g. staff cost).

The second method that was used is the Keen Process Matrix. This was done by carrying out an examination of all the processes in the procedure manual of the Evaluation Centre. The result of the analysis of the processes is shown in the following table 2 (not all processes are included).

<table>
<thead>
<tr>
<th>Name of Process</th>
<th>Priority</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invite applications for re-evaluation</td>
<td>Low</td>
<td>Administrative process, background</td>
</tr>
<tr>
<td>Set criteria for new closing date</td>
<td>Low</td>
<td>Background process</td>
</tr>
<tr>
<td>Make a call</td>
<td>Low</td>
<td>Administrative process</td>
</tr>
<tr>
<td>Appoint Chairpersons, assessors /Specialist committees/Appeals committee members</td>
<td>High</td>
<td>Priority</td>
</tr>
<tr>
<td>Appoint Peer Reviewers by Specialist Panels</td>
<td>High</td>
<td>Very important and central to the evaluation process</td>
</tr>
<tr>
<td>Screening of Applications</td>
<td>Medium</td>
<td>Input at the start of the actual rating process, level of involvement of institutions and evaluation centre staff is high</td>
</tr>
<tr>
<td>Receive Peer reports</td>
<td>High</td>
<td>Core to success of rating, high risk because of delays, in receiving reports, quality of reports crucial</td>
</tr>
<tr>
<td>Manage panel/committee processes</td>
<td>Medium</td>
<td>Background administrative process, routine</td>
</tr>
<tr>
<td>Assess peer reports</td>
<td>High</td>
<td>The final outcome is a result of this process</td>
</tr>
<tr>
<td>Rating decisions</td>
<td>High</td>
<td>Administrative process, background</td>
</tr>
<tr>
<td>Select Feedback</td>
<td>High</td>
<td>Correct information to be provided</td>
</tr>
<tr>
<td>Communication rating results</td>
<td>High</td>
<td>Emotive process</td>
</tr>
<tr>
<td>Manage appeals</td>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>
Based on this analysis, the following core and support processes were selected for review.

**Core processes**
- Screening of Applications.
- Assessment of Applicants.
- Feedback to Applicants.
- Appeals Process.

**Support Processes**
- Appointment of Reviewers
- IT system
- Promotion of Rating System

**Note:** In some cases a high priority process might not be reviewed if it does not present serious challenges.

**Limitations**
There are several constraints that posed certain limits to the study which include
- Selecting which processes to review was not obvious at the early stages of the project and the importance of certain processes was realized later.
- Limited sample size of interviewees/respondents reached for certain processes e.g. appeals committee and assessors.
- The review was conducted during vacations and this affected the scheduling of interviews. In some cases key informants could not be interviewed and some were held later than originally planned.
- It would have been useful to get opinions from other rated researchers in the institutions. To address this shortcoming a recent survey of Y-rated researchers was reviewed (internal NRF document).
- The resignation of Dr. Walwn who was the steering committee driver for the project was a limitation. There was no contact with the steering committee.
Every effort has been made to be constantly aware of the subjective nature of information gathering and to adopt methods to try and minimise the risks from subjectivity and bias.
3 FINDINGS
This section summarises the findings of the assessment of the rating processes that were selected. A brief description of the process under review is stated, followed by the key findings, strengths and weaknesses. Suggestions for improvements that were made by the respondents are listed.

3.1 SCREENING OF APPLICATIONS
The objective of the screening process is to ensure that applications are of acceptable quality and are suitable for further processing.

Screening by Institutions
The screening of applications is carried out mainly by the institutions to which the candidates are affiliated. Although there are variations in approach from institution to institution, this process involves assessment of the applications by internal committees (or the designated authority in the smaller institutions) which include experts or rated scientists who have experience in the rating process. If areas of improvement are identified, the applicants are advised to make the necessary adjustments in order to strengthen their submissions. An important output of this process is the assignment of an internal rating by the institution. This is only an internal benchmark and has no bearing on the outcome of the NRF rating process and is not disclosed to reviewers.

Strengths
- The screening of the applications by the institutions is a filtering system that reduces the number of poorly constructed submissions to the NRF.
- The active participation of the institutions (faculties and departments) increases their understanding of the rating system.

Weaknesses
- Candidates submit their completed submissions too late and the institutions that do not have sufficient time to screen properly.
- The screening is done differently among the institutions, and without a standardized process the quality might vary.
Suggested Improvements

- The NRF should consider opening the online system for submissions of applications earlier, e.g. August. This will give institutions more time to conduct the screening before the examination period.
- Although this is not necessarily a screening issue, it was suggested that the NRF should consider shortening the application form. The specific sections that can be reduced will need to be discussed with the applicants directly.

Screening by EC staff

The second screening of the incoming applications is done by the Evaluation Centre. They check for completeness before the applications are processed further.

Table 3 shows the outputs of this screening process for the period between 2002 and 2006. This table shows the number of applications that were received for each year, the number of applications that were accepted for further processing and the number of rejected applications. From these data, between 5 and 8.64% of the applications were returned (average of 7%). The main reason for rejection is that the application is “premature”–which is common for recently qualified candidates (see Figure 4 for graphic presentation of these data).

Table 3. Results of Processing of Applications by EC

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of applications received</td>
<td>643</td>
<td>410</td>
<td>324</td>
<td>368</td>
<td>452</td>
</tr>
<tr>
<td>Accepted Applications</td>
<td>596</td>
<td>388</td>
<td>296</td>
<td>339 (92%)</td>
<td>431 (95%)</td>
</tr>
<tr>
<td>Rejected Applications</td>
<td>47 (7.77%)</td>
<td>22 (5.36%)</td>
<td>28 (8.64%)</td>
<td>29(8%)</td>
<td>21 (5%)</td>
</tr>
</tbody>
</table>
Figure 3. Screening of Applications.

The strengths and weaknesses of the screening process are:

**Strengths**
- The second screening is a second quality step.
- Well established process of screening with very rigorous, detailed procedure by evaluation centre.
- Competent staff - know what to look for.
- Good training provided to new members so that new staff can get up to speed quickly.

