AN HISTORICAL REVIEW AND ANALYSIS OF
THE NRF RATING SYSTEM

1983-2005

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THE BRIEF

Historical review and analysis of the rating system for individual researchers at South African higher education institutions and museums since its inception in 1984 (in terms of the review of the rating system)

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. The analysis should review its introduction and implementation, reflecting on issues related to its fundamental purpose and utility over the years.

The review should include an analysis of the findings of the previous reviews on the rating system and reflect on the implementation of the recommendations made in the reviews.

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<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ANC</td>
<td>African National Congress</td>
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<tr>
<td>COSATU</td>
<td>Congress of South African Trade Unions</td>
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<td>CSD</td>
<td>Centre for Social Development</td>
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<td>CSIR</td>
<td>Council for Scientific and Industrial Research</td>
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<td>CSP</td>
<td>Co-operative Scientific Programmes</td>
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<td>CUP</td>
<td>Committee of University Principals</td>
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<td>DNE</td>
<td>Department of National Education</td>
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<td>EEC</td>
<td>Executive Evaluation Committee</td>
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<td>FRD</td>
<td>Foundation for Research Development</td>
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<td>HFBU</td>
<td>Historically Black Universities</td>
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<td>HDI</td>
<td>Historically disadvantaged individuals</td>
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<td>HSRC</td>
<td>Human Sciences Research Council</td>
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<td>HWU</td>
<td>Historically white universities</td>
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<td>IDRC</td>
<td>International Development Research Centre</td>
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<td>MCDM</td>
<td>Multi-Criteria Decision Making (tool)</td>
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<td>MRSP</td>
<td>Main Research Support Programme</td>
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<td>NCP</td>
<td>National Co-operative Programmes</td>
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<td>NRF</td>
<td>National Research Foundation</td>
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<td>NSE</td>
<td>Natural Sciences and Engineering</td>
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<td>NSI</td>
<td>National System of Innovation</td>
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<td>RAU</td>
<td>Rand Afrikaans Universiteit</td>
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<td>R&amp;D</td>
<td>Research and Development</td>
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<td>RDP</td>
<td>Research Development Programme</td>
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<td>RDP</td>
<td>Reconstruction and Development Programme</td>
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<td>RGD</td>
<td>Research Grants Division</td>
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<td>RISA</td>
<td>Research and Innovation Support and Advancement</td>
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<td>RSA</td>
<td>Research Support Agency</td>
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<td>SANCO</td>
<td>South African National Civic Organisation</td>
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<tr>
<td>S&amp;T</td>
<td>Science and technology</td>
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<tr>
<td>SCI</td>
<td>Science Citation Index</td>
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<td>SET</td>
<td>Science, engineering and technology</td>
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<td>SETI</td>
<td>Science, Engineering And Technology Institutions</td>
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<td>SSH</td>
<td>Social sciences and humanities</td>
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<tr>
<td>THRIP</td>
<td>Technology and Human Resources for Industry Programme</td>
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<td>UCT</td>
<td>University of Cape Town</td>
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INTRODUCTION

The “rating system” used by the NRF for the “track-record” evaluation of researchers has been extended to all disciplines, but is the subject of intense contestation and debate in the higher education sector, varying from advocacy by institutions developing a research profile (as an indicator of progress, for example) to active opposition and doubts on the part of serious scholars in the system.\(^1\)

This report considers the rating system for individual researchers at South African higher education institutions and museums from a historical and chronological perspective. The report foregrounds the reviews/evaluations made of the programmes and of the CSIR/FRD/NRF itself to mark and highlight particular findings, and relates these findings to particular issues and processes which characterised the system over time. While both the parent institutions and research programmes have changed during the last 23 years, the rating system has continued to be a constant underpinning of the evaluation of both researchers and projects. This has been the case in spite of serious criticism as well as praise.

The following reviews/evaluations are highlighted in this report:


- **Evaluation of the programmes and activities of the former CSD [Centre for Social Development] and FRD [Foundation for Research Development]: The Report of the Review Panel aimed at stimulating and informing the discussions regarding the way forward for the NRF, April 2000.**

- **Institutional Review of the National Research Foundation Report, February 2005.**

Use has also been made of internal reports and guidelines on the implementation and ongoing functioning of the programmes and the rating system.

The first part of this report reviews the genesis of the rating system between 1980 and 1987, focusing on its resultant underlying principles, form and purpose. It places this account in a layered context, which outlines trends at international, national and institutional levels which informed the development of the system.

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The second part of the review continues to contextualise the implementation of the system, and addresses the following questions:

- What did the reviews/evaluations of the system say about the implementation and ‘utility’ of the system? Did their evaluations focus on the implementation of, rather than the principles underlying, the system itself?

- What changes and continuities can be charted in the rating system?

- How responsive was the Foundation for Research Development (FRD)/National Research Foundation (NRF) to review and evaluation? How far were changes and continuities in NRF policies direct responses to the observations and recommendations of the formal reviews? What other factors may have been involved?

**PART ONE: GENESIS**

1.1. The political economy of scientific research in the global and national context and changes in the CSIR from the late 1960s to 1980

Until 1997, reviews and reports on the research programmes and the rating system contain almost no references to either international or local political, social and economic contexts. This, in spite of the fact that scientific research was harnessed to bolster the apartheid system, and was affected by sanctions and later by academic boycotts, which included selective exclusion from international science conferences, forums and teams. However, as most countries adhered to the principle of the International Council of Scientific Unions (ICSU) regarding the free circulation of scientists, researchers and academics from South Africa were able to attend conferences and meet with colleagues internationally to some degree. From the late 1990s, for obvious reasons, contextual factors were central to the rationale behind the analyses, conclusions and recommendations of reviews.

What follows is an account of the context in which the Council for Scientific and Industrial Research (CSIR) was reformed and the rating system introduced.

The history of structured support for research in universities goes back to the Second World War which stimulated high-level research in applied areas for the military. In addition research in secondary industry increased, promoting greater sophistication and

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2 ‘Many of our to researchers moved with comparative ease to conferences and interacted freely with colleagues across the globe, as most countries adhered to the ICSU principle of free circulation of scientists; this more so regarding the natural sciences and engineering and less so the social sciences and humanities.’ Written comment by Dr Von Gruenewaldt, Vice-President of NRF, 15 August 2007.
economic self-sufficiency. In 1942, General Jan Smuts began developing a vision for a national research body in South Africa - and in 1945 Parliament passed an Act to establish the CSIR.

Dr Basil Schonland was CSIR’s first President. Fostering research in universities through grants and bursaries was an item on the agenda of the first council meeting. When Dr Stefan Meiring Naudé became President of the CSIR in 1952, he introduced specialised university committees to evaluate applications and allocate funds.³

International pressure was also important twenty years later, but for very different reasons. By the late 1960s, South Africa’s economy was threatened by the effects of growing isolation and economic sanctions as a result of its apartheid policies. This was aggravated by galloping inflation. In response to this combination of factors, the government started advocating import replacement, export promotion and greater national self-sufficiency. Its promotion of the use of locally available raw materials in the manufacture of commodities to compete on the open market created a greater awareness of the value of technology and highlighted its relationship with the economy.⁴

After 1971, Dr Meiring Naudé’s successor, Dr Brink, scrutinised the CSIR’s activities in terms of its mandate and in relation to government demands. He initiated a number of far-reaching programmes to improve the CSIR’s support of industry, with an eye to solving problems of critical national importance. In 1975, Dr Brink established the National Scientific Programmes, later renamed the Co-operative Scientific Programmes (CSP), around the existing activities of the CSIR. The group's role was to identify and define problems peculiar to South Africa which might require the combined skills of more than one organisation. This initiative promoted joint development projects between industry and the science councils, state departments and museums and universities.⁵

In spite of Dr Brink’s initiatives, there were deep-seated problems which had begun to emerge internally in the CSIR’s approach to research during the 1960s and 1970s. While the CSIR encouraged an atmosphere of free and open research, its scientists became less and less in touch with the practical realities in South Africa and in the international scientific debates more broadly. It was also hamstrung by increasing government interference and by the encroachment of civil service mentality. The CSIR had moved

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away from its original brief of doing research in support of industry, and was not responsive to demands from either the private or public sector.

These practical realities had to do with trends in the global scientific arena, towards more applied and practical research. Attendant on this approach was the need for a much more efficient and well-managed organisation and the development of individuals able to respond appropriately.

‘The endless frontier concept had come to an end and questions arose about how to maintain a creative environment while working on more practical things. Scientists who were interested in finding out the reasons for success in a changing environment, for example, ... Japan's industrial success started reaching more widely than specialist scientific literature. Industrial research required management, human and business skills.’ ⁶

In this context, the worldwide debate on the value of science focusing on an increased emphasis on implementation had not reached the CSIR as a result of the increasing isolation of South Africa from the global scientific community, and the CSIR’s own internal culture. The CSIR was lagging behind. The establishment of the Advisory Committee for the Development of Research and Industry by the Council was an attempt in the 1970s to achieve a better balance.⁷

The CSIR’s various programmes for the support of university research grants were administered by Research Grants Division (RGD). Although the RGD reported directly to the CSIR Executive on all matters concerning grants, it fell under the Information Research Services and was called the University Research Division for a period of 10 years in the 1960s and early 1970s. After this it was attached to the CSIR’s Administrative Services Department.⁸

1.2. Rethinking research funding under Dr Chris Garbers

By May 1980, when Dr Chris Garbers took over the reins from Dr Brink, difficult external factors made the need for change more apparent. These included increasing international isolation, persistent inflation, worldwide recession, the aftermath of the energy crisis, the weakening price of gold and the onset of severe drought. After 1976, ongoing internal resistance to apartheid and increasing South African military and other involvement in cross-border incursions and wars, made for political instability and violence. In 1983, the country experienced its first State of Emergency since 1960.

The one area of applied research in which scientists had been involved was that of

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⁷ Ibid, p 33 to 36.
defence - largely done under contract to the South African Defence Force or Armscor and its affiliates. Researchers were exposed to the discipline of managing projects, meeting deadlines and working within budgetary constraints. There were also government cutbacks, particularly to the parliamentary grant to the CSIR.

Over the next seven years, the CSIR itself went through a process of major overhaul to become a market-driven organisation. Significant influences were the 1979 findings of the Riekert Commission and Wiehahn Commission\(^9\) (which represented attempts to reform the labour-related aspects of the apartheid system) and the 1983 Klue Report which preceded the White Paper on an Industrial Development Strategy (1985)\(^10\).

The introduction of the ‘new look’ funding and rating system must be seen in this context. The rating system was also important in affecting the changes in the CSIR itself. Interestingly, in her book *Passage to Progress. The CSIR’s Journey of Change. 1945 – 1995*, Nicolene Basson cites, as a major factor in the complete overhaul of the CSIR, the 1983 report of Prof Jack de Wet on national research funding for the sciences and engineering.\(^11\) Prof de Wet’s influence is still felt today through the role he went on to play in founding the rating system.

### 1.3. The rationale for ‘a new look’

In 1987, Dr Reinhardt Arndt and Dr Garbers recalled that

> ‘In the light of the worsening international relationships with South Africa there was a need for the expansion of our industrial base … and the publication of the White Paper on the Strategy for Industrial Development led to the need for changes in organisational culture of the CSIR strengthening corporate behaviour and a market orientated direction. … [T]he climate which relates to funding for research strongly was moving in the direction of supporting practical useful development.’ \(^12\)

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\(^9\) The Riekert Commission had recommended the limited easing of restrictions on the mobility of urban workers, enforced by pass laws. The Wiehahn Commission of Enquiry into labour legislation recommended the legalisation of African trade unions. This led to the government amending the Industrial Conciliation Act to put these recommendations into effect.

\(^10\) ‘The Klue investigation was commissioned in 1977 to establish productivity in both the private and public sectors, and areas in which South African industry could compete. The Klue report, completed in 1983, made recommendations that strengthened the hand of those researchers at the CSIR devoted to research of more practical relevance to the country’s economy. The subsequent White Paper mentioned the CSIR’s pivotal role in transferring technology to both the public and private sectors but did not spell out how the should be accomplished’. Basson, N (1996) *Passage to Progress*, p 41.


