1. INTRODUCTION

The system for the evaluation and rating of individual researchers was introduced by the Foundation for Research Development (FRD)* in 1984 to recognize the achievement of researchers and to support their research activities by way of funding. At the time the underlying objectives of this intervention were to

- channel funds to self-initiated research
- catalyse the development of a new generation of researchers
- try to counteract the brain drain.

2. BACKGROUND TO THE 2007 REVIEW OF THE NRF SYSTEM FOR THE EVALUATION AND RATING OF INDIVIDUAL RESEARCHERS

Higher Education South Africa (HESA) and the National Research Foundation (NRF) co-convened an in-depth review of the NRF evaluation and rating system of individual researchers in 2007 in response to one of the recommendations of the NRF Institutional Review in 2004. The 2004 review report includes various recommendations, one of which concerns the evaluation and rating of individual researchers and called for a review of "...the rating system, in terms of its fundamental purpose and utility...".

HESA and the NRF appointed a Review Steering Committee (RSC) in September 2006 to plan, oversee and guide the whole review process. The Committee members are:

- Prof Ahmed Bawa, Physics Department, Hunter College, City University of New York (formerly Deputy Vice-Chancellor (Research), University of KwaZulu-Natal)
- Prof Robin M Crewe, Vice-Principal, University of Pretoria in his capacity as President of the Academy of Science of South Africa
- Prof Cheryl de la Rey, Deputy Vice-Chancellor, University of Cape Town in her capacity as member of HESA’s Strategy Group on Research
- Dr Thulani Dlamini, Manager: CSIR National Laser Centre (replaced Dr Dave Walwyn, Group Research Manager, CSIR in August 2007)
- Prof Willemien du Plessis, North-West University (replaced Prof Charles Ngwena, University of the Free State in May 2007)
- Dr Andrew M Kaniki, Executive Director: Knowledge Management and Strategy, National Research Foundation
- Dr Duma Malaza, Chief Executive Officer, Higher Education South Africa (HESA)
- Prof G Loyiso Nongxwa, Vice-Chancellor, University of the Witwatersrand in his capacity as chair of HESA’s Strategy Group on Research (Chair of the Review Steering Committee)
- Prof Gansen Pillay, Director: Research Management and Development, Durban University of Technology

* The FRD ceased to exist in 1999 when its staff and activities were merged with those of the Centre for Science Development of the Human Sciences Research Council to form the National Research Foundation created by an Act of Parliament.
The RSC decided that the best approach would be to design an evidence-based review and commissioned the following studies (the names of the respective service providers are given in brackets):

2.1 A document-based historical review and analysis of the rating system for individual researchers at South African higher education institutions and museums since its inception in 1984 (Ms SC Krige and Ms P Morrell);

2.2 Mapping the formal and informal use of the rating system over time by various institutions (Ms CL Lombard);

2.3 The impact of the rating system within specific disciplines or fields of scholarship on the scholarly productivity of South African academics (Dr HC Marais);

2.4 A comparative study of other national granting agencies that use the evaluation of individuals as part of the process for awarding funding (Prof A Pouris);

2.5 A review of the processes used to manage the rating system in the past five years (Dr M Madikizela).

The respective briefs for the above studies are given in Appendix 1.

As stipulated in the terms of reference (ToR) for the review (see Appendix 2), members of the Review Steering Committee were tasked to make

"Recommendations …to Higher Education South Africa and the NRF regarding the future of the evaluation and rating system of individual researchers based on the findings reflected in the reports of the five individual studies…".

3. KEY FINDINGS AND RECOMMENDATIONS BY THE REVIEW STEERING COMMITTEE BASED ON THE REPORTS OF THE FIVE STUDIES COMMISSIONED

On the basis of the evidence and findings reflected in the reports of the five commissioned studies, the Review Steering Committee compiled its findings and recommendations as outlined below. The Chair of the RSC verbally presented the findings and recommendations of the RSC to members of the HESA Board (or their designated representatives), the NRF Executive and NRF management on 7 November 2007.

The RSC’s findings and recommendations should be considered in the following context.

In most systems supporting research, there are two kinds of funding, i.e. one to fund individuals for self-initiated research and the other to fund directed research activities. Generally, the funding to individuals for self-initiated research is a relatively small component of the total amount made available for research activities. The rating system had originally been devised to assist with the funding of self-initiated research but the NRF had, over time, placed increasing emphasis on a number of programmes to address deficiencies in the National System of Innovation (NSI) and to stimulate the development of a research culture at Higher Education Institutions (HEIs). With the decoupling of rating from funding, the credibility and applicability of the rating system declined. In the FRD context the rating system had been introduced to recognise the achievement of researchers and, by way of funding, to assist them to maintain their levels of excellence. The reasons for the rating intervention have been outlined in the introduction above (see Item 1) and the RSC acknowledged that these still prevail.
The other issue informing the recommendations by the RSC revolve around a discussion whether the NRF rating system should be applicable throughout the National System of Innovation (NSI). The NRF has a clear function i.e. that of an agency to promote and support research. Because of the credibility associated with the rating system other agencies such as the Agricultural Research Council and the CSIR make use of it to rate individual researchers. It should, however, be noted that the rating system was not designed for the NSI as a whole. If outside organisations wish to make use of the system, for example, for prestige considerations, rating and funding will again become de-linked as these organisations have their own funding imperatives which may or may not be coupled to the rating system. The rating system should therefore be confined to those activities of the NRF for which the rating system was intended.