**Weaknesses**
- High workload especially to senior staff that have to train new staff.
- By its nature and given the length of the applications, this is a cumbersome process.

**Suggested Improvements**
No suggestions for improvement were made. The screening is a manual process and attention to detail is important.
3.2 APPOINTMENT OF REVIEWERS

The cornerstone of the rating process is the appointment of peer reviewers by the Specialist Committee members. Specialist Committee members are appointed by the responsible NRF Executive member by any of the following steps.

- A call for nominations.
- Consultation with the appropriate existing Specialist Committee.
- Consultation with relevant NRF Executive Directors.
- Consultation with any suitable person in the South African research community.

It is important that the composition of the committee is made up of members who have diverse expertise in the particular research field. From the committee, a convener is appointed by the relevant NRF Executive member with delegated authority by the NRF President.

The appointment of the peer reviewers is a two step process. This process is driven by the convener of the committee who distributes the submissions to the other members based on their expertise.

In the first step the researchers’ list of nominated reviewers is assessed to make sure that there are no conflicts of interest. In most cases, this process does not present problems, unless the committee feels a proposed peer is “too close” to the candidate (e.g. immediate supervisor or close collaborator).

The second step is the identification of independent reviewers. The main criteria that are used in appointing reviewers is that they must be true peers, experts in their field and are active in their research field.

The specialist committees use several approaches and sources which include the following.

- Rely on first hand knowledge of suitable reviewers.
- Senior authors of good quality papers in the same field as candidate and who have cited papers of the candidates.
- Solicit assistance from researchers who know the field.
- Make use of the NRF database of reviewers.
- Identify reviewers from conference proceedings attended by applicant.
- The reviewers should be actively involved in research, preferably those who are associated with an academic institution.
- Use databases such as Google scholar, ISI, Scopus and others.

This process requires a high level of involvement from the Specialist Committees and therefore the composition of the committee is important. Poor commitment by members can be a source of delays in the appointment of reviewers. It is therefore important that the convener has sound interpersonal skills and can intervene when members do not perform. The challenge is to identify reviewers who know the applicant’s work which is difficult to determine in advance.

**Strengths**
- One of the strengths is that candidates are provided an opportunity to supply the names of peers and also indicate which reviewers should not be approached.
- Detailed guidelines are provided by the NRF on selection of reviewer.
- Specialist committee members, being established researchers have their own network from which they can identify peers.
- The Committees have developed a wide range of methods for identifying reviewers and in most cases are able to identify suitable peers.
- If the specialist committees are struggling to find reviewers, they are allowed to consult colleagues to get additional names.
- The degree of bias is reduced through the selection of reviewers from a wide variety of countries.

**Weaknesses**
- Time consuming process to the Specialist Committees.
- Reviewer fatigue—same reviewers are sometimes used excessively.
- If the applicant’s discipline is highly specialized, the pool of possible reviewers is small.
- NRF Database not very useful because of the diversity of fields.
- Difficult to find reviewers for applicants who are still at an early stage of their careers—some reviewers understandably decline because they don’t know enough about the candidate’s work.

The evaluation centre staff contact the identified reviewers and if they are willing, forward the candidate’s application and guidelines. On a regular basis, they keep track of the responses and remind reviewers occasionally. Common problems that are associated with this process are
- Specialist Committees who do not supply the names of reviewers on time causing delays in the entire process.
- Contact details of reviewers might have changed, making it difficult to trace
- Most serious problem is when nominated reviewers do not respond until it is too late to find a replacement.

From these findings, the effectiveness of appointing the reviewers largely depends on the resourcefulness and commitment of the panel members. There is no single method and the panelists “learn as they go along”.

This is a high risk process that is not very efficient by its nature. It depends on too many variables and is difficult to control. For example, a panelist can identify the “first choice” reviewers but that does not guarantee their participation. They have to resort to other reviewers and their level of confidence decreases.

**Suggested Improvements**
- The NRF database of reviewers should be screened and reviewers who have consistently not delivered or submitted poor report should be removed
- A higher focus on selecting reviewers from a pool of quality researchers that regularly cite the candidate’s work will be of benefit to the candidate.
• Citations can be tracked and the Evaluation Centre could assist by providing lists of such researchers to the Specialist Committees.
• As an incentive to reviewers, a modest financial compensation for their time could attract more positive responses. Some reviewers do require some compensation for their service.

3.3 ASSESSMENT OF APPLICANTS

The assignment of a rating is a two step process. In the first step, the specialist committee members meet independent of the chairperson and the assessor. Their first task, is to rate the quality and contents of the reviewer’s reports on which they base their recommendations.

Rating of Peer reports by Specialist Committees

The committee rates the peer reports in order to eliminate those that are of poor quality and not useful. Using a rating scale of 1-6 (1 being the highest rank and 6 the lowest4) the reports are assessed and only those that are rated 1, 2 or 2/3 (borderline cases) are used. As shown in table 4, in 2006, 67% of the reports were rated one and two and in 2005 the figure was only 61%.

Table 4 Rating of Reviewers Reports by Specialist committees

<table>
<thead>
<tr>
<th>Rating</th>
<th>2006</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27%</td>
<td>21.5%</td>
</tr>
<tr>
<td>2</td>
<td>39.8%</td>
<td>39.4%</td>
</tr>
<tr>
<td>3</td>
<td>7.7%</td>
<td>8.6%</td>
</tr>
<tr>
<td>4</td>
<td>15.2%</td>
<td>19%</td>
</tr>
<tr>
<td>5</td>
<td>9%</td>
<td>11%</td>
</tr>
<tr>
<td>6</td>
<td>1.1%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

From these data and from the interviews with panel members, the variable quality of the reports remains an area of concern.