\(^12\) Arndt, R R & Garbers, CF (1987) ‘Developments regarding the CSIR’s Mandate for University Research Support’, Meeting with the Committee of University Principals, Cape Town, 22 January 1987, p 28.
This climate had put pressure on funding for ‘own choice research’.\textsuperscript{13} They identified an issue which became central to the rating system, namely the development and monitoring of skilled high-level researchers. There was a serious problem of losing highly trained people who left to work overseas; there were difficulties in luring scientists from abroad, while there was the enormous potential growth of the (white) school and university population.\textsuperscript{14}

Dr Garbers’ particular concern was the unequal levels of funding for the Co-operative Scientific Programmes compared with that for universities and museums. In a recent conversation, Dr Garbers recalled that

‘the CSIR also had the responsibility for funding own initiated research within the universities from trust funds, specifically reserved for universities and museums. In 1980, the funding of research in the technikons also became the responsibility of the CSIR.’\textsuperscript{15}

However, the success of the CSP and a high level of funding for this directed research raised serious concerns about funding for ‘own initiated research’. The ideal was to create a climate where both own initiated research and directed research through the CSP could thrive.\textsuperscript{16} Dr Garbers recalled that, while he had been concerned about the inadequacy of funding for university and museum-based research, his particular focus had been the position of ‘outstanding researchers’ and the paucity of postgraduate bursaries to nurture brilliant young students.\textsuperscript{17}

To put the matter of national research funding on a more sound footing, Dr Garbers and Dr Arndt co-opted Prof de Wet, retired Dean of Science at the University of Cape Town (UCT), to ‘investigate options for research funding in higher education and to advise the CSIR in indicating the role the Research Grants Division (RGD) could play to satisfy these research funding needs’.\textsuperscript{18}

Dr Garbers remarked that the Council was fortunate in being able to obtain the services of Prof de Wet as the Research Grants Advisor to the Executive, as he was the best

\textsuperscript{13}‘Oor fondse vir eie keuse navorsing sal jaloers gewaak word’. Ibid, p 29.

\textsuperscript{14}Ibid, p 29.

\textsuperscript{15}Personal conversation with Dr Chris Garbers, 17 January 2007, National Research Foundation, Pretoria.

\textsuperscript{16}Personal conversation with Dr Chris Garbers, 17 January 2007, National Research Foundation, Pretoria.


person the CSIR could have chosen. He had years of experience and an intimate knowledge of the problems which universities had to deal with.\textsuperscript{19}

Since his return to South Africa from abroad in 1971, Prof de Wet had been critical of the system of allocation of research funding and of the small amounts available to good researchers who left the country to go elsewhere where funding was more readily available.\textsuperscript{20}

1.4. Overview of the process of conception and implementation of rating system\textsuperscript{21}

Prof de Wet worked very closely with Dr Arndt, with the staff of the RGD and with a wide range of decision-makers who were concerned with the funding of university research.

The following strategic, high profile people were consulted and briefed on an ongoing basis: the Minister of National Education, Dr Gerrit van N Viljoen; the head of Science Planning of the Department of Constitutional Development and Planning, Dr C G Coetzee; Prof H. S. Steyn of the Universities Advisory Council; the chairman of the Committee of University Principals, Professor W. L. Mouton, as well as the chairman of the Scientific Advisory Council of the Prime Minister, Dr J W L de Villiers.

After discussions between Prof de Wet and the CSIR Executive, Prof de Wet and Dr Arndt made a series of visits during February and March 1983 to vice-chancellors and personnel of the ten universities most active in research. Draft documents, containing the framework of Prof de Wet’s ideas, were sent to university authorities for their approval prior to the rounds of discussions.\textsuperscript{22} During these visits, Prof de Wet’s new concepts for research funding were discussed in depth, after which comments and suggestions were incorporated into the documentation. All further drafts of the document were also sent to universities on a regular basis for their comments.\textsuperscript{23}


\textsuperscript{22}For example, a first document, ‘Points for discussion during meeting with Prof J. S. de Wet, adviser to the Executive of the CSIR, on university research grants matters,’ was sent to the universities in February 1983.

\textsuperscript{23}Van Vuuren, A (1987) ‘Introduction’ in the Collection De Wet, J S (1987) \textit{Investigation unto the award system for research support in the natural sciences and engineering at universities, museums and}
The draft report - A new look at the role of the Research Grants Division in the promotion of research in the South African Universities (sic) - was sent to universities for their comments on 8 April 1983. Where possible, their suggestions were incorporated in the final document which was submitted to the Executive Committee of the CSIR Council on 9 May 1983.

The CSIR Council accepted in principle the four major elements of the report:

- awards should be based on the merits of the applicant as a proven research worker;
- the RGD should be responsible for the payment of the full costs of research programmes of selected research workers;
- research units currently supported by the RGD should continue to receive support under the new scheme; and
- capital equipment requirements of university researchers should receive urgent attention.

In May and June of 1983, Prof de Wet and Dr Arndt visited western Europe, the USA and Canada to investigate university research funding systems. Two months later, in August 1983, Prof de Wet submitted the foundational report A framework for the promotion of free research in universities and an integrated research effort in the areas of national concern between the universities, CSIR institutes and other bodies - attached to which was ‘An addendum to a framework etc.(sic)’ This also contained his suggestions for one CSIR body responsible for the funding of external research, which should include the functions of the RGD and the CSP. The intended merger was announced at a meeting held on 6 September 1983 attended by the CSIR Executive and the managers of the CSP. 24

Prof de Wet based the first draft of the CSIR Research Grants Division’s Awards Guide on this report which was sent to the universities in August 1983 and again in December 1983. Comments were incorporated in the Proposed Research Grants Division Awards Guide, November 1983, which was submitted to the CSIR Executive in January 1984.

The CSIR Council ratified the Executive’s decision to combine the functions of the RGD and CSP into the FRD from April 1984. Dr Arndt was given executive responsibility for the FRD. The FRD revised the RGD Awards Guide as a result of which the Main Research Support Programme Guide, 1 April 1984 was distributed to the universities.


While the CSP programmes continued operating within the FRD as National Co-operative Programmes (NCP), a new system for research support was phased in during the months of September and October 1984. The Main Research Support Programme (MRSP) was the culmination of in-depth discussions with university museum authorities and research leaders in grant-giving bodies locally as well as abroad. *A Report on the Implementation of the Main Research Support Programme September - October 1984* was submitted and accepted by the MRSP Advisory Committee in November 1984 and an updated report was circulated in 1985.

In November the same year, Prof de Wet handed the CSIR President a revised version of *A new look at the Foundation for Research Development* – followed in May 1986 by the final report, after deliberations with Prof. Nabarro of the University of Witwatersrand.

Prof de Wet included in his brief the problem of finding research equipment at universities and museums and produced six documents addressing this problem.25

It is interesting that Denys Kingwill, when writing about the first 40 years of the CSIR, suggested that there were continuities between Prof de Wet’s proposals and existing systems and criteria for research support:

‘Many new proposals were put forward but all of them were based on retention of the established policy that the main criterion for support be the calibre of the research worker, as reflected in the ability to produce good research results’. (Own emphasis)26

This issue requires further research.

1.5. ‘The good researcher’: Conceptualising the rating system - May 1983

‘[S]elf initiated or curiosity research is what people do to satisfy their own curiosity. It is what turns them on and for good people to do what turns them on is both highly satisfying for the researcher and often the most productive use of a good man’s (sic) time. What they do often seems quite useless in the eyes of others until, often very much later, the seminal nature of their work becomes abundantly clear to everybody. The moral is to support and encourage the good researcher to do his own thing.’27


Prof de Wet’s ideas on the autonomy of the individual ‘good researcher’ appear quite romantic, and could even be seen as a remnant of the ‘endless frontier’ style of research, sitting uneasily with new priorities outlined by the CSIR and even by Dr Garbers himself. However, as will be argued, he posited that this autonomy in both choice and methodology would establish world-class researchers who could and would meet the needs of national interest, under the umbrella of one autonomous research funding body.

In his first major document, Prof de Wet outlined a philosophy for the promotion of research in South African universities. Here he stated a position he maintained throughout his appointment, namely that ‘a good researcher is one who is evaluated by his (sic) peers, not on proposed projects but on proven ability’, on a selective non-uniform basis. He felt his ideas were in harmony with the changes being made by the Department of Education, where subsidies for tertiary institutions were calculated as overall statistics on student numbers in general:

‘If research support is to be accorded to proven researchers in the main, it follows that since the distribution of proven researchers in the overall university system in the country is not uniform, support for individual researchers needs be done on a selective, and certainly non-uniform basis. This is something easily done by an outside agency that cannot be done by a subsidy system based on an overall statistic for each university.’

In terms of the relationship between the RGD and university funding, he proposed that

‘[t]he new system will therefore be structured in such a way as to make for provision from RGD for the needs of (i) the proven researchers in the universities of high quality and (ii) brilliant young members of University staff [who are] not yet proven researchers but who, on the basis of their academic records, should be given every opportunity for a limited period to become active and productive researchers. The researchers, not quite of the high quality envisaged in (i) above, will get basic support from RGD and for funding of particular projects, but with the expectation that other projects would be funded by the University. The University will have the responsibility to those members of the University staff who are not provided for in the above.’

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29 Ibid. p 11
30 Ibid. p11
1.5.1. Categories for awards

Prof de Wet’s initial ideas included categories for awards for proven researchers based on peer review by researchers in the field of knowledge of acknowledged standing and objectivity. Prof de Wet worked with three categories: A, B and C.

Category A persons would be ‘those researchers who by the very highest international standards have established for themselves recognized positions in the international community of workers (sic) in the fields as one of themselves - a member of the club’. Prof de Wet emphasised their importance as being possible heads of centres of excellence. His concern for building research capacity through excellent researchers was also evident in category B.

Category B would include researchers of considerable distinction around whom a team of workers and graduate students in training could be built, able to make a significant contribution to research in South Africa.

Category C would include proven researchers who had not made it into the above categories, including ‘younger men (sic) whose talents have not yet been developed to the full’. Category C researchers should associate themselves as far as possible with category A and B researchers and thereby attract project funding.

Prof de Wet also put forward a scheme intended for young members of staff who were holders of PhDs of no more than three years’ standing; who had excellent academic records and had started doing research but had not yet become fully established as independent researchers. This category later became the P category (denoting President’s awardees).

1.5.2. The differentiated support staff package for ‘proven researchers’ – A, B and categories

The funding package associated with ratings A and B would be designed to give the researcher enough support to be able to ‘use his research talent to the full for a period of five years initially, renewable if his (sic) performance was satisfactory’. The programme would be based on free choice research ‘without any regard for the research programmes he will undertake’. This included a quota of research studentships at Masters and doctoral levels.

Prof de Wet noted that it would be unlikely that proven researchers in Category C would get anything other than ‘basic support’ which he defined as a quota of studentships plus funds for short-term assistance. The support packages would be granted for five years, and succeeding five-year periods if renewed, subject to a thorough and strict review of

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31 Ibid. pp 22-25
what had been achieved. The package of support might be reduced or discontinued if
the researcher had not lived up to what they had promised. A researcher who achieved
more than what was initially promised would continue to get support and might even be
eligible for higher levels of support.33

Prof de Wet noted that a solid component of training graduate students of quality in
research was an integrated and essential component of all this activity.

1.5.3. Procedures for evaluation

Prof de Wet outlined a procedure for the evaluation, and for the subsequent
recommendation, of ratings and awards. These structures and procedures comprised
the following:

- the identification of relevant field or sub-fields;
- the creation of a small selection committee in the relevant field consisting of the
  member of the Executive at the head of the RGD, plus three senior researchers of
  acknowledged standing and objectivity in the field and who were known for their
  high standards – one of whom would be the chair of the committee;
- the consideration by the committee of the referees’ reports and the material
  submitted by candidates’;
- the invitation to world leaders in the field to also assess the applicants;
- recommendations made by the committee about the rating status to be accorded
  to the applicant and the staff support package to be granted;
- visits to A or B candidates at their universities; and
- the receipt by a main awards committee – consisting of the Executive head of the
  RGD and the chairpeople of all the discipline committees – of the recommendations
  of the various discipline committees and the production of a consolidated
  recommendation to go to the CSIR Executive for approval.

It is clear that Prof de Wet’s basic outline of a system of peer review, expert selection
committees and awards committees, by which candidate would be assigned to a rating
category, continues to underpin the rating system to the present day.

33 Ibid p 23.
1.6. The influence of international models

Prior to Prof de Wet and Dr Arndt’s visit to research institutes in Europe, the UK, the US and Canada in May and June of 1983, Prof de Wet had already thought carefully about the issue of person-based versus project-based research in conjunction with peer evaluation. A reading of their report gives the distinct impression that they largely looked for confirmation of their own ideas, particularly in this area. Certain models in the United States and Canada were attractive, as they were based on person rather than project support.