3.1 Key findings of the Review Steering Committee based on the reports on the five studies commissioned

Note: For brevity, reference to the individual reports of the five studies is made by prefacing the respective report with the surname of the first author, e.g. Krige report refers to the report of study 2.1 above conducted by Ms Krige and Ms Morrell.

3.1.1 The rating system has endured over time but there has been divergence from its original conception, e.g., linkage of rating to funding, changed funding landscape (see Krige report), etc. Originally the rating system had been linked to funding but subsequently it had been de-linked. However, the de-linking of the rating and funding created a set of difficulties that affected the credibility of the rating system.

Interestingly, the rating system has become to be seen as an honorific system, i.e. a recognition of excellence.

3.1.2 The budget allocation to support the system of rating and funding was inadequate to allow for full implementation. Although there was a huge injection into the funding of self-initiated research in the mid 1980s under-funding from central government undermined the full development of the funding programmes associated with the rating system. There were also other funding problems such as, for example, an inability of universities to meet their end of the deal in terms of finance for C-rated, emerging and non-rated researchers, the continuing crisis with funding equipment, institutional change in a rapidly changing political climate, etc (see Krige report). The Pouris report also argues that the NRF grants allocated are of a sub-critical value.

3.1.3 The system of rating individual researchers is comparable to those used in New Zealand and Mexico (see Pouris report). The NRF rating system is therefore not unique in the world.

3.1.4 The rating system has a degree of credibility despite some criticism, scepticism and varied perceptions as reflected in all five reports. For example, on page 92 the Krige report states “The Committee undertaking this current comprehensive review of the rating system is in a position to consider the reasons why the system has both endured and developed such credibility outside the auspices of the NRF – as well as drawing consistent criticism.” The credibility has, however, remained as substantiated by the data given in the Marais report which indicates a positive relationship between rating and productivity and, moreover, a relationship between the level of rating and productivity, i.e. the higher the rating, the higher the productivity in terms of outputs.

Reviews of the rating system conducted in 1991, 1997 and 2000 had, generally speaking, been positive about the rating system and had highlighted certain issues to be addressed. In terms of the outcome of the review in 2005 reservations had
been expressed about the rating system. As indicated in the Krige report the 2005 review had been based on the “marshalling of opinions” whereas the previous reviews had considered opinions as well as interrogated data. During the period covered by the 2004 review, the rating became de-linked from funding which also had a major impact on perceptions about the system.

3.1.5 **The NRF is ambivalent about its own rating system and its use within the NRF** (see Lombard report). Initially the rating system had primarily been used for funding research. Subsequently funding and rating had been de-linked which meant that no funds were automatically attached to ratings. Some of the major funding programmes run by the NRF even ignored ratings. The Lombard report indicates that the NRF Research Facilities do not appear to make use of the rating system at any formal level. According to the Lombard study the de-linking of funding and rating resulted in a decreasing incentive for researchers to become rated. The NRF Board and the NRF Executive therefore need to make a clear statement regarding the value of the NRF rating system to the organisation.

3.1.6 **The current categories are regarded as being too complex and their designation (e.g. A, B, C, etc) as demeaning to categories lower than A.** Consideration could, for example, be given to referring to “international leaders”, “established researchers”, etc rather than to categories A, B and C, etc.

3.1.7 **Universities are using the rating system as a management tool** (for promotions, retentions, remuneration, awards, research funding etc) **to varying degrees** (see Krige, Lombard and Marais reports). As reflected in the Lombard report universities are the most extensive users of the rating system although the number of researchers that subject themselves to rating as a percentage of the total number of researchers is fairly small. According to the findings of the Lombard report, especially researchers with lower ratings do not seem to reapply for rating as they do not see the benefits of being rated. It is also reported that the science councils, including the Medical Research Council and other statutory bodies do not make much use of the rating system. Industry was using the rating system to a limited extent as a measure of the quality of possible contractees whereas Government did not make use of it. However, considerable use had been made of the rating system by the universities with intended and unintended consequences. Differing views about the uses and usefulness of the rating system were expressed in the various disciplines.