4 Reports are Rated as follows
(http://www.nrf.ac.za/evaluation/Content/Evaluation/PanelMembers_2006.htm#assessment)
1 Good to Excellent Report
2 Satisfactory Report
3 Unsatisfactory Report
4 Inconclusive Report
5 Inappropriate Report
6 Inappropriate Reviewer
**Strengths**

- One of the strengths is that before they are used, the reviewer’s reports are rated, to identify those that can be used in the rating.
- In most cases a sufficient number of satisfactory to good reports are available to recommend a rating.
- If the number of good reports is insufficient, additional reviewers are approached.
- Good training provided by NRF to the specialist committee members on how to rate reports.

**Weaknesses**

- Quality of reports is very variable.
- Reviewers do not appear to follow or do not read the guidelines.
- Make comments about the researcher's work but do not motivate or substantiate.
- In some cases they are not true peers and do not know the candidate’s work.
- Excessive praise or biased statements towards candidate—not neutral.
- Reviewers do not use the key words that the panels are looking for to come to a recommendation. For example, they might not rate the applicant relative to peers in the field adequately.

After rating the reports, the specialist committee deliberate and try to reach consensus on a recommendation. The panelists are very confident that recommending the rating works very well, especially if there are sufficient good reports.

**Suggested Improvements**

- In addition to providing feedback on the researcher’s standing, the reviewers could also be requested to provide their own rating of the candidate according to the rating categories.
- Although the guidelines to reviewers are adequate, a system where the reviewer is asked to rate a particular aspect of the candidate’s work (e.g. quality of paper, standing or productivity) on a numbered scale could be explored. Then he/she can briefly motivate the numerical value (e.g. high quality of journals,
international leader). Although this could present problems with standardization, perhaps it could be piloted on a small scale.

Rating decision by Assessment Panels

In the second phase of the rating, the specialist committee members are joined by the assessor and chairperson.

The chairperson is either an NRF Executive member or a researcher of international repute. Chairpersons are appointed annually by the NRF President. Their primary role in the assessment process is to facilitate the discussion and ensure that the rating policies are adhered to. The main discussion occurs between the specialist committee members and the assessor who have to substantiate their respective ratings.

The assessor recommends a rating independent of the specialist committees. Assessors are well respected researchers who are familiar with the evaluation process and have previously served as Specialist Committees. Furthermore, assessors are not subject experts. One of the roles of the Assessors is to ensure that the assessment process is fair and independent and that the same criteria are applied consistently across disciplines.

During 2002 and 2003, an analysis of 452 applications in the social sciences and humanities and 462 applications in the natural sciences showed that in 85% of the former and 88% of the latter, the ratings assigned by the specialists committee and the assessor were exactly the same or differed by one subcategory at the most. A similar exercise was repeated in 2006 and it showed that in all the natural sciences and engineering applications that were processed, there was agreement within one category in 95% of the entire majority of cases and in 96% of all social sciences and humanities

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5 The NRF evaluation & Rating system, Facts and figures, 2005,
applications\textsuperscript{6}. These data show that although the specialist committees and assessors do the rating independent of each other, in almost all of cases they agree. If no consensus is reached, the cases are referred to the Executive Evaluation Committee. From the statistics very few cases are referred to this committee and in 2006, 4.4\% were referred and in 2005 only 6.3\%.\textsuperscript{7}

**Strengths**

- The applicants are assessed in two separate processes.
- The composition of the assessment panel and the presence of the assessor who is not a subject expert adds more credibility.
- The presence of an assessor who is involved in other panels ensures consistency across disciplines.

**Weaknesses**

- No weaknesses were mentioned.

**Suggested Improvements**

No suggestions were made

### 3.4 FEEDBACK TO APPLICANTS

Besides the rating results, applicants are also provided with feedback from the reviewers reports.

To provide the feedback, the assessment panels use two different approaches. Some panels “select the feedback” by identifying relevant remarks from the reviewer’s reports before the assessment. This information is consolidated by the evaluation centre-by extracting the relevant sections from the reports.

On the other hand, with some panels the convener collates the feedback by taking notes during the specialist committee meeting and constructs a feedback report. The

\textsuperscript{6} Internal NRF unpublished report

\textsuperscript{7} Monitoring Framework for Appraisal Processes, Internal NRF report
idea behind this approach is to communicate to the candidate how the rating decision was reached.

Irrespective of the approach that is used, many panel members concede that this is an area of weakness that does not receive the attention it deserves.

**Strengths**
- When done correctly it provides useful information to candidates.
- Feedback can be used by institutions and candidates for career development.

**Weaknesses**
- To provide the feedback in detail and properly would require someone to write a report, which is not practical especially for panels with large numbers of submissions.
- It is done at the end of the meetings—time constraints do not allow members of the panels to invest sufficient time.
- In some cases the candidates are upset about the feedback rather than the rating.

The institutions are also not satisfied with the feedback and there are very strong feelings from some of the institutions that were contacted.

The main weaknesses are
- The feedback is sometimes not consistent with the rating.
- Often the feedback given in the outcome letter is a few paragraphs and does not tell the candidate much. Candidates can request additional feedback, but this is another process that could be avoided if this is done correctly the first time.
- Information that is in the outcome letter is sometimes contradictory.

Taken together, these findings suggest that the feedback process requires serious attention. The main constraint is that some of panelists just do not have sufficient time to attend to this important task.
Suggested Improvements
- Some of the shortcomings of the feedback can be viewed as a resource problem. This could be addressed by appointing someone to assist the Assessment Panels in drafting the feedback reports. Although this has cost implications, this investment might be worthwhile, given the sensitivities around the feedback issue.
- The Specialist Committees should try to select more feedback from the reviewer’s reports to address complaints about limited feedback.

3.5 APPEALS PROCESS

The NRF has divided appeals into two groups. The first category of appeals are those that are lodged against decisions taken by the Assessment Panels and the L Committee. The second are appeals that are lodged against decisions taken by the Executive Evaluation Committee.