In the conclusion to their report, Prof de Wet and Dr Arndt maintained that there were two central issues which had emerged: project-based support versus person-based support; and mechanisms for supporting research in the national interest. They argued that ‘there is a clearly discernible movement away from project-based support to person-based support’. Even where the project itself was the primary object of support, good researchers within the project were given freedom to go beyond the boundaries of their original project; and within the various science councils, people were not committed to the project-based support, even if they were implementing it.

Their report also found a way of solving the apparent tension between free research and research in the national interest, or what de Wet had earlier termed ‘directed research’. (Prof de Wet used the terms ‘free research’, ‘own choice research’ ‘curiosity-based research’ and ‘self-initiated research’ interchangeably. Free research was to be free in both choice of area/problem and methodology as far as possible.)

The report argued that research in the national interest could come out of work done by gifted individual researchers, who had been funded from normal research grants. Also, within research programmes in the national interest, good researchers should be able to work as freely as possible, without being managed or interfered with. In this way, projects related to the national interest would get the best possible input from talented researchers.

The report highlighted other areas which came to characterise the rating system. The programmes for the development of cadres of young researchers associated with talented individuals were noted in each institution visited. This ‘capacity building’ was an enduring concern, which was built into the grant system as it evolved.

*There was surprisingly little in their report about the nature of evaluation systems, peer review systems or about rating criteria, however. For each country visited, Prof de Wet

and Dr Arndt noted the use of peer review systems, but paid little attention to how they worked.

In addition, it is clear that Prof de Wet was also working towards the idea that it was impossible to separate the promotion of free research, conducted by a world-class hierarchy of rated well-funded researchers, from the creation of a single autonomous body to control research funding.

1.7. Refining the definition of research in the context of the relationship between the Research Grants Division (RGD) and the Co-operative Scientific Programmes (CSP)

Prof de Wet noted that the CSIR administered a trust fund specially voted by the Treasury for the promotion of research in universities and museums and argued that it should be concerned with what he called ‘self-initiated research’ only.

While noting that the CSP was concerned with promoting research into topics of national concern, he argued that there should be parity or near parity between the ways in which research in universities was supported by the two divisions - the RGD and the CSP. In addition, de Wet wanted his system of evaluating researchers in the RGD to be applied to researchers in the CSP.

In the August 1983, in Framework Document for the Promotion of Free Research (own emphasis), de Wet provided a set of more elaborated definitions of kinds of research.35

‘Free Research: meant research which is funded without reference to the subject matter of the research... Free research would normally be self-initiated but could have been initiated by participation in some stimulated research or goal-oriented programme and then had been continued by the free choice of the individual.

‘Stimulated Research in New Areas: research which is promoted in order to fill gaps in existing fields of research or to promote research in developing new fields.

‘Goal-Oriented Research: this is research where the aim is still good research, but where, as well as a specified field of research, there is an additional objective outside the research itself which is to be achieved.

'Commissioned Research: this is research which is done to obtain information which is immediately pertinent or relevant to other research.’

It seems that after he produced a draft of this document, de Wet produced an addendum on a further category of research - namely ‘Directed Research’ – following an exchange with members of the CSP and their response to his framework (above). In this addendum, Prof de Wet launched a diatribe against the CSIR, which gives us insight into the politics of research in and outside the CSIR at the time. He noted:

‘Directed Research is done when the researcher is steered by an outside person or body; when what is to do and how it is to be done is the subject not of advice or comment from outside but to actual direction from outside. This is in sharp contradistinction to “goal-oriented research”; here the research has been clearly identified, all which is hoped will be attained; the researcher has really accepted the goal and the need to do research; but the freedom to use whatever means and approaches he chooses... [these are] matters for his own judgement and his judgement alone.

.... It is noteworthy that nowhere in our recent tour did we find a single agency funding research in universities which did not accept the principle that, in so far as University researchers are funded to undertake research in the areas of national concern, the basis on which the research should be done is to fund “goal-orientated” research and not “directed” research.’

He said that researchers in the CSP carried out ‘essentially free research but that is despite the system and not because of it’. He deplored what he saw as the CSP steering university researchers’ research:

‘I believe that the CSP approach is completely wrong and militate strongly against getting anything like the best return for the not inconsiderable sum spent annually by the CSP’.

Prof de Wet also argued that free research was extremely important from the point of view of the training of students in research.

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36 This research is characterised by the fact that existing no methodology or relatively slight modifications thereof is all that is needed, plus a foreseeable amount of time and the effort of one or more trained workers in order to achieve the desired information; Ibid, p 37.

37 This addendum was added to the document ‘A framework for the promotion of free research in universities and integrated research effort the areas of national concern between the universities CSIR institutes and other bodies, 23 August 1983’, p 44.
1.8. The founding of the Foundation for Research Development (FRD) and the Main Research Support Programme (MRSP)

Prof de Wet used his arguments in this addendum to bolster the argument for one research funding agency and substantial changes in the CSP. He strongly put forward a case for all research including the CSP to fall under the RGD, or an enlarged version of the RGD. He concluded in capital letters:

‘THERE IS NO CASE WHATSOEVER FOR SEPARATING THE FUNDING OF RESEARCH IN UNIVERSITIES BY HAVING TWO AGENCIES ADMINISTERING FUNDING IN SEparate COMPARTMENTS.’ 38

As result of Prof de Wet’s recommendations, the Main Research Support Programme (MRSP) was initiated and in April 1984, the MRSP and the CSP were combined to form the CSIR Foundation for Research Development (FRD), headed by Dr Reinhardt and Dr Arndt. The main aims of the MRSP were as follows:

‘to promote ‘own choice’ research at universities and museums as well as the training of research students. Implicit in a support programme in which research grants will be allocated solely on the merit of applicants as researchers, is the absence of favourite fields of research. Researchers are free to choose their own fields of research and to pursue research in the way they think best. The MRSP aims at the support of ‘own choice’, in the belief that the best climate for good research is one in which researchers decide on their own research preferences.’ 39

The most important criteria researchers would have to comply with to access FRD funding would be the quality of their research and of their research students. The FRD would invest its money in people with a track record of doing good research. This led to the announcement of the novel concept of peer evaluation and the rating of individual researchers in higher education, based on their recent track records and outputs in research. Their level of support would be exponentially linked to this rating. 40

Thus was the rating system was born.

38 Ibid, p 45.
1.9. Implementing the rating system: January 1984 to 1987

This section analyses a series of FRD publications between 1984 and 1987 which provide a window into the initial implementation of the rating system and FRD reflections and discussions about its validity. Prof de Wet’s term of office officially ended in August 1985.


Prof de Wet began working on a Research Grants Division Awards Guide in August 1983 with the final document going to the CSIR in January 1984.41

Prof de Wet emphasised that ‘[t]he whole scheme’ was based on the principle that the main factor determining research awards would be the quality of the researcher and the likelihood that, given support, they would produce good research. He included an aspect which he had not emphasised previously, except implicitly in his plea to support outstanding researchers in a non-uniform way. This was the fact that there would be ‘a strong differentiation between the good and the less good researcher; every attempt will be made to give the outstanding researcher what he (sic) needs in order to realise his potential; workers lower down the scale will have to do with less generous provision’. (My emphasis) This differentiation of funding became a huge bone of contention over the years.

He then took up the issue of how researchers would be assessed for a rating. This would be based on what the researcher had actually done, particularly what they had done in the recent past. He emphasised areas of past achievement as being ‘in the main, his publications in journals of repute and success as a trainer of graduate students who have attained high degrees under his supervision and direction’. (My emphasis) 43

Implicit in the system for awarding of grants was the assumption that it was based solely on the merit of the researchers, and the idea that there would be no favoured field of research, nor would there be interference in how the research was done. Researchers would be free to choose their own fields of research and they would be able to pursue their research in the way they thought best.

Again there is a silence in this document. Prof de Wet did not elaborate on the peer review system or on rating criteria for awards. The emphasis in this document seemed to be on publications in journals of repute. However, there are aspects of a peer review system which were implicit in the Evaluation Statement to be submitted by the


42 The following analysis is based on the November 1983 version - Proposed Research Grants Division Awards Guide, November 1983.

43 Ibid
researcher. The researcher was asked to supply the name of three researchers active in their field. The first part of the evaluation statement required ‘a full biographical sketch with full publication list and the names of three researchers active in the applicant’s field who are regarded by him (sic) as persons who might appropriately be involved in evaluating him as a researcher.’  

The basic Evaluation Statement submitted by an applicant was required to include the following:

- biographical sketch;
- complete publication list;
- names of three researchers active in the applicant’s field;
- statement of accomplished research and a self-assessment;
- full details of Masters and doctoral students; and
- any other relevant information e.g. invited participation in international conferences’  

1.9.2. Beginning to reflect and review: Reports on the first implementation of the rating system of the Main Research Support Programme, September – October 1984 and February 1985

The following observations are based on two ‘intermediate reports’ which were produced between late 1984 and early 1985.  

At this time, there was a continuing silence about the actual origins of the rating system in relation to

- the development of categories of applicants;
- the attendant criteria for allocating them to these categories; and
- the way in which applicants would be assessed.

The only points of comparison are Prof de Wet’s own ideas outlined in May 1983, as

44 Ibid.
these reports simply restate the importance of person-based free research where the researchers are evaluated by peers in the field.

By August 1984, four months after the distribution of the revised *RGD Awards Guide* in April, close on 900 evaluation statements had been received. It seems that evaluation statements had begun to come in as early as February 1984. 47 This would indicate that institutions had been thoroughly canvassed and appraised of the draft guidelines developed by de Wet, and felt confident enough to submit applications prior to the publication of the *RGD Awards Guide*.

**Classifying researchers**

The 1985 Report of the MRSP provided a ‘Directive of the Classification of Researchers’, listing categories A to E and Y.48 There are no indications as to how these descriptions were arrived at, however.

As noted above, in his May 1983 report, Prof de Wet had worked initially with categories A to C, with a provision for younger researchers, which later became the Y Category. The Directive of the Classification of Researchers 1984/5 was based on these ideas, but with some losses and some additions. Notable is the loss of emphasis in categories A and B on the ability to establish centres of excellence and to lead teams of research, though these might be implicit.

Additional categories D, E and Y formed part of the directive. Category D researchers were not proven researchers (by implication) but showed promise; while Category E was reserved for researchers whose level of recent work could not justify support. Young researchers were potential ‘high flyers’ and qualified for support as Category Y.

There was also a numerical value attached to sub-categories within the A to E and Y categories. This was not provided in the MRSP Report’s Directive of the Classification of Researchers, but is recorded as such in a recent overview of the National Research Foundation (NRF).49 Indeed, this ‘scoring system’ was highly confidential. 50 It is not clear where this came from, nor was it clear how someone would be allocated to a grading within a category. Prof de Wet himself was a mathematician, and may have designed the numeric system for doing so.

47 Discussion with members of staff at NRF Evaluation Centre, 14 August 2007.
50 Discussion with members of staff at NRF Evaluation Centre, 14 August 2007.
<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category*</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0/0</td>
<td>Researchers who are without any doubt accepted by the international community as being amongst the leaders of their field.</td>
</tr>
<tr>
<td></td>
<td>1/0</td>
<td>Researchers who are accepted by the international community as being amongst the leaders in a rather narrow field, or others with a broader range with strong claims to a leadership role.</td>
</tr>
<tr>
<td></td>
<td>1/2</td>
<td></td>
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<tr>
<td></td>
<td>2/0</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>2/3</td>
<td>Others, not in category A, but who nonetheless enjoy considerable recognition as independent researchers of high quality.</td>
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<tr>
<td></td>
<td>3/0</td>
<td></td>
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<tr>
<td></td>
<td>3/4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4/0</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>4/5</td>
<td>Researchers on the borderline between 4 and 5.</td>
</tr>
<tr>
<td></td>
<td>5/0</td>
<td>Proven researchers who, as individuals or as members of a team, have maintained a constant level of research productivity and whose work is regularly made known internationally.</td>
</tr>
<tr>
<td></td>
<td>5/6</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>6/0</td>
<td>Researchers, not in C, but showing promise of qualifying for support in the future.</td>
</tr>
<tr>
<td>E</td>
<td>7/0</td>
<td>Level of recent work does not justify support.</td>
</tr>
<tr>
<td>Y</td>
<td>9/9</td>
<td>Young researchers who are potential high fliers.</td>
</tr>
</tbody>
</table>

Both reports noted that there had been very little difficulty in achieving consensus about classifying researchers. Achieving consensus was fundamental in giving ‘grounds for a substantial degree of confidence in applying the outcome of the evaluation in making research awards.’ Ability to achieve high percentages of consensus as a measure of reliability, at all levels of the functioning of the rating system, has formed an important part of arguments in defence of the validity of the system.