The use of ratings by universities for management purposes is an area of contestation. Some staff members who are opposed to the rating system for their own reasons contend that staff members who do not have a rating are disadvantaged and that staff members with a rating are given preferential treatment by the university. On the other hand, the criteria used by universities for promoting their staff, are similar to the criteria considered in the rating process.

3.1.8 **Evidence suggests that the rating system has had a positive effect on the careers of individual researchers in institutions which use it** (see Marais report) although this is contested in some circles. It is considered a benefit that researchers applying for rating are required to reflect on where they are in terms of their research and what research they intend to undertake in the future. In the absence of another system, the NRF rating system also provides a system of affirmation for researchers. All academic systems have ways and means of awarding recognition to people who excel in their fields, which are often used by universities to rank staff. In the USA, for example, one of the most important elements used to rank institutions is linked to the number of staff who are members of the National Academies of Science. In South Africa, the NRF rating has become a proxy for the kind of recognition which is given through national academies in other systems.
Evidence indicates that the number of rated researchers at universities has become one of the indicators of excellence of universities (see Lombard report).

Rating is often used as a benchmarking tool (see Lombard and Marais reports).

There is not sufficient alignment between the rating and the Department of Education (DoE) publication subsidy systems. Different elements of these systems address different objectives but they should not be contradictory to each other. The DoE tries to steer productivity by measuring the annual production of certain publications. However, as indicated in the Marais report, there is a problem regarding both the quality and the quantity of publications produced.

The process of evaluation and rating is considered mature, but complex and time consuming (see Madikizela and Marais reports). It could be argued that the rating system increased in complexity over the years as a result of the NRF's/FRD's collaborative interaction with the HEIs to develop the system as well as its responsivenss to requests and feedback from the academic community. It is unlikely that it will be possible to shorten the process in view of the complexity of the process needed to provide a credible outcome.

The acceptance levels of the rating system among the natural scientists are higher than among the social scientists (see Lombard report). Similar concerns that were raised by the natural scientists when the system had originally been implemented are now being raised by the social scientists.

Evidence indicates that there is no disjuncture between research productivity and the rating of researchers (see Marais report).

The system poses challenges for the evaluation of generalists, and those working in multidisciplinary and new interdisciplinary research areas (see Marais report).

Recommendations of the Review Steering Committee (RSC) based on the reports of the five studies commissioned

Based on the evidence, there is no reason to discontinue the system for the evaluation and rating of individual researchers. In the view of the RSC the rating system should therefore be retained but not in its current form where rating is not linked to funding. This recommendation is made for two reasons supported by data in the reports, i.e. firstly, that the rating system is being used by the higher education institutions (HEIs) and, secondly, that the rating system has a high degree of credibility among the HEIs.

The NRF rating system should only be used for the purposes intended, i.e. the rating of individual performance to determine the financial support for self-initiated research to be given to individual researchers.

The rating system does not reveal anything about the rating of teams, an individual's ability to manage a team, or how to conduct or stimulate multi-purpose research. The NRF should therefore develop new appropriate tools to assess teams, innovation, multi-disciplinary work, management capability, etc.

The NRF Board and Executive must make a clear statement regarding the purpose and utility of the NRF rating system within its own programmes. In other words it will be important for the NRF to define its rating system as well as its purpose and to decide how to integrate it with its other activities, where applicable.

The NRF should take full responsibility for disseminating accurate information about how the NRF rating system works. The RSC considers this
recommendation of a lesser order, but still considers it important in order to address some of the misperceptions regarding its operation (see the Lombard report).

3.2.5 **Rating should be directly linked to funding.** The current major criticism of the rating system is the fact that it is not directly linked to NRF funding and that a rating is not amongst the eligibility criteria for funding. According to the Pouris report every system in the world links a peer review rating system, regardless of the type of system, to the allocation of resources. In the case of the NRF the rating and funding had been de-linked for political reasons at the time which had led to the system becoming eroded.

3.2.6 **The NRF, in consultation with its stakeholders, should address the criticisms regarding various aspects of the rating system, e.g., rating categories, simplification of processes, transparency, procedural aspects, etc.** (see Lombard, Madikizela and Krige reports). Care should be taken that possible efforts to shorten the turn-around time between the submission of the application for evaluation and rating and receipt of the outcome do not compromise the quality of the outcome.

3.2.7 **The NRF and HESA should lobby for sufficient levels of funding to sustain the rating system.** Improved levels of funding to the NRF to fulfil its agency function would also facilitate giving credibility to the rating system.

3.2.8 It is recommended that **interactions between the DST, DoE, HESA, NRF, etc. with respect to the recognition and reward of research outputs take place** to ensure that incentive systems are aligned.

3.2.9 The NRF should place the **reports that have been accepted by the Review Steering Committee in the public domain.**