(a) Appeals against decisions taken by the Assessment Panels/L Committee

Appeals against decisions taken by the Assessment Panels/L Committee are heard by the EEC. The Executive Evaluation Committee is composed of the NRF president, NRF Vice-President (Research and Innovation Support and Advancement), NRF Executive Director with responsibility for evaluation and rating, Chairpersons of Assessment Panels, Relevant NRF Executive Directors on a rotational basis, one of the conveners of the assessment panels on a rotational basis annually, and manager and secretariat from the evaluation centre.

The EEC considers the appeal by reviewing the relevant documents and makes a decision which is then communicated to the institution.

Strengths
- The appeals are not heard by the same committee that assigned the rating.
- The composition is one of its strengths—presence of chairpersons of the different panels ensures consistency.

Weaknesses
- No weakness was identified in this process.

Suggested Improvements
No suggestions for improvement were made.

(b) Appeals against decisions taken by the EEC

It must be mentioned that a meeting with the appeals committee chairperson could not be secured during the review period. The information on the appeals process was obtained mainly from institutions and from NRF publications. Several appeals committee members were therefore interviewed telephonically.

If an institution is dissatisfied with the decision of the EEC and has sufficient grounds, it can appeal against the decision. Such an appeal is heard by the Appeals Committee. The appeals committee is constituted by the NRF board and comprises of a chairperson who is thoroughly familiar with the rating process and need not be a member of the NRF board, the NRF president/Chairperson of the EEC, a member who has considerable experience in the rating system and one or two members who are researchers of stature. The appeals Committee considers all relevant documents (e.g. meeting documents, the application of the researcher, reports by reviewers).

The Appeals Committee examines the available information to determine if the procedures were followed correctly. If the Appeals Committee differs with the decisions of the EEC, it refers such cases back to the EEC and points out specific shortcomings. After reviewing the process and reaching a decision, the EEC provides feedback to the Chairperson of the Appeals Committee. The decision of the EEC is communicated to the employing institution lodging the appeal.

Strengths
• The Appeals Committee is also made up of members who are different from the EEC except for the NRF president. The appeal is therefore heard by another decision making body that takes a fresh look at the procedures.
• Based on legal opinion that has been solicited, the appeals process does not reveal any major flaws.

Weaknesses
• No weaknesses in this process were mentioned.

Table 5 shows the results of appeals per total applications that were considered between 2002 and 2006.

Table 5. Number of Appeals lodged compared to total Applications.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Applications</th>
<th>Number of Appeals</th>
<th>Appeals as %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>649</td>
<td>45</td>
<td>7%</td>
</tr>
<tr>
<td>2003</td>
<td>410</td>
<td>16</td>
<td>4%</td>
</tr>
<tr>
<td>2004</td>
<td>324</td>
<td>25</td>
<td>7.7%</td>
</tr>
<tr>
<td>2005</td>
<td>366</td>
<td>26</td>
<td>7.10%</td>
</tr>
<tr>
<td>2006</td>
<td>453</td>
<td>24</td>
<td>5.30%</td>
</tr>
</tbody>
</table>


The data shows that the number of appeals ranged from 4 to 7% during the period under review. This data shows that the rating process as currently formulated is very effective and the number of appeals is very low.

3.6 SUPPORT PROCESSES

3.6.1 IT system

The NRF online system is critical to the evaluation process. The system supports three main processes
• Application form.
• Management of panel process, rating management process and outcomes.
• Database of statistics and reports.
The IT system turned out to be one of the most serious areas of weakness from both the evaluation centre staff and the institutions. The problems that were highlighted are;

- Not user friendly – especially for first time applicants.

To address some of these issues, the Evaluation Centre has been proactive and conducts training especially to first time users. Apparently, this has reduced the number of queries from applicants.

The internal processes that are supported by the system to manage the rating process are also problematic. Apparently there are fundamental problems with the design of the system from a technical point of view. The fundamental problem is that the rating system operates differently from the funding process in the NRF. A project is underway to develop a rating management tool that is “fit for purpose”.

**Suggested Improvements**

The NRF is in the process of acquiring an IT system that will address some of the shortcomings.

**3.6.2 Promotion of the Rating Process**

To increase the number of applicants and improve the awareness of the rating system, the evaluation centre regularly markets the system via a number of promotional activities. These include

- Posting very detailed information on the rating system on the NRF website.
- Undertakes visits and makes presentations to institutions.
- Makes presentation to interest groups when requested.
- NRF president and staff attend award functions at institutions to create more awareness of the rating system.
- An information booklet that describes the rating process is published by the Evaluation Centre.
Figure 4. Attendance of Promotional visits

During the visits to institutions, the evaluation centre offers training, online demonstration of the IT system that is primarily aimed at first time applicants and one-on-one interviews. Despite these efforts, the attendance of the presentations at individual institutions is low as shown in Figure 4. The low attendance could be due to a number of reasons, and these will have to be investigated (see suggestions below).

**Strengths**

- Use of multiple marketing channels.
- Direct approach—visits to institutions.
- Relevant training offered such as online system.
- Complements training and awareness conducted by institutions.
- The Evaluation Centre solicits feedback and evaluates it—most of it is positive.

**Weaknesses**

- Low attendance by staff in some institutions due to small number of researchers who publish or lack of interest.
- Lack of clear marketing strategy in the business plan.

**Suggested Improvements**

- In creating awareness on the rating system, the NRF could work more closely with the research offices such that they also play a supporting role in promoting the rating system. Rated researchers could be encouraged to also get involved.
by championing the system in their institutions (inform and educate younger researchers about the rating process etc). It was interesting to note that in institutions that have ex-NRF staff members in the research office, their knowledge of the system is vital.

- A perception survey or market research would be helpful to find out the views of the research community on the Rating system. This will identify the areas of ignorance and misperceptions. Based on this a more specific marketing and promotional campaign would be designed in response to the feedback. Target institutions, research fields could be identified from such an exercise.

### 3.6.3 Cost of the Rating Process –Evaluation Centre

An estimation of the total cost of the rating system would require an estimation of the costs that are associated with the entire process including costs that are incurred by the NRF, research institutions, reviewers and panelists. Although this is possible, the exact information would have to be collected from these stakeholders to make a meaningful estimate. In the absence of such information, the cost analysis was only limited to the cost of the evaluation centre.