Once the validity period of the rating had expired, or if a particular candidate had made significant progress in their research achievements, they would be eligible for re-evaluation, where a candidate had to lodge a complete new submission.

There were a number of problems with allocating the Y category to young researchers, the ‘high flyers’, however. These arose primarily because the characterisation of Category Y was vague and ‘had not been fully understood’. Committee members

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returned to Prof de Wet’s initial description of young researchers with potential, but added a prestigious name for the award:

‘Consideration was ultimately restricted to those brilliant young staff members who were not more than 34 years of age, of not more than three years standing as PhDs and who were permanent members of staff. Within these constraints, six high flyers were identified. They were being given three-year grants from 1985 \textit{which will be called President's Awards}.’ (existing emphasis)\footnote{Ibid, p 4.}

This latter became the P Category, leaving the Y category for people who had potential but were not necessarily exceptional.

\textit{Auditing research manpower}

According to the 1985 MSRP Report, one of the most important aspects of the evaluation outcome was to be that ‘it provides reliable information about the research manpower available in universities/museums in terms of quantity, quality and field of expertise’. \footnote{Ibid, p 6.} This was seen as extremely valuable and important information from the point of view of financial planning for the full utilisation of the research manpower available.

\textit{Appealing against the system}

The 1985, MSRP Report flagged a need for appeal as well as (or as part of) review mechanisms and structures. These provided for the researcher – or the museum or university authority who felt the decision was seriously out of line with their own assessments – to appeal and request a review.

It is not clear if this development arose from individuals or institutions having raised dissatisfaction with a rating category awarded. There had been a furore in 1985 about the ranking of institutions in terms of rated staff, which had reflected badly on the Afrikaans language universities.

\textit{The weaker brethren}

In an implicit reference to the poor performance of Afrikaans-medium universities, the 1985 Report noted that the evaluation outcome was ‘equally important for planning the remedial measures in the areas in which we are weak’ (existing emphasis).\footnote{Ibid, p 6.} It was precisely this issue which was taken up in the public domain, particularly the Afrikaans press.

\footnotesize{\textsuperscript{52} Ibid, p 4.}\footnotesize{\textsuperscript{53} Ibid, p 6.}\footnotesize{\textsuperscript{54} Ibid, p 6.}
In an interview in *Die Suid Afrikaan*, Prof de Wet was able to reinforce the main strengths of the peer review rating system and the limitations of the insular practices of the Afrikaans universities. Quotes from both Dr Garbers and Dr Arndt emphasised his points, and raised the problem of the limitations of the Afrikaans schooling system and the students it produced at universities.\(^{55}\)

1.9.3. The first MSRP support guide 1987

As was noted above, the final version of *A new look at the Foundation for Research Development* was published in May 1986. \(^{56}\) It noted the need for a comprehensive FRD Awards Guide to be published for information of the community of researchers in the universities/museums and elsewhere. \(^{57}\) This appeared in 1987 as the *Main Research Support Programme Guide*, FRD 1002-87.\(^{58}\)

The Guide outlined the system of peer evaluation based on researchers’ national as well as international status, their research track record with emphasis on recent achievements; and, where applicable, their ability to train high-quality postgraduate students and other scholastic activities. Their achievements would be assessed, inter alia, on the basis of their publications in journals of repute, contributions to highly rated conferences, technical reports, patents and any other material which could have a bearing on the assessment.

Applicants were assigned to one of the following categories below in the FRD evaluation. Reference to the table below, which is from the Guide, shows no numerical or other distinctions within categories, as these were treated as strictly confidential at the inception of the rating system.\(^{59}\)

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\(^{57}\) Ibid, 100


\(^{59}\) Ibid., p 2.
A Researchers who without any doubt are accepted by the international community as being among the leaders in their fields.

B Researchers not in category A but who nonetheless enjoyed considerable international recognition as independent researchers of high-quality.

C Proven researchers who have maintained a constant high level of research productivity and whose work is regularly made known internationally, or proven researchers whose current research output is less but who are actively engaged in scholastic activities.

D Researchers who show promise of achieving the status of proven researchers in the foreseeable future, in terms of an already existing track record, or proven researchers with an established track record who are currently less productive.

E Candidates who, according to a recent track record, are not likely to prove themselves or re-establish themselves as researchers.

Y Young researchers normally less than 35 years of age who are highly likely to achieve C status by the end of the support period.

P Researchers younger than 35 who have already obtained a PhD degree and who have shown exceptional potential as researchers.

Z Candidates whose submission for evaluation is premature.

X Candidates who cannot be evaluated as researchers.

The changes in description and numerical assignations to the categories were probably the result of internal non-public discussions at all levels, but particularly at the Award Committee level. This refining of the wording and scoring of the system has taken place on an almost annual basis. Without an in-depth study of committee documents and interviews, it is difficult to establish the reasons. However, as will be seen, the question of how the changes were linked to reviews of the system will be addressed.

1.9.4. The report on the Main Research Support Programme 1984-1987

The Report considered a number of emerging issues in the system, including:

- publication of research results in refereed journals and elsewhere;
- functioning of referees in examining the credentials of each candidates;
- functioning and composition of the panel of assessors;
- functioning and structure of the Appeals Committee;
- the relationship between the MRSP and the National Programmes; and

Ibid
• the Research Development Programme.

Publication of research results in refereed journals and elsewhere

Central to the evaluation rating system was the publication of research results in peer-reviewed journal articles. The report was concerned that applicants did not understand that the quality, rather than quantity, of articles published in journals, was important. It refined what it meant by this.

The refereeing process inherent in the choice of journal publications was a form of screening. However, it appeared that some applicants had been submitting articles to journals of a lower standard, where screening was less rigorous, in order to increase their number of publications. The report said that the quality and international distribution of journals chosen by the applicant was significant, as outstanding researchers tended to publish in appropriate journals. Therefore judgement of research calibre was not primarily based on publication count, but rather on research achievement as seen in the actual content of papers reflecting innovation and sustained activity. However, the Report made no reference to the impact that the Department of Education’s university subsidy formula may have had on applicants’ approach to publications. Stemming from the Department’s policies to reward tertiary institutions for the publication of journal articles in direct monetary terms – thus discouraging the publication of results in other forms - the subsidy formula includes an explicit component for research publications. This could well have led to researchers seeking quantity over quality, a concern which continues today.

The question of quality versus quantity of publications, and how this could be measured, has remained constant issue.

This question also raised the problem of an important category of scientific researchers, those whose research was directed mainly at industry or the community, as they had not published articles in the prescribed kind of journals. Those who participated in contract work where they were involved in technology transfer – like engineers – were also negatively affected in this way. Engineers appear as a problem group of applied researchers from this point on.

Functioning of referees in examining the credentials of each candidates

There had been good responses from a large number of referees during the first phase of implementation of the peer review system. There were between five to seven specialist referees per candidate, not all of which were of the candidate’s choice. However, there had been problems with some referees. These included

• superficial analysis;

Ibid, p 2.
• overtly critical statements or fulsome praise;
• delayed responses due to temporary absences; and
• refusal to participate because of claimed incompetence in judging specialist contributions.

In these cases, the FRD nominated further specialist reviewers, which occasionally resulted in delays in evaluation. 62

In 1987, the FRD began to rate the reports of referees/reviewers and to change its selection of them - and has continued to do so.

Functioning and composition of the panel of assessors

The role of the panel of assessors was to reach consensus on the rating recommended by the members of the selection committee, and the rating recommended by the assessor. While there was not a problem with the panels of assessors themselves, applicants interviewed during the review of the system did not seem to understand how the panel of assessors was composed or functioned. This comment perhaps begins to reveal the recurring problem that the FRD has had with communicating the impartiality and reliability of its system.

The Report noted that in general there was consensus between the selection committees and assessors in more than 90% of cases. In matters of disagreement, there was debate and reports by additional referees were requested.

At this time, the FRD was also investigating the use of the Science Citation Index (SCI) as a single additional parameter, at the highest levels of assessment - in other words at category A and B levels. The use of this tool to contribute to assessment was raised again in the 1991 Hawkins Report (see page 43). However, it does not appear to have been formally used, up to the present – although applicants have used the SCI in their applications for grading.

Functioning and structure of the appeals committee

The Appeals Committee was a mechanism by which applicants could lodge an appeal against their rating. Established in 1985, the Appeals Committee was initially the Committee of Three, comprising Dr Garbers, Dr Arndt and Prof de Wet. Their role was originally benchmarking for all ratings, and decisions on A and P ratings. 63

Appeals were only considered where the responsible university or museum authority considered the evaluation of individual applicants to be seriously out of line with their own assessment and had made an official representation. The Report felt that this was part of further attempts at improving the image of the system as impartiality and fair.

**Relationship between the MRSP and the National Programmes and the supply of ‘Scientific Manpower’**

As noted above, the MRSP encompassed ‘own choice’ and National Programmes comprising ‘field’ and ‘goal-orientated’ research. The National Programmes (originally the CSP) each had clearly defined programme aims and objectives and were funded in terms of finite time and support for specific projects. People working in National Programmes were also subject to the FRD rating system.

‘In general figures represent an encouraging index of a relatively small but progressive increase in the production of high-calibre manpower by emphasis on stimulation of research excellence, although the MRSP is technically still only in its developmental phase. The MRSP should, when fully-implemented, assist towards fulfilling national needs as regards the quality and quantity of scientific manpower on a sustained basis.’ 64

**Initiating ‘corrective action’: The Research Development Programme (RDP)**

The FRD had inaugurated a Research Development Programme (RDP) to enhance the research capability and environment in certain universities, although these were not identified in the Report. In a 1987 presentation to the Committee of University Principals (CUP), Dr Garbers and Dr Arndt named these as the universities of the Western Cape, the North, and of Zululand.65 As the qualifying researchers were distributed unevenly between universities, the Report proposed that ‘special provision should be made for the stimulation and fostering of research capability’.66

**Emerging funding problems**

In his foreword to the Report, Dr Garbers expressed satisfaction with the level of support given to the FRD ‘by the authorities in general and the Directorate Science Planning and the Department of National Education in particular, for making funds


available to the main programme at such a level that substantial progress has been made in phasing in of this programme’. 67

The Report itself cautioned that as a result of the limitation of funds allocated by the Treasury, the original concept of the FRD scheme could not ‘until now’ be implemented in its entirety. It was hoped that all comprehensive support grant holders would be fully supported by 1988 as well as those qualifying for partial support. 68

However, in their presentation to the CUP in January 1987, Dr Garbers and Dr Arndt expressed concern about the problems of keeping up with funding demand, which had not been anticipated. The FRD had made a large request for 1987/88, resulting from the need for more rapid phasing in of the funding system and addressing the serious problem of capital equipment at universities, based on a thorough critical survey of requirements. ‘Substantial funding required annually did not become available’ which had meant that the new dispensation had not been fully phased in. 69 The state was behind in its funding commitments.

In addition, substantial further funds would be required for the full implementation of the evaluation and grant system by 1991. The funding projection was considerably higher than the previously expected, because there had been major changes regarding the equipment requirements and a rise in the number of postgraduate bursars. During 1985-6, there had been constant growth in the number of postgraduate bursars, with particularly dramatic rise in Masters and doctoral students.

Despite these challenges, the authors ended on a slightly more optimistic note, concluding that ‘in a time of austerity measures, the financial muscle of the Main Programme as well as the National Programmes have been greatly strengthened.’ 70

The equipment problem

The Comprehensive Support Package for rated researchers included Global Operating Grants, which covered travel, short visits from abroad and grants for small equipment. 71 The idea was that A and B rated researchers would purchase expensive equipment, and that C rated researchers clustered around them would make use of this equipment.


68 Ibid, p (iv)


70 Ibid, p 21.

Tertiary institutions were responsible for the majority of funding of equipment. However, the issue of access to equipment, particularly in relation to facilitating C rated and newly-rated researchers to develop and enter the A and B rankings, became a major problem.

The 1987 Report noted that equipment allocations

‘are envisaged as bearing direct relation to the quality of individual researchers (or group of researchers) and his/her/their specific needs. Thus, the major part of such allocation should form part of the rolling five-year grants of comprehensively funded teams or individuals, to be used at their own discretion. The balance, suitably supplemented by university funds, should be available to individual researchers (partial grant holders).’