The total expenditure of the evaluation centre on the rating system for the financial years between 2003 and 2006 is shown in table 6. The total expenditure was calculated from the financial statements in which **60% of the costs are attributable to the rating system.**

From the data presented in this table, the total expenditure (includes assets, salaries and running expenses) increased from R1.67m in 2003 to R2.28m in 2006, an overall increase of about 36%\(^8\). During this period, the total expenses (includes salaries and running expenses) increased from R1.65m to R2.22m.

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\(^8\) The information is based on actual costs, when the study was completed, the budgeted costs were not available.
Table 6 Expenditure of the Evaluation Centre on the Rating System.

<table>
<thead>
<tr>
<th>Cost Item (Rands)</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Expenditure</td>
<td>1 676 825</td>
<td>1 971 154</td>
<td>2 185 526</td>
<td>2 284 602</td>
</tr>
<tr>
<td>Assets Acquired(a)</td>
<td>33 740</td>
<td>30 189</td>
<td>64 016</td>
<td>94 664</td>
</tr>
<tr>
<td>Total Expenses</td>
<td>1 656 581</td>
<td>1 953 040</td>
<td>2 147 116</td>
<td>2 227 803</td>
</tr>
<tr>
<td>Salaries</td>
<td>1 042 921</td>
<td>1 373 974</td>
<td>1 611 591</td>
<td>1 614 380</td>
</tr>
<tr>
<td>Running Costs</td>
<td>613 659.6</td>
<td>579 066</td>
<td>535 525.2</td>
<td>613 422</td>
</tr>
</tbody>
</table>

\(a\)-Assets at cost value
Source: NRF-EC financial Statements

To examine the costs further, the total expenses were analysed in detail (assets were excluded because it is not practical to attribute their percentage use in the rating system. In addition to this, depreciation would have to be taken into consideration).

Table 7 shows that between 2003 and 2006, the salaries increased from R1.04 m to R1.61m. an overall increase of 54%. During the same period, salaries as percentage of total expenses also increased from 63% in 2003 to 72% in 2006.

Table 7 Analysis of the Total Expenses of the Rating system.

<table>
<thead>
<tr>
<th>Cost Item (Rands)</th>
<th>2003</th>
<th>%Total Expenses</th>
<th>2004</th>
<th>%Total Expenses</th>
<th>2005</th>
<th>%Total Expenses</th>
<th>2006</th>
<th>%Total Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Expenses</td>
<td>1 656 581</td>
<td>62.95</td>
<td>1 953 040</td>
<td>70.35</td>
<td>2 147 116</td>
<td>75.06</td>
<td>2 227 803</td>
<td>72.46</td>
</tr>
<tr>
<td>Salaries</td>
<td>1 042 921</td>
<td>37.04</td>
<td>1 373 974</td>
<td>29.64</td>
<td>1 611 591</td>
<td>24.94</td>
<td>1 614 380</td>
<td>27.53</td>
</tr>
<tr>
<td>Total Running Costs</td>
<td>613 659</td>
<td>37.04</td>
<td>579 066</td>
<td>29.64</td>
<td>535 525</td>
<td>24.94</td>
<td>613 422</td>
<td>27.53</td>
</tr>
</tbody>
</table>
On the other hand, the total running costs (operational costs) have virtually remained the same, at R613 659 in 2003 and R613 422 in 2006. The main cost item in the running cost is travel and subsistence which on average was R311 610 during this period. From the data presented in table 7, the running costs as percentage of total expenditure have declined from 37% to 27%.

Figure 5, illustrates the trend in total expenses, salaries and total running expenses.

![Figure 5. Expenditure of Evaluation Centre attributed to the rating system. Source: Financial Statements from NRF](image)

To estimate the cost effectiveness of the rating process, the cost per application was determined. Table 8 shows the number of applications that were processed in each financial year and the total expenses that were incurred by the evaluation centre. From this table, the cost per application was estimated to be R4 040 in 2003 which increased to R4 928 in 2006 (increase of 21%). The average cost per application during this period was R5 207.

<table>
<thead>
<tr>
<th>Table 8 Estimation of Cost per Application.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Applications Processed</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Total Expenses in Rands</td>
</tr>
<tr>
<td>(exclude Assets Acquired)</td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

The cost effectiveness of the rating process can be assessed if the cost per application is benchmarked against other similar rating systems.

**Suggestions for Improvement.**

- To estimate the cost that are attributed to the rating system accurately, the cost for the rating system should be reported separately from the other activities of the Evaluation Centre. **This can be done by establishing a separate cost centre.**

- From the NRF’s point of view, the cost effectiveness of the rating system can be assessed by comparing the actual costs against budgeted costs. Any variations (above a budgeted figure) can be used to assess the cost effectiveness of the rating process.

- As mentioned above, an estimate of the total cost of the rating process is possible if a proper and credible data gathering process can be put in place. Information could be gathered from the research institutions, panel members and reviewers, to determine the time they spend on the rating process. It is suggested that the panel members could provide this information during the current round of meetings. Reviewers can also be requested to estimate the time they spend evaluating the applications. Together with the expenditure of the Evaluation Centre an overall estimate can be made.
4 CONCLUSIONS

This section provides a summary of conclusions reached in the previous section. Emphasis is placed on those conclusions that relate to the processes that were selected for review.

Screening Process

The screening of the applications by the institutions is done effectively and on average only 7% of the submitted applications is returned without further processing. The main reason the applications are returned is that they are “premature”; in most cases these are recently qualified researchers who do not have an adequate track record.

Most institutions that were contacted have established internal processes in order to assess the content and quality of the candidates’ submissions. Furthermore, guidance on constructing well motivated submissions is provided. Although this is becoming an administrative burden to the institutions, its importance is acknowledged. Several institutions conceded that they still have shortcomings and will adopt best practices from others. The NRF’s workshops with institutions are a very important intervention that will no doubt assist institutions with limited capacity and expertise.