PART TWO: ISSUES OF REVIEW AND IMPLEMENTATION TO 1995

‘The research support programmes of the CSIR FRD (and later the independent FRD) underwent several changes during the period 1984 to 1998, but the principle of identifying good researchers in whom to invest resources was maintained’. 73

Between 1991 and 1998, two major independent evaluations of the MRSP and Core Programmes, including the rating system itself, were published. One was tabled early on in the period of major political change; the other as the institutional structures of the new democracy, some bearing the legacies of the past, were beginning to function.


In 1991, South African statistician Dr Douglas Hawkins, then resident in the USA, was commissioned by the FRD to review the MRSP during the period 1984 to 1989. Hawkins was a founder member of the Statistics Selection Committee in 1984.


2.1.1. The national and institutional context for the Hawkins Report: the Core Programmes and the independence of the FRD

The Hawkins Report was published at a time of considerable political change and uncertainty in South Africa. Negotiations about the dismantling of apartheid had begun, but there was some uncertainty about the form a new democracy might take and study commissions were being set up at all levels of society to consider alternatives, including both in the area of science and technology, and education. In 1991, the ANC (African National Congress), COSATU (Congress of South African Trade Unions) and SANCO (South African National Civics Organisation) commissioned the IDRC (International Development Research Centre) of Canada to sponsor a study on appropriate science and technology policy for South Africa.\textsuperscript{75}

At an institutional level, the FRD had terminated the MRSP in 1989 and begun implementing the Core Programmes in 1990. In April that year, the FRD became an independent body, a status sought by Prof de Wet seven years earlier. The Core Programmes were designed to foster the optimal development of a scientific and technological knowledge base by supporting self-initiated research of a high quality.

The \textit{FRD Newsletter} of July 1991 provided some insight into the evolution of the MRSP into the Core Programmes. Support mechanisms on which the MRSP was based were adapted and refined to give greater freedom and more benefits to grant holders. This took place while the MRSP was still in operation, so the final character of the MRSP was not far removed from that of the Core Programmes.\textsuperscript{76}

Major changes - largely to do with the allocation of funding, rather than the rating system itself - were as follows.

- The terms ‘comprehensive’ and ‘partial’ support were dropped. The exponential increase in funding remained coupled directly to the rating of the grant holder, but ‘factors such as need, size of the team and the number of graduate student supervised by the grant holder also played a decisive role in determining the amount of the grant’;

- Funding to grant holders in the C category was improved. The bulk of the funds had been awarded to grant holders with A and B ratings as a result of FRD policy of phasing in grants in the MRSP from the top. This created the impression that the C category reflected a poor evaluation status whilst in reality proven researchers were

\textsuperscript{75}The final version of the report, Towards a Science and Technology Policy for a Democratic South Africa, which appeared in July 1993, summed up the study group’s assessment of the various science and technology related bodies and highlighted the important needs to be addressed’ Basson, N (1996) \textit{Passage to Progress}, p 114.

included. The top grants in the C category could be in excess of R50 000 per annum. Nevertheless, the funding awarded to researchers in the C category was still seen as a problem;

- There was greater flexibility in the spending of funds, which could now be transferred between the four categories: salary, studentships, equipment and running/travel funds, a global amount awarded for a particular grant period;

- Support for young researchers was improved: ‘Originally the MRSP was designed only to support established researchers and young high achievers (President’s Awardees). The FRD recognized the need to support young researchers showing potential, known as a new Y category researcher. Ad hoc travel and sabbatical support grants were made available to these persons as well. They could now also qualify for rolling support grants’; and

- Evaluation categories were revised. The addition of Y researcher meant that there were essentially ‘two leagues’ in the Core Programmes - a young league (Y and P categories) and an older league (A, B, C, D categories). The age limit of 35 was now regarded as an arbitrary division, not a fundamental cut-off. All other categories which existed in the MRSP - Categories E, X and Z - were discontinued.77

### Rating Categories 1990

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0/0</td>
<td>Researchers who are without any doubt accepted by the international community as being amongst the leaders in their field.</td>
</tr>
<tr>
<td></td>
<td>1/0</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>7/0</td>
<td><strong>Discontinued</strong>: Candidates who, according to their recent track-record, are not likely to prove themselves or re-establish themselves as researchers.</td>
</tr>
<tr>
<td>X</td>
<td>11/0</td>
<td><strong>Discontinued</strong>: Candidates who cannot be evaluated as researchers.</td>
</tr>
<tr>
<td>Y</td>
<td>6/6</td>
<td>Normally young researchers who are less than 35 years of age, who are highly likely to achieve C status by the end of the support period.</td>
</tr>
<tr>
<td>Z</td>
<td>10/0</td>
<td><strong>Discontinued</strong>: Candidates whose submission for evaluation is premature.</td>
</tr>
</tbody>
</table>

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Only applicants with ratings in categories A, B, C, P and Y were eligible for funding in the Core Programmes which continued to be linked directly and exponentially to the merit of the individual concerned. There was a strong differentiation in the levels of support, depending on the evaluation rating of a person as a researcher. Other than special provision for young promising and outstanding members of staff (in the Y and P categories), awards were only made to applicants who were proven researchers.  

2.1.2. Other changes within the rating system 1987-1990

The assessment of reviewer/referee’s reports and selection of reviewer

An important area which emerged as an issue in 1987 and in the Hawkins Report was the quality of peer reviewers’ reports. This institution of assessment of reviewer reports was significant as the peer review system was one of the cornerstones of the rating system.

In 1987, the FRD began to rate its referees/reviewers, and change its selection of them – and has continued to do so to the present day. In 1987, the following guide for selection committees for rating the reviewers was produced.  

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>6/5</td>
<td>Researchers younger than 35 years who as individuals or as members of a team exhibit an increasing level of research productivity and whose work is regularly made known internationally.</td>
</tr>
<tr>
<td>Y</td>
<td>6/6</td>
<td>Young researchers normally younger than 35 years of age who, on the basis of their recent output, show promise to establish themselves as recognised specialists within the period until the next evaluation (i.e. within a period of about four years).</td>
</tr>
<tr>
<td>P</td>
<td>9/0</td>
<td>Researchers younger than 35 years of age who have shown exceptional potential as researchers, or are accepted by the international community as being amongst the leaders in their field, or enjoy international recognition as researchers of high quality.</td>
</tr>
</tbody>
</table>

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In 1990, assessment categories for reviewers’ reports were changed, suggesting the beginning of the unexpected challenges which the selection committees faced in utilising peer reports. The guidelines were as follows: 81

<table>
<thead>
<tr>
<th>1</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>3</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>a</td>
<td>Appropriate</td>
</tr>
<tr>
<td>i</td>
<td>Inappropriate</td>
</tr>
</tbody>
</table>

The following could apply for an ‘inappropriate’ reviewer:

- that a referee is not active in the field of research of the applicant
- that a referee has a less favourable FRD status than the applicant in the particular research field
- that a referee’s report is not meaningful, too praiseworthy or contains no factual information regarding the applicant as a scientist. 82

Reviewer/referee reports seemed to vary significantly - ranging from issues such as how differently or similarly local or international peers understood the rating categories, to lack of appropriate input often linked to qualifications, or ‘simple lack of application to the task at hand’. The problem with peer review reports increased the amount of time and administration needed to evaluate applicants, as well as causing delays with rating outcomes.

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Structures dealing with lack of consensus and appeals

In 1988 the ‘Committee of Three’ was renamed the Executive Evaluation Committee (EEC). It handled problems of reaching consensus within the rating process at Assessment Panel Level, and appeals against ratings. 83

2.1.3. Methodological approach of Hawkins Report

Hawkins used two sources of information. One was a quantitative assessment of tangible research outputs of scientists and engineers supported by the programme. The other was interviews with staff in universities and museums to find out how they work had been affected by the change over to the MRSP. Subsequent reviews followed a similar two-pronged approach.

2.1.4. Conclusions of the report

Hawkins did not feel it necessary to go into the merits of person-based as opposed to project-based assessment, except to note that this was the exception rather than the rule, and was a sharp departure from the philosophy of state funding for research in most countries. 84

Both Hawkins’ sources of information lead to the conclusion that the system had been successful, that it was a substantial improvement on the previous one, and the system of recognizing excellent performance had created a positive research climate and generally good morale amongst academic researchers. This had led to substantial increases in all types of research output. 85

Quantitative conclusions

Among Hawkins’ conclusions were the following:

- The total published scientific research for the nation increased by 27% - a much higher figure than the average worldwide

- The per capita published output of research supported by the FRD increased even more - by 60% to 70%. There was no evidence to suggest that ‘quantity had come at the cost of quality,’ making this a remarkable and very creditable turnaround.

- The output of Masters and doctoral students improved. Figures from the second half of the 1980s showed an 11% annual growth rate in numbers of students successfully supervised for higher degrees by FRD supported researchers. Hawkins commented that

83 Ibid.
85 Ibid.
‘[t]his quite substantial growth is an important contribution to the country’s future skilled manpower need.’

- The papers read at scientific conferences showed a compound growth of 11% per annum for the second half of the decade. This indicated steadily improving stature of South African academics in world science and engineering communities. Presentation of papers also led to developing research abroad and improvement of quality of local research.

- For publications, Hawkins compared output of the latter half of the decade with that of the first half. In terms of outputs of Masters and doctoral students and papers read at scientific conferences, Hawkins was limited to data which covered only the second half of the decade. 86

His conclusions were supported by interviews with over a hundred academic scientists and engineers at a cross-section of universities and one museum. There was support for the idea that person rather than project-based funding was a better system. In general people interviewed were also happy with the administration of the programme, which had had a ‘substantial’ positive impact on South African science.

‘Imperfections in the measurement of output’

As a mathematician and statistician, Hawkins was very concerned with what he called ‘the question of imperfections in the measurement of output’ in relation to tangible outputs such as publications, conference papers and graduate student production. He was particularly concerned not to equate quantity with quality. He went into a considerable amount of detail about the statistical methods by which he came to the conclusion that published papers had increased in both quantity and quality. 87 He cautioned that

‘correlation is not causality. A demonstrated increase in output could not be taken as definitive proof of the effect of the change. An important factor here was the change in University subsidy formula including an explicit component for research publications. The simultaneous timing of these changes made it effectively impossible to quantify the separate effects of these changes.’ 88

He noted that his survey was of researchers who had at some stage received FRD support and did not directly contain information on non-supported researchers. Hawkins

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87 Ibid, pp 5-6.

himself used an account of South African authored papers in the journals surveyed for the Science Citation Index.

Hawkins noted difficulties with so-called ‘publication money’ from the Department of Education subsidy, which were not the result of the rating system but might impact upon it. He noted that the formula took little account of the quality of the paper and of the different difficulties of publishing and paper lengths typical of different disciplines; and that there was very little consistency across institutions in the way publication money was spent.

As regards to conference attendance, he selected four categories of attendance and weighted them accordingly.

- keynote addresses at foreign conferences;
- keynote addresses to South African conferences;
- other papers read at foreign conferences; and
- other papers read at South African conferences.

He noted a marked growth in the total number of both keynote and other papers read at conferences -- a compound rate of slightly over 11% per annum for both keynote and other papers. However, he warned that there was a marked statistically verifiable downturn in the numbers of other conference papers, resulting from a decrease in paper reading at foreign conferences given the low foreign value of the Rand which was making attendance at conferences increasingly difficult. However, keynote addresses were not similarly affected as conference organisers tended to pay for or subvent these expenses. Hawkins made no mention of the academic boycott as an issue affecting conference attendance, though there is anecdotal evidence that this was the case.89

Hawkins’ concern with using statistics and testing the validity of his conclusions led him to suggest a statistically-based scoring system built into the rating system. This was a response to problems he identified in the existing implementation of the rating system.

**Allocation of funds between different FRD rated classes**

Hawkins identified a perennial problem – the underfunding of researchers below B level. He argued that funding for C and Y was far below what was needed for meaningful research. Since C researchers were the backbone of the whole system it was ‘myopic to short change them’. The per capita output of C researchers was nowhere as small a ratio as that of funding for As and Bs. He noted that Cs’ outputs only differed from As’ and Bs’ in foreign keynote conferences, while they had the same postgraduate outputs. They needed a level of about half or more than that of Bs.

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89 Ibid, p 11.
Hawkins also addressed the related issue of funding for running expenses, especially equipment, arguing that all researchers spent the same amount of money on items of relevant equipment. The original argument was that C rated researchers would borrow equipment from A and B rated researchers with whom they were working, and that this would encourage collaborative work, especially among C and Y rated researchers. However, many of these researchers worked in environments where there were no A and B rated researchers, and so had no equipment.

Hawkins recommended that capital and running costs be assessed separately – and that there should be a willingness to provide more expensive capital items to C and Y rated researchers. He favoured ‘some further flattening of the curve in relation to running expenses’, using new funds, not reducing those available to A and B researchers – but also cautioned that the FRD should avoid duplication particularly in expenditure on expensive equipment for A and B rated researchers.

**A critique of assessment system**

Hawkins’ interrogation of implementation of aspects the assessment system was detailed sharp and thoughtful.

In his Executive Summary, Hawkins noted that people interviewed felt that the ratings given to researchers were ‘generally accurate and impartial’, but that ‘the rating process is deficient in anonymity and replicability’. Nonetheless, minor procedural changes to improve both anonymity and replicability could ‘increase researchers’ confidence in the process’. However, in the Report itself he engaged with the system in a much more critical way.

Hawkins was the first (and perhaps only) reviewer to question the meaning of the ‘descriptive wording’ of the rating criteria. He raised this in terms of briefing peer reviewers, but his scepticism lies behind the points mentioned below, particularly in his attempts to develop a more ‘objective’ scoring system.

‘What exactly do we mean by the descriptive wording used to assign applicants to the A, B or C or no rating? What does a reviewer really mean by saying that Dr Bloggs is known internationally for his work? One possibility would be to ask for a quantification: at what percentile of post-PhD workers around the world would you put Dr Bloggs’ for research novelty?’

Hawkins suggested that ways should be found to make it clearer to reviewers what the FRD wanted to know and to make uninformative vague answers less likely. There might be a need on occasion to give specific instructions to the reviewer. He highlighted problems emerging with reviewers’ reports but located them squarely back them in guidelines given by the FRD.

90 Ibid p 29.
Hawkins also identified a need for dissemination of information on what makes for an A, B, C or D rating. His suggested ways of doing this comprised standard templates of typical records of people with different ratings; and the use of multiple regression and related statistical methods for a more formal way of doing much the same. Quantification could be helpful by removing uncertainty and giving some idea of what aspects of performance lead to higher rating in what proportions. If such a scoring function could be developed, the FRD could provide the score along with a guide to its reading to reviewers. Hawkins felt that doing so might help to make that rating more replicable.

'It would be quite a trivial statistical exercise using, for example, multiple regression to find a function to predict a rating using relatively tamperproof measures such as citation counts, students graduated, or in paperweight pages published. If this were made available together with guidelines about this and the consequent residual uncertainties about exactly where one would actually be rated it might help fill this need'. 91

Hawkins had in fact done just that in his report in an appendix entitled ‘A First Attempt at a Score Function to Predict FRD Rating’. 92

**Communication, news flow and transparency**

Hawkins identified a desperate need for more detailed feedback. This is provided in the journal publications related system through referees’ reports. The system should be geared to a long-term relationship with people who will be applying and reapplying for FRD ratings over a long period. He recommended positively written summaries of reviewers’ and committees’ perception of the applicants’ relatively strong and weak areas and how they could improve.

He described the implementation of assessment procedures as unnecessarily secretive and mysterious; that there was a ‘deficiency in information flow’. There was a need for a plain, focused and matter-of-fact inexpensively produced newsletter for researchers monthly or bimonthly, which could include background stories including sketches of members of subject committees.

He also addressed the issue of the dissemination of FRD ratings and support amounts. ‘These are kept highly confidential by FRD but some institutions make them public. There was consensus that an individual’s rating was a private matter; however it would

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91 Ibid. p 26

92 Hawkins described this as ‘a numeric descriptive measure that might capture those aspects of a person’s curriculum vitae that led to high FRD ratings’.
be helpful and proper to have a better idea of where the ratings were and how much monetary support was going where; also important to compare like with like.’  

Anonymity reliability, replicability and peer review

Hawkins observed that the whole process ‘relies on accurate anonymous outside review’ but that the ‘peer-reviewed process is not necessarily anonymous as applicants had to suggest three reviewers themselves’.  

Many reviewers only ever assessed a single candidate and so (unlike referees of papers for journals) had no basis for comparison. Also since the applicant nominated half of the assessment peers, ‘there was widespread and properly justified perception that a well chosen list of ‘good buddies’ could significantly enhance rating.’ (My emphasis)

He made two suggestions to deal with these issues:

- Use fewer foreign reviewers, with each reviewer rating more applicants so that the more reliable relativities of the candidates rather than absolute assessments could be obtained.

- A set of associate reviewers be created, each handling assessment of applicants in their particular area. This could operate mainly by correspondence, and so the people involved would not need to be in South Africa. This will build up a base of reliable reviewers.

He proposed that with both suggestions it was important to limit the applicant’s input and that the review panel should be reconstructed (and perhaps include others) to improve anonymity and reliability.

Composition of subject committees

Hawkins felt that the subject committees were seen as exclusive and not representative of all institutions involved. He made the following points.

- There was a need for impartial informed subject committees in some areas, with some foreign members. Foreign members could be involved through correspondence. This would help to avoid perceptions of subject committees as exclusive cliques.

- The FRD should, without sacrificing academic qualification, take some note of the spread of members, in terms of institutional, geographical and subject speciality. Conscious effort should be made to locate potential members in universities and museums that have not recently been represented on subject committees.

93 Ibid., p 29.
94 Ibid, p 29
He felt that such changes would also address the communication problem with the scientific community.

**Particular problems with engineering**

Hawkins noted that academic engineers had done most of their creative work in the form of consulting which was written up as internal technical notes. This could not be accommodated by the rating system with its emphasis on international quality of work. Younger engineers seemed to be happy to publish in refereed literature, there remained ‘a lost generation of older academics’ who had little record of publication in refereed media. Engineers did not feel their interests were being sufficiently represented by the FRD.

Hawkins did not feel that engineers should be assessed differently to scientists. There were already changes in ways in which academic engineers operated which meant that they could be slotted into the system – although the problem of publishing work in ‘classified’ areas remained. (For the 1980s, this would have included research in the military and in intelligence). 95

**The emerging universities**

Hawkins did not define which institutions these ‘emerging universities’ were. He simply refers to long-established universities with research track records and emerging universities, which had high teaching loads and less research tradition. There is no mention of language or race in referring to these universities. Hawkins identified an ongoing problem of a vicious circle where a lack of research history meant that few staff qualified for FRD support, which in turn meant that research programmes could not get started. A related problem was a shortage of graduate students who tended to go to the older universities as soon as they graduated.

Hawkins recommended a two-pronged approach:

- provision of seed funding to upgrade staff research records and get research equipment in place. This finding belonged in the realm of the FRD's RDP but this programme seemed to lack specific seed money to do this. He did not see a need for direct affirmative action programme on rating, however. Instead, staff could qualify for one of the five-year branches of seed funding, after which they would compete equally;

- addressing a shortage of research students, Hawkins proposed the provision of studentships and bursaries to particular institutions, as funding for studentships had been tied to the MRSP and a high rating, which completed the vicious circle referred to above.

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95 Ibid p iv.
General funding problems and their impact on the intended and actual role of FRD

The MRSP had originally been conceived as a partnership between the FRD and universities and museums, each contributing a portion of support money. Institutions were supposed to provide support to younger members of staff to get them ‘onto the escalator.’ FRD would then take responsibility for them, providing larger portions (though not all) of their needs from there. But Hawkins noted that this was not happening.

There had been central government cutbacks in subsidy to tertiary institutions, and research and equipment were the first casualties with most institutions being unable to provide vital seed money. By default, the FRD had become ‘a major factor in the entire infrastructure of research’ and it was important to increase funding from the FRD to play a bigger role, especially in funding of new researchers.

2.1.5. The FRD response to the Hawkins Report

Unlike the case with subsequent reviews, no official record of an FRD response document to the Hawkins Report could be traced. However, the FRD Newsletter of July 1991 contained both a summary of the findings of the Hawkins Report and a short response by the FRD, under the heading ‘The FRD Responds’. This was probably based on the missing official response document.

‘The Hawkins Report has been favourably received by the FRD Council and Executive. The stimulation the programme has given to research at our universities and museums is gratifying as is the increased productivity achieved by those supported in terms of research output. The FRD also noted with appreciation that the bold initiative which was taken in 1984, i.e. to move to a person-based assessment in the MRSP, the first time in the world that this approach has been taken in fostering and maintaining research excellence, has met with approval and success.’

‘There is however no reason for complacency and the FRD notes the number of detailed recommendations for improvement made in the Hawkins Report. ... Several of the issues raised have already been addressed (e.g. feedback to candidates after evaluation) whilst others are receiving attention. It has also been noted that several incorrect perceptions exist in the community (e.g. that evaluation takes place every three years when in fact it takes place every four years). The FRD is giving attention to mechanisms to correct such perceptions.

96 Ibid p 14.
This newsletter will also be used as a vehicle to keep grant holders and potential grant holders informed on matters affecting their support, as was so strongly recommended by Professor Hawkins.98

An FRD circular of December 1991 advised university and museum authorities of ‘amendments to the evaluation process’ in response to the Hawkins Report.99

In terms of feedback, the circular advised that, ‘Where appropriate, the FRD will feed back information to applicants who have submitted documents for evaluation. This recommendation has already been implemented during 1991.’100 This feedback was included in newly introduced separate letters to reviewers which addressed new evaluations, re-evaluations, special re-evaluations and re-evaluations by invitation.101

In terms of Hawkins’ concerns about the anonymity of reviewers, the circular advised that the FRD would no longer automatically approach all the reviewers nominated by the candidate, but would rather make

‘a random selection… [A]pplicants need not ask permission from reviewers whose names they suggested to the FRD. The FRD will approach reviewers, whether suggested by the candidate or not, in the same way as those invited by the FRD. Reviewers will not be advised who suggested their name’.102

The Hawkins Report had raised the question of the time taken for the review process. The FRD made two decisions to reduce the time; it changed submission dates, and obliged candidates to submit the original application together with 14 copies of the application to speed up the process. It recommended that the annexure should not exceed 20 pages. There had been problems with very long submissions which could become a burden to reviewers.103

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100 Ibid.


In terms of the evidence available from the documents analysed, it does not seem that the FRD engaged with the substantive and sophisticated criticisms of the rating system which Hawkins explored at length. And, perhaps more importantly, the FRD did not seem to engage with the alternatives he proposed. However, Ms G Schirge has argued that this was not the case and that ‘we spent a lot of time working on the recommendations’. 104

In addition, there were major changes between 1992 and 1994, which may have been responses to the Hawkins Report or to the needs of the Core Programmes as they were implemented. More detailed archival and oral research would be required to establish this. The changes are outlined below:

In 1992

- external persons were appointed to act as assessors;
- public announcements were made of applicants placed in A and P categories;
- applicants were requested to provide names of up to ten reviewers who were scientifically active their field;
- applicants were requested to indicate their best recent published refereed papers (not more than four); and
- an ad hoc meeting was introduced between assessors and the FRD to discuss the evaluation procedure in the Core Programme, after the completion of the selection committee meetings. 105

In 1993, amendments were made to the assessment of reviewers’ reports. The ‘appropriate’ category was dropped and the definition of ‘inappropriate’ was changed quite significantly: It now noted that “inappropriate” could be:

- ‘a reviewer not active in the field of research of the applicant; and
- a reviewer whose report contains no factual information regarding the applicant as a researcher in the past four to five years’.

The categories were therefore as follows. 106

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104 E-mail communication from Ms G Schirge, 23 October 2007, ‘I still do not agree with the point you make in the report that the FRD did not seriously interrogate the recommendations of Hawkins as we spent a lot of time working on the recommendations.’

In 1994, a Council Committee for Evaluation Appeals was established to deal with appeals against decisions of the EEC – thus creating a further layer for appeals. The Chairman of the Council Committee for Evaluation Appeals was appointment by the FRD Council and a member of the FRD Council.


A review panel of three people contributed to this report: Prof J F MacKenzie, Max Planck Institute für Aeronomie; Prof F Lombard; Department of Mathematical Sciences at the Rand Afrikaans Universiteit (RAU) and Prof G T Van Rooyen, Department of Materials Science, University of Pretoria.

2.2.1. The national and institutional context

The MacKenzie Report evaluated the Core Programmes for the period 1990 to 1994. To some extent its recommendations were overtaken by major structural changes in the FRD, which were themselves a response to the new democratic regime of 1994. This meant that the Report had to both evaluate the programme as well as engage with these changes.