A related issue that was mentioned was the length of the application form which was regarded as very long and time consuming to complete.

Appointment of reviewers

The appointment of suitable reviewers presents challenges especially in disciplines that have a small pool of reviewers. Credit must be given to the specialist committees for their resourcefulness and commitment. Although the committees employ different
approaches and in most cases are successful, there is frustration with this process. Some of the problems are:

- Finding reviewers for obscure fields of research where the pool is limited.
- Identifying reviewers for researchers who work in multidisciplinary fields.
- In some cases it is difficult to identify international reviewers for researchers whose research has a local content.
- Finding reviewers for researchers who are at early stages of their careers, because they are not yet established and their work is still unknown.
- In some cases, the lack of commitment from the panel members is a handicap.

**Assessment of Reports by Specialist Committees**

Overall this process works well except for the variable quality of reports that was mentioned by the respondents. The quality of the reviewers’ reports varies with approximately 66% rated 1 and 2.

The main sources of the problems are;

- Some reviewers do not fully understand what is required from them
- In some cases the reviewer reveals lack of knowledge of the candidate’s work.

**Rating of Applicants by Assessment Panels**

The actual rating appears to work well if the reports are of good quality and panelists can reach consensus fairly easily. One of the interesting finding was the high level of agreement between the specialist committees and the assessors although they assign ratings independently. This demonstrates the validity and robustness of the process.

**Feedback to Applicants**

Despite attempts to improve the quality of the feedback, it remains a serious problem. Although some panels get it right, there is no consistency in terms of quality. The main reason is the lack of time to do it properly at the end of exhausting sessions. To their credit, the panels are fully aware of this problem and are trying to address it.
The institutions raised similar concerns about the feedback. The feedback is sometimes contradictory to the rating or is out of context. The feedback is regarded as important to the candidates for development purposes.

**Support Processes**

**IT system -NRF online**

A common source of frustration that was mentioned continuously is the NRF online system. Although it was not investigated in detail, it was mentioned by most of the respondents voluntarily.

Within the Evaluation Centre, the performance of the system is also unsatisfactory and the feeling is that it is not suitable for the rating system. An improvement project has been initiated to address some of the shortcomings.

**Promotion of the Rating Process**

The low attendance of the promotional visits could either be ineffective marketing (low marketing budget) or lack of interest by the researchers. To address this problem the exact causes should be identified. What is interesting is the very positive feedback from researchers who attend.

**Summary of Strengths and Weaknesses of the Rating Process**

Despite the weaknesses and inefficiencies that are mentioned, overall the rating processes are very rigorous. The weaknesses that have been mentioned are not major flaws and are expected from any process especially a peer system. The system has been in existence for a long period and has clearly undergone improvements and changes that have improved its effectiveness and efficiency.

**The most prominent strengths are**

- Rigorous process with checks and balances.
- Well established process that has undergone improvements.
Based on well established principle of peer review.

Good knowledge base on rating accumulated over the years

Its weaknesses are

- Cumbersome process that is resource intensive.
- The impression we got is that, the research community does not fully understand how the rating system works.
- Perceived not to be suited for all disciplines.
Appendix A Terms of Reference for the Review

A review of the processes used to manage the rating system in the past five years. The NRF system of evaluation and rating has different sub-processes in which various groups of individuals are involved, i.e. applicants, research offices of the institutions to which the applicants are affiliated, peer reviewers and members of panels at three different levels within a hierarchy. These processes will be analysed, commenting on their efficiency, fitness-for-purpose, effectiveness, transaction costs, etc. This study should also comment on the strengths and weaknesses of the overall evaluation and rating processes.

Appendix B Documentation and References Reviewed

The following documents were reviewed

<table>
<thead>
<tr>
<th>Document</th>
</tr>
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<tbody>
<tr>
<td>Business Plan for 2007 Financial Year</td>
</tr>
<tr>
<td>EC progress reports 2006/7</td>
</tr>
<tr>
<td>Research Careers of Y rated Researchers in South Africa: Evolution, Support and Obstacles</td>
</tr>
<tr>
<td>Financial Statements</td>
</tr>
<tr>
<td>Monitoring Framework for appraisal process</td>
</tr>
<tr>
<td>The NRF Evaluation and Rating system-Facts and Figures -2005</td>
</tr>
<tr>
<td>Current processes for the evaluation and rating of individual researchers-draft</td>
</tr>
<tr>
<td>Rating Brochure</td>
</tr>
<tr>
<td>Sample of Reviewers report</td>
</tr>
<tr>
<td>Sample of Feedback Reports</td>
</tr>
<tr>
<td>Survey on the Recommended ratings by Institutions</td>
</tr>
</tbody>
</table>

Appendix C Persons Interviewed and Contacted Institutions

NRF Evaluation Centre Staff

<table>
<thead>
<tr>
<th>NAME OF STAFF</th>
<th>POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gudrun Schirge</td>
<td>Manager Evaluation Center</td>
</tr>
<tr>
<td>Kealebuga Letlhaku</td>
<td>Liaison Officer</td>
</tr>
<tr>
<td>Desiree Sassman</td>
<td>Liaison Officer</td>
</tr>
<tr>
<td>Winnie Motsatsi</td>
<td>Liaison Officer</td>
</tr>
</tbody>
</table>
Specialist Committee Members, Assessors and Chairpersons