In its response, the FRD could point to these changes as full or partial solutions to the problems highlighted. The FRD’s response to the MacKenzie report is integrated into this account.

2.2.2. Methodology used

The MacKenzie evaluation was both quantitative and qualitative, as was Hawkins’. They used data supplied by the FRD for the period 1990 to 1994 as well as extensive discussions on interviews with staff in universities, museums and one technikon, conducted throughout South Africa.

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2.2.3 Assessment of the rating system

The MacKenzie Report summarised its findings as follows:

[The MSRP and Core Programmes] stimulated and expanded research, cultivated research ethos where there had been none, created centres of excellence, trained highly skilled students and catapulted South African science into the international arena. It must be acknowledged that much of this was due to the evaluation principle which created an element of healthy competition and identified a hierarchy of researchers in whom the FRD placed its trust through the flexibility and freedom in the operation of its rolling support grants system. (My emphasis) 109

The general consensus was that the Core Programme had been very successful in:

- identifying and supporting leading researchers; enabling young scientists to become established researchers; stimulating research development; providing useful criteria for judging research achievement; creating centres of excellence (my emphasis); and

- positive aspects of the programme included: budgetary stability, facilitating forward planning; and accessibility and helpfulness of Core Programme staff; flexibility and freedom in global grant expenditure; overall confidence in the evaluation system (my emphasis).

2.2.4. The functioning of evaluation committees

The Report highlighted issues of the perceived fairness and objectivity of the evaluation process. In order to measure this, the Report focused on the measure of levels of consensus achieved. Analysing confidential data provided by the FRD for the years 1992/3 and 1993/4, the Report concluded that in 80% of the cases, the selection committees and the assessor had classified candidates in the same broad rating category and in 61% of the cases, in the same sub-category. Consensus was reached in 94.4% of the cases. 110

‘These figures are remarkable if it is borne in mind that the assessor is not a subject matter expert in the candidate’s field. In the vast majority of cases in

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which ratings differed, consensus had been reached between committee and the assessor after discussion of the reviews or the elicitation of further reviews.”

In spite of these positive comments, and taking into account the extensive analysis and recommendations in the Hawkins review, the Report’s main observations reveal that little seemed to have changed in terms of perceptions regarding aspects of the rating system.

‘The setting up of a hierarchy of researchers is fraught with difficulty, particularly when it is viewed sceptically (sometimes with good cause), and may act as a disincentive to many able individuals in all categories, especially those classified as C or Y.’

### 2.2.5. Lack of transparency and feedback

The Report noted the following problems with regard to transparency and feedback:

- a lack of transparency with regard to criteria for full funding allocations;
- absence of clear guidelines as to favourable/unfavourable factors for evaluation; and
- inadequate feedback on evaluation.

It also commented that policies were not sufficiently responsive to ‘grassroots’ researchers and to changing research needs and directions. There seemed to be an ‘inappropriate rigidity in evaluation criteria e.g. “narrow” specialisation apparently favoured over “broad”; “scientist” favoured over “engineer”, museum natural scientists “disadvantaged” relative to their academic counterparts’ (my emphasis).

### 2.2.6. Revising the rating system

**Effectiveness of the ratings**

The review urged the FRD to reconsider the C rating, as it had demonstrated the cost effective nature of C and Y ratings, as had Hawkins.

The Report acknowledged that many interacting factors and intangibles were involved in assessing productivity/cost-effectiveness, and the review committee decided to attempt to measure output per FRD Rand input. They found that C rated researchers were most productive, whilst P rated researchers were least productive, ‘with Y counterparts

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112 Ibid, p 11.

113 Ibid, p 1.
outperforming them ‘in each costed output’. The “raw data” argue in favour of a reduction of the differentials in funding between the categories.\textsuperscript{114}

The sharp differentials between C and A and B levels of funding were a source of grievance and frustration, but the review argued that ‘The raw data cost-effective analysis indicates that the smoothing of these differentials may be carried out without any significant deterioration of the quality of the research’.\textsuperscript{115} The funding to P grant holders came under the spotlight for the first time, with the review deeming it to be excessive.

The review noted the major change of direction in the FRD itself in 1995 – and speculated that

- the introduction of the new Multi-Criteria Decision Making (MCDM), in which both the quality of the proposal and the researcher were assessed, could lead to a further reduction in overall differentials; and

- the new Open and Directed Themes programmes of the FRD presented an opportunity to revisit the rating system itself.

The review encouraged the FRD to consider abolishing the C rating. Indeed, it wondered whether the ‘The new Open and Directed Programmes [presented] an opportunity to replace the present complex evaluation process by a simpler ‘ accreditation scheme’ which evaluated whether an individual was a proven/able researcher or not’. The levels of funding of the proven researcher and/or research team would be determined by the quality, feasibility and relevance of the proposal’ (my emphasis).\textsuperscript{116}

The FRD responded that within the new programmes the level of funding already depended on the rating of the researchers as well as the appraisal of the research plan. It argued that therefore, the sharp differential between funding of grant holders in categories A, B and C had fallen away.

**Peer review**

The review addressed the system of peer review, still at the heart of the rating system – and funding in the Core Programme had continued to be linked directly and exponentially to the merit of the individual concerned.

The review felt that too much weight had been put on publications and on a narrow functioning of the peer review system. If the system of peer review was to be retained,

\textsuperscript{114} Ibid, p 10.
\textsuperscript{115} Ibid, p 13.
\textsuperscript{116} Ibid, p 13.
an attempt should be made to include an individual’s wider commitments to the furtherance of his/her discipline.\footnote{117}

The FRD emphasised that the current evaluation process already took all research outputs into account. In the transition from the Core Programme to the Open and Directed themes, a broadening of the evaluation base had already taken place, through the implementation of the MCDM. However, the FRD reaffirmed that ultimately, the evaluation process ‘is driven by the quality of the research outputs and the ability of peers to comment on these research outputs’ (my emphasis).\footnote{118}

Regarding the ‘negative feelings associated with a C rating, the FRD responded rather tantalisingly that ‘it is currently, in a broader context, reconsidering the definitions of the various categories. It may well consider referring to persons as “international leaders” rather than speaking about the A category or “established researchers” rather than referring to the C category.’\footnote{119} However, the FRD was clear that it was ‘not considering discarding the rating system’ (my emphasis).\footnote{120}

\subsection*{2.2.7. Funding according to discipline}

The Report observed that there was a perception that theoreticians (e.g. mathematicians) were advantaged relative to experimentalists (e.g. chemists). An analysis of funding levels in the various categories between 1990 and 1994 showed there was little substance behind this perception.

However, the problem of funding research equipment reared its head again. There was a need for more careful analysis of the cost of theoretical and experimental research as experimental research required a good deal more funding in terms of equipment and running expenses.\footnote{121}

\footnote{117} And may include elements such as patents, conferences organised and attended, refereeing editing of SET journals, input at local and national level by way of committees directed at SET research, postgraduate students (not least)


\footnote{119} Ibid, p 58.


2.2.8. Enduring issues: Rating engineers and ‘directed research’ in general

With regard to scientists and engineers, the system did appear to favour scientists over engineers. The large disparity in ratings between engineers and scientists warranted more careful analysis.

The review noted both that

- the Core Programme promoted effort in subjects which would result in research publications rather than in the general needs of the engineering community; and

- since engineers tended to work as teams together, it was difficult to identify internationally recognized engineers as individual contributions could not be not easily extracted.

They also commented that a clear distinction should be drawn between academic research and research at technikons. Technikon research should have a much greater technological development and innovative component of a practical nature which was associated with industry driven research.

Again these issues might dissolve given changes in the FRD’s programmes, particularly Directed Research Programmes and the Technology and Human Resources for Industry Programme (THRIP) – both of which appeared to be better adapted to the culture and abilities of engineering faculties.

The FRD cautioned against equating the Directed Themes Programme with ‘applied research’. It also questioned the validity of the arguments that the rating system favoured scientists over engineers. In a separate appendix to the Report, the FRD proposed that the arguments by the review panel were ‘compromised’ and outlined the reasons for this. 122

2.2.9. Effects on historically black universities (HBUs) and ‘corrective action’

The Core Programme was seen as more beneficial to staff at historically white universities, and many staff of historically black universities (HBUs) were highly critical of the hierarchal classification of researchers which was seen as oppressive, exclusionary, biased in favour of theoreticians and funding A and B rated researchers excessively over those rated with a C. They also complained of a lack of feedback on their evaluation. The new amended definition of the C rating and new L rating were potentially helpful in this regard.

The review accepted the need for corrective action but they warned that the ‘rigid and “step function-like” application of such policies may yield undesirable and damaging effects’ 123 – and listed three:

- ‘The breakdown in the continuity of research and the demise of research teams;
- ‘The danger of quality control being thrown overboard under too great a pressure to recruit or attract unqualified students; and
- ‘the use and definition of the word “black” – which they noted had “generated unnecessary hostility” and proposed that the use of “educationally under-privileged or deprived or economically disadvantaged” which would expound the philosophy and aims of corrective action with resorting to racial overtones etc.’ 124

In its formal response to the evaluation, the FRD confirmed its commitment to corrective action both as regards race and gender. While noting the concerns of grant holders in this regard, it did not agree with the use of the proposed alternate terms, however. It also ‘puts faith and trust in its grant holders to identify, attract and recruit students who show sufficient potential and to develop this potential to the full’ – and affirmed the FRD’s commitment to excellence in research.

2.2.10. The importance of use of the rating system outside the FRD

By the mid-1990s, the FRD system of rating and funding was being used in various contexts outside of the FRD itself which had ramifications which went beyond its original mission and policy. In other words, the system had begun to take on a life of its own and to be used for purposes which were not intended by the FRD.

The MacKenzie Report made a set of important observations about this which still have significance for the more recent reviews of the system. It noted three major areas where the system was used outside the FRD.

‘Firstly, in the absence of their own systems of appraisal, universities had come to view a high FRD rating very favourably in their promotion and employment procedures. Secondly, the creation of centres of excellence, a consequence of creating a hierarchy, had unfortunately given rise to imbalances affecting the breadth of expertise available to undergraduate teaching because other less well-funded branches were left out in the cold. Thirdly, there was evidence that a good FRD rating provided a lever for attracting additional external funding - e.g. from industry (my emphasis).125

123 Ibid, p 11.
124 Ibid, Appendix 2, p 56.
125 Ibid, p 15.

The 1994 elections and the inauguration of the new government’s Reconstruction and Development Programme (RDP) led the FRD to rethink its approach to the role and funding of research in South Africa. This was reflected in the February 1995 document *Facing the Challenge*, which opened by noting that the ‘changes in the social, political and economic environment and concomitant changing expectations of the role of S&T [Science and Technology] in addressing national priorities as articulated in the RDP… have made a critical appraisal of the relevance of the FRD’s activities imperative’.

While it restated the importance of developing human capital ‘in partnership with the tertiary education sector through the support of the creation of new knowledge by research and training in research’, the document emphasised the importance of the relevance of its activities, recognising the ‘demands for greater accountability’.

The FRD reformulated its mission to ‘[ensure] the affordable and balanced provision of human resources and expertise in science, engineering and technology through the support of research and education for economic growth and the social advancement of the nation’.  

While the FRD invoked its past work as a foundation on which to build, it acknowledged that the history of racial discrimination in South Africa had ensured ‘that experts and expertise were drawn from only one racial group’. *Facing the Challenge* committed the organisation to giving ‘considerable attention to activities aimed at negating the legacy of racial discrimination in SET research, education and training’, also highlighting the importance of increasing access for women. ‘Corrective action’ rather than ‘affirmative action’ was named as the strategy for negating ‘the consequences of past policies that emphasized university education and training at the expense of technical, technological and vocational education and training’.

These shifts in approach *gave rise to a new structure within the FRD which would* ‘allow for the integration and synchronisation of activities designed to address the corporate goals’. This focused on three core categories:

- competitive research in SET (Science, Engineering and Technology);
- corrective actions; and

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127 Ibid, p ii.

128 Ibid, p iii.
• academic-industry co-operative research\textsuperscript{129}

These core categories underpinned the new research programmes of the FRD.