<table>
<thead>
<tr>
<th>NAME</th>
<th>PANEL/COMMITTEE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr A Kaniki (Andrew)</td>
<td>Special assessment panel for the L rating-Chairperson</td>
</tr>
<tr>
<td>Dr G von Gruenewaldt</td>
<td>Chairpersons of assessment panels</td>
</tr>
<tr>
<td>Prof AM Weinberg (Alan)</td>
<td>Literary studies, languages and linguistics</td>
</tr>
<tr>
<td>Prof. DD van Reenen</td>
<td>Earth sciences</td>
</tr>
<tr>
<td>Prof DJ Mycock (David)</td>
<td>Plant sciences</td>
</tr>
<tr>
<td>Prof GO West</td>
<td>Religious studies and theology</td>
</tr>
<tr>
<td>Prof H Huismans</td>
<td>External members special assessment panel for the L rating</td>
</tr>
<tr>
<td>Prof JB Adler (Jill)</td>
<td>Education</td>
</tr>
<tr>
<td>Prof JS Sharp</td>
<td>Anthropology, development studies, geography, sociology and social work</td>
</tr>
<tr>
<td>Prof MG Alexander (Mark)</td>
<td>Engineering</td>
</tr>
<tr>
<td>Prof RG Morrell (Robert)</td>
<td>Education</td>
</tr>
<tr>
<td>Prof RI Haines</td>
<td>Chairpersons of assessment panels</td>
</tr>
<tr>
<td>Prof CM de la Rey</td>
<td>Chairpersons of assessment panels (interviewed by telephone)</td>
</tr>
<tr>
<td>Dr. A van Jaarsveld</td>
<td>Chairpersons of assessment panels</td>
</tr>
<tr>
<td>Prof. CR Walton</td>
<td>Appeals Committee (interviewed by telephone)</td>
</tr>
</tbody>
</table>
Prof. W. du Plessis | Appeals Committee (Interviewed by telephone)

**Visited Institutions**

<table>
<thead>
<tr>
<th>Name of Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Pretoria</td>
</tr>
<tr>
<td>University of Johannesburg</td>
</tr>
<tr>
<td>University of Cape Town</td>
</tr>
<tr>
<td>University of Western Cape</td>
</tr>
<tr>
<td>University of Stellenbosch</td>
</tr>
<tr>
<td>Human Sciences Research Council</td>
</tr>
<tr>
<td>University of South Africa</td>
</tr>
<tr>
<td>Cape Peninsula Institute of Technology</td>
</tr>
<tr>
<td>Mintek</td>
</tr>
<tr>
<td>Council for Scientific and Industrial Research</td>
</tr>
<tr>
<td>University of KwaZulu Natal</td>
</tr>
<tr>
<td>Tshwane Institute of Technology</td>
</tr>
<tr>
<td>Iziko Museum</td>
</tr>
<tr>
<td>Transvaal Museum</td>
</tr>
</tbody>
</table>

**Appendix D Questionnaires For Evaluation Centre Staff, Panel Members, Institutions And IT System**

**PROCESS: Screening and Dispatching Applications**  
Period (2002-2006)

<table>
<thead>
<tr>
<th>Name of Respondent:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position:</td>
</tr>
<tr>
<td>Date of Appointment</td>
</tr>
<tr>
<td>How long have you been involved in this process</td>
</tr>
<tr>
<td>Role in Process:</td>
</tr>
<tr>
<td>Main activities of the process <em>Summarise very briefly what you do in this process</em></td>
</tr>
<tr>
<td>Inputs of Process:</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
## Output of Process

<table>
<thead>
<tr>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
</tr>
<tr>
<td>2003</td>
</tr>
<tr>
<td>2004</td>
</tr>
<tr>
<td>2005</td>
</tr>
<tr>
<td>2006</td>
</tr>
</tbody>
</table>

### What are the performance targets of your process? (in terms of time, required quality and costs)

<table>
<thead>
<tr>
<th>Year</th>
<th>Time</th>
<th>Quality/Standard</th>
<th>Cost (where applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Who else is involved in your process?

## Who uses the outputs of your process?

## What is working well in this process?

<table>
<thead>
<tr>
<th>Strength</th>
<th>Strength 1</th>
<th>Strength 2</th>
<th>Strength 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## What are we not doing well in process?

<table>
<thead>
<tr>
<th>Problem</th>
<th>Problem 1</th>
<th>Problem 2</th>
<th>Problem 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

__For the remaining questions use the ranking key at the bottom of the table. Remember, there are no right or wrong answers and your candid response is required__

Can the team resolve this problem?

Is the problem important?

Does the team have control over this problem?

Has the team agreed that this is a problem and wants to work on it?

### Ranking key

- 3=To a great extent
- 2=To some extent
- 1=To a slight extent

Thank you for your time and co-operation
A PROCESS: APPOINTMENT OF REVIEWERS

The specialist committees are responsible for the selection of at least six reviewers per application. Apart from reviewers that are proposed by applicants, how do you identify potential reviewers?

From the pool of potential reviewers, how do you select suitable candidates with the required competencies?

What are the main problems that you experienced in selecting and appointing reviewers?

Given the importance of this process, what improvements can be made to make it more effective and efficient?

B PROCESS: ASSESSMENT OF APPLICANTS BY PANELS/COMMITTEES

In order to assess the applicants, the committees rely on the reviewers reports, from your experience how was the quality of the reports?

How do you rate the reports and what are the main problems that you identified of observed?

How can the quality of the reports be improved to ensure that a sufficient number is available to the committee?

As the specialist committee and assessment panel, how do you reach consensus on a rating decision?

What are the strengths of the assessment process?
What are its main weaknesses?

What can be done differently to enhance the assessment of applicants?

C PROCESS: FEEDBACK TO APPLICANTS

The assessment panels are responsible for identifying appropriate feedback to applicants. Feedback to applicants is an important output of the rating process. As panelist, how do you ensure that the feedback is objective and useful?

In some cases, the applicants request additional feedback from the assessment panels, what causes this problem?

How can the feedback to applicants be improved?

D GENERAL

Besides the processes that are the focus of our discussion, what are the main strengths of the rating system of the NRF?

What are its key weaknesses?

What improvements do you suggest?
REVIEW OF MANAGEMENT OF RATING PROCESS OF INDIVIDUAL RESEARCHERS

Designated Authorities and Coordinators

<table>
<thead>
<tr>
<th>Name of Respondent</th>
<th>Role in Rating Process</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**A PROCESS: SCREENING AND SUBMISSION OF APPLICATIONS**

The research offices serve as gatekeepers and approve the applications before submission to the NRF. How do you ensure that the applicants meet the requirements of the rating process?

What are the common problems that you experience with the applications?

In some cases applications are not processed by the NRF, if your institution has experienced this problem, how can it be avoided?

From your experience, what problems do researchers experience regarding the completion and submission of applications?

**B PROCESS: FEEDBACK FROM ASSESSMENT PANELS**

Besides the rating results, feedback from the assessment panels is an important output of the rating process. From your experience is the feedback adequate and fit for purpose?

If there are any, what are the main problems with the feedback that is communicated to researchers?

How can the quality of the feedback be improved by the assessment panels?

**C APPEALS PROCESS (if Applicable)**

Ideally, the NRF would prefer to avoid the appeals. If researchers from your institution have appealed the decision of the panels, what has been the basis of the appeals?

Are the appeals dealt on time?
1. On average, the rating process takes about 8.4 months; do you think this cycle time is acceptable?

2. Having been involved in the rating process, what are its main strengths?

3. What are its main weaknesses?
Questionnaire for IT system-Internal

*Complete questionnaire by filling in the un-shaded areas.*

<table>
<thead>
<tr>
<th>Review of IT system for Rating Processes of the Evaluation Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Administrative Information</td>
</tr>
<tr>
<td>System Title</td>
</tr>
<tr>
<td>System Manager</td>
</tr>
<tr>
<td>2.a System Description</td>
</tr>
<tr>
<td>Please provide a brief summary of the system and the description of the rating processes that the system supports</td>
</tr>
<tr>
<td>2. b. When was the system implemented?</td>
</tr>
<tr>
<td>3. Mission analysis</td>
</tr>
<tr>
<td>3.a. For each strategic goal that the system supports, provide one paragraph explaining how the system is continuing to meet the EC goals</td>
</tr>
<tr>
<td>3.b. User assessment</td>
</tr>
<tr>
<td>Is the current system providing users the needed functionality and performance?</td>
</tr>
<tr>
<td>Summarise any feedback (review of help desk logs, surveys, focus groups etc)</td>
</tr>
<tr>
<td>4. Gap analysis</td>
</tr>
<tr>
<td>Identify the need for additional functionality/ or performance enhancements that can support the goals of the rating process</td>
</tr>
<tr>
<td>5. User analysis</td>
</tr>
<tr>
<td>Based on the user inputs, is the systems actual performance consistent with expectations. Has the system exceeded the expectations or not</td>
</tr>
</tbody>
</table>
6. Opportunities
Based on the gap, analysis, identify opportunities to improve the functionality and performance (efficiency and effectiveness) of the system.

| 7 Are there any near term (1-2 year) plans for the system |
Appendix E Overview of Rating Process—Swim Lane Diagram

<table>
<thead>
<tr>
<th>Source</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>University DA</td>
<td>Research Institution submits applications for rating</td>
</tr>
<tr>
<td></td>
<td>Receives Rating Results</td>
</tr>
<tr>
<td>Evaluation Centre</td>
<td>Appoints Panels and committees</td>
</tr>
<tr>
<td></td>
<td>Pre-Screens Application</td>
</tr>
<tr>
<td></td>
<td>Dispatches to SC</td>
</tr>
<tr>
<td></td>
<td>Receive Peer reports</td>
</tr>
<tr>
<td></td>
<td>Sets up Assessment Meetings</td>
</tr>
<tr>
<td></td>
<td>Selects Feedback and Communicate results</td>
</tr>
<tr>
<td>Specialist Committees</td>
<td>Screen Applications and Appoint reviewers</td>
</tr>
<tr>
<td></td>
<td>Assess reports and Recommend rating</td>
</tr>
<tr>
<td>Reviewers</td>
<td>Review Applications and write reports</td>
</tr>
<tr>
<td>Assessment Panels</td>
<td>Assess reports and make a decision on rating</td>
</tr>
<tr>
<td>Executive Evaluation</td>
<td>Assess A, P, no consensus</td>
</tr>
<tr>
<td>Committee</td>
<td></td>
</tr>
<tr>
<td>Appeals committee</td>
<td>Consider appeals</td>
</tr>
</tbody>
</table>

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### Appendix F Rating Categories of NRF Rating System

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Researchers who are unequivocally recognised by their peers as leading international scholars in their field for the high quality and impact of their recent research outputs.</td>
</tr>
<tr>
<td>B</td>
<td>Researchers who enjoy considerable international recognition by their peers for the high quality and impact of their recent research outputs.</td>
</tr>
</tbody>
</table>
| C        | Established researchers with a sustained recent record of productivity in the field who are recognised by their peers as having:  
  - produced a body of quality work, the core of which has coherence and attests to ongoing engagement with the field  
  - demonstrated the ability to conceptualise problems and apply research methods to investigating them. |
| P        | Young researchers (normally younger than 35 years of age), who have held the doctorate or equivalent qualification for less than five years at the time of application and who, on the basis of exceptional potential demonstrated in their published doctoral work and/or their research outputs in their early post-doctoral careers are considered likely to become future leaders in their field. |
| Y        | Young researchers (normally younger than 35 years of age), who have held the doctorate or equivalent qualification for less than five years at the time of application, and who are recognised as having the potential to establish themselves as researchers within a five-year period after evaluation, based on their performance and productivity as researchers during their doctoral studies and/or early post-doctoral careers. |
| L        | Persons (normally younger than 55 years) who were previously established as researchers or who previously demonstrated potential through their own research products, and who are considered capable of fully establishing or re-establishing themselves as researchers within a five-year period after evaluation. Candidates should be South African citizens or foreign nationals who have been resident in South Africa for five years during which time they have been unable for practical reasons to realise their potential as researchers. |
Candidates who are eligible in this category include:
- black researchers
- female researchers
- those employed in a higher education institution that lacked a research environment
- those who were previously established as researchers and have returned to a research environment.