### 3.1. The 1995 FRD Open Research Programme and Directed Programmes

#### 3.1.1. Initial Guidelines for the new programmes: from ‘Facing the Challenge’

The three core categories above led to the announcement of new evaluation protocol for rating of researchers – although the FRD emphasised that the principle of investigator-initiated research would continue to be a cornerstone of all FRD programmes. In programmes that constituted the Directed Themes, the freedom of choice to initiate own research would be restricted by the boundaries defined by the programme description, objectives and outputs.\textsuperscript{130}

The FRD attached equal importance to both Open and Directed Themes. However, the document emphasised that participation in Directed Themes will be strongly encouraged. Grant holders whose research falls within the scope of a programme in a Directed Theme, would be funded from that programme. In order to optimise the investment of scarce resources for research development, effective and objective evaluation and assessment procedures would be followed.\textsuperscript{131}

#### 3.1.2. Individual evaluation/rating

Every potential grant holder was required to submit for individual peer evaluation and rating, in order to apply to access the Open Research Programme and all programmes in the Directed Themes. While individual peer evaluation and rating remained an important determinant of the level of funding, it would ‘by no means be the only determinant’. This was a significant shift as there was now no longer a direct linkage between a particular individual rating and a specified amount of funding. In addition, the cycles of rating period and the funding period would not necessarily coincide. In addition, the new evaluation protocol would require that the researcher or project contributed to all three core categories.

Prospective grant holders would be requested to submit comprehensive documentation on their research and other research-related scholastic achievements in the recent past for evaluation, including the following:

• research output, inter alia publications in peer reviewed journals, books, conference proceedings, patents etc as well as a personal assessment of the quality, relevance and impact of the research achievements;

\textsuperscript{129} Ibid, p iii.

\textsuperscript{130} Ibid, p 17.

\textsuperscript{131} Ibid, p 16.
• contribution to corrective actions;
• academic - industry co-operative research;
• contribution to conferences, workshops and short courses, both nationally and internationally;
• research students supervised at Masters and doctoral level;
• teamwork and synergistic collaboration with other scientists, institutions, etc;
• contribution to the management of research, e.g. membership and offices held in national and international scientific bodies; and
• awards and other tangible recognition for research achievements.132

Rating categories

‘Facing the Challenge’ proposed two groups of rating categories:

1. Researchers who are recognised nationally and internationally for his/her endeavours in research development

   A  As leader
   B  For notable achievement
   C  As regular contributor of quality

2. Researchers with the potential to become recognised within the foreseeable future

   L  Late entrant
   P  Normally younger than 35 with exceptional potential
   Y  Normally younger than 35 with potential133

Cycles of evaluation and re-evaluation

It was no longer necessary for the evaluation of individuals to be synchronised with evaluation for participation in programmes. Ratings would be valid for five years and individuals had to submit the results for re-evaluation in the fourth year of the cycle.

133 Ibid, p 18.
**Prospective researchers**

In historically black universities, technikons and colleges of education, staff with no substantial research track record had to be evaluated separately for the purpose of participation in FRD activities, such as staff development programmes and/or institutional support programmes. Their potential could also be identified on the basis of assessment by their supervisors and/or mentors, personal interviews, etc.

**Level of support**

The level of support would be determined based on three factors:

- the rating of the researcher after individual peer evaluation;
- support categories addressed by the proposal; and
- an assessment of the proposal.

**A new category: ‘Late entrant’**

In 1995, the L category was added, to ‘accommodate those researchers who experienced impediments that prevented them from establishing themselves as researchers who could produce outputs of the quality, quantity and regularity required for individual peer evaluation’. Impediments were listed as follows:

- ‘association with higher institutions that only recently committed themselves to research development’;
- employment in the private and public sector (sic) where research was not carried out or was carried out but outputs could not be made known; and
- commitment by women to marriage and/or child-bearing.’

However, ‘candidates for the L category must possess in their track record some indication of their potential as researchers. These indications could, for example, be contained in the records of their graduate training’. In 1999, an ‘L Committee’ was constituted to consider applicants for placement of researchers in the L category.

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137 Ibid, p 19.
People who had ratings in 2 above (i.e. who had potential to become recognized within the foreseeable future) were applicable for only one rating cycle, after which they were expected to move into categories under 1.

**A Multi-Criteria Decision Making (MCDM) Tool**

In 1996, a Multi-Criteria Decision Making (MCDM) tool which would be used to prioritise research proposals was implemented.\(^{139}\)

<table>
<thead>
<tr>
<th>QUALITY OF RESEARCH TEAM (600 points)</th>
<th>Leadership (principal grant holder)</th>
<th>450 points</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Establishment of team activities (rated researchers)</td>
<td>150 points</td>
<td>2</td>
</tr>
<tr>
<td>QUALITY OF RESEARCH PLAN (600 points)</td>
<td>Scientific / technical quality</td>
<td>Scientific / technical excellence</td>
<td>100 points</td>
</tr>
<tr>
<td></td>
<td>Feasibility, efficiency of plan</td>
<td>50 points</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>SET training, awareness, linkages and technology transfer</td>
<td>Research students</td>
<td>80 points</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Linkages, awareness, development and technology transfer</td>
<td>120 points</td>
</tr>
<tr>
<td></td>
<td>Corrective action</td>
<td>Black students</td>
<td>120 points</td>
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<tr>
<td></td>
<td></td>
<td>Female students</td>
<td>50 points</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Linkages with HBUs and technikons</td>
<td>40 points</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In-service staff development</td>
<td>40 points</td>
</tr>
</tbody>
</table>

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As seen above, 50% of the points allocated (600) in the assessment of a proposal would depend on rating of applicant. This was clarified in the 1997 Guide to Research Support in which ‘the entry requirements to qualify for FRD funding in the Open Research Programme and programmes within most of the Directed Themes are:

- a valid rating in one of the categories A, B, C, P, Y or L; and
- acceptance of a research plan that outlines the proposed research and the anticipated outcomes of the research within a funding cycle.’

The level of support to grant holders and their research teams depended on two separate assessments:

- the rating of the principal grant holders and their team members; and
- an appraisal of the research plan.

All research plans would be assessed in accordance with the criteria of the MCDM and the scores allocated to research plans would be used to prioritise funding. By implication, ‘a rated researcher is not guaranteed access to funding if, in the assessment process, his/her research plan is not accorded a high priority’.

All three of the core categories had to be addressed in the comprehensive documentation submitted – namely ‘competitive research in science, engineering or technology; corrective action to negate the consequences of past policies and academic–industry co-operative research where industry is defined in the broadest sense.’

The new system had implications for submission of applications. Applications for rating had to be submitted well in advance of applications for funding.

*This innovation was clearly significantly different to the allocation of funds to a person on the basis solely of their rating.*

**Importance of assessment committees as providers of feedback**

A problem identified in both the Hawkins and MacKenzie reports was the question of the nature of feedback to applicants. Although feedback had been provided from 1991, in 1997 the NRF Guide promised that ‘[t]he FRD will provide feedback from the evaluation process as follows:

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140 Ibid, p 11.
141 Ibid, p 11.
142 Ibid, Appendix 1, p 77.
143 Ibid, Appendix 1, p 77.
144 Ibid, Appendix 1, p 77.
• ‘Assessment committees will identify feedback from reviewers’ reports in all cases where, in the opinion of the assessment committee and the FRD, such feedback may be of assistance to the applicant in furthering his/her research career.

• ‘The FRD will provide feedback upon a written request by the applicant and his/her employing institution after the evaluation result (i.e. rating) has been communicated to the individual and organisation concerned. (This will be applicable only where no feedback was identified by assessment committees.)’ 145

The appeal system also provided an indirect way in which both researchers and their institutions could obtain feedback on their applications.


3.2.1. Introduction

In April 2000 a review panel evaluated the programmes and activities of both the Council for Science Development (CSD) - the research funding body of the Human Sciences Research Council (HSRC) - and the FRD. The aim was to stimulate and inform discussions regarding the establishment of single research funding body, the National Research Foundation (NRF), with particular reference to the incorporation of both the CSD and FRD into it.

With the incorporation of the CSD, a single evaluation and rating system that could incorporate the Human and Social Sciences was on the agenda. 146

3.2.2. Contexts: Founding of NRF 1999

The NRF was officially launched on 19 April 1999 – although it had effectively been operational since the beginning of that month. 147 Its birth was foreseen in the 1997 Guide to Research Support which noted that although the FRD had ‘committed itself to supporting the [new programmes] for a period of five years ... [i]t now seems very likely that a new funding body, the National Research Foundation (NRF) will come into operation before the end of the five-year support cycle’. 148

145 Ibid, Appendix 1, p 80.
The combining of the two pre-existing organisations – the FRD and the CSD – was in line with its mission to

‘….support and promote research through funding, human resource development and the provision of the necessary research facilities in order to facilitate the creation of knowledge, innovation and development in all fields of science and technology, including indigenous knowledge, and thereby to contribute to the improvement of the quality’.

The NRF was created in the context of the White Paper on Science and Technology which proposed the following:

‘The establishment of an efficient, well co-ordinated and integrated system of technological and social innovation within which:

• stakeholders can forge collaborative partnerships and interact creatively in order to benefit themselves and the nation at large;

• resources from engineering, the natural sciences, the health sciences, the environmental sciences and the human and social sciences are utilised for problem-solving in a multidisciplinary manner;

• stakeholders, especially those who were formally marginalised, are part of a more inclusive and consultative approach to policy, decision-making and resource allocation for science and technology activities;

• the development of a culture within which the advancement of knowledge is valued as an important component of national development; and

• improved support for all kinds of innovation which is fundamental to sustainable economic growth, employment creation, equity through redress and social development.’ (my emphasis)

3.2.3. Reflecting on the South African System

In the same year as this report on the CSD and FRD, a reflective overview of the existing ‘South African System’ of evaluating and rating individual researchers was published in


the academic journal *Research Review*. Its authors included people who had had a lengthy and close association with the implementation of the existing rating system. In the article, they summed up the current FRD evaluation system and looked forward to possible shifts and changes. In so doing, they made some reference to the White Paper on Science and Technology and to the founding of the NRF.

‘The White Paper .... also advocates high quality research as an essential element of the NSI (National System of Innovation). For example, in applying the principles for funding R&D [research and development] in higher education sector, the development and implementation of a policy of *international peer review* for all areas of research, especially basic research.’

The article noted that FRD President, Khotso Mokhele, had observed in a 1998 paper on research funding that ‘the implication of changes at the policy level in the newly identified priorities may require new *approaches to the evaluation of research*’ (my emphasis). The article reflected that

‘The expanded mandate alludes to a shift in emphasis. Historically the objective of research development was primarily the facilitation of research skills vested in human resources (particularly in research staff and students) and research was the vehicle to attain this goal. Within the NRF mandate, however, quality research outputs, knowledge production and technology transfer are included as primary objectives of research development.’

Such changes would have implications for the assessment system, which had been designed to promote ‘a narrower notion of research development and that was applied only in the evaluation of research in the fields of the natural sciences, engineering and technology.... [T]he challenge is to devise research evaluation strategies that are suitable within the current national and international landscape of science’. The article identified a set of ‘issues shaping the South African science landscape’ which would impinge on any new evaluation mechanisms, including:

- ‘the need to find *evaluation mechanisms* to service all science cultures and take account of such factors as multi-disciplinarily diverse research outputs and team work; and

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152 Ibid, p 33.

153 Ibid, p 34.

154 Ibid, p 34.

155 Ibid, p 35.
• the need for public accountability and for efficiency, effectiveness and economy in all evaluation procedures’ (my emphasis).  

3.2.4. The Science, Engineering and Technology Institutions (SETI) Review

As early as 1997, a commissioned review of the agency functions of the FRD and CSD – the SETI Review – was undertaken to pave the way for the NRF. Based on an identification of the core competencies of each of the organisations, a number of strategic and operational recommendations were made. The 2000 Evaluation of the CSD and FRD quoted these extensively, and concurred with them.  

The evaluation quoted points from the SETI Executive Summary as follows:

• both organisations provide substantial research support in an effective and timely manner to different groups of researchers and are inclusive of new researchers and emerging researchers, especially among the historically disadvantaged;

• total disbursements appear modest in relation to expectations of the range, depth, and types of research support can be provided. There is evidence of considerable satisfaction amongst groups of grant holders that we interviewed; and

• the peer group evaluation system used by the CSD does not rank researchers but assesses proposals; there is considerable debate about the feasibility and appropriateness of the FRD system of ranking for the social sciences and humanities.’

The report noted a perception, particularly amongst government stakeholders, that the NRF could have done more with the same resources. However, there was also widespread recognition that the programme and activities of both organisations had added value to the research community, and that the tools used to achieve these into a credible appropriate and effective (my emphasis).

Addressing historical imbalances

The evaluation quoted at length, and with approval, remarks from the SETI Report on the FRD system of performance indicators and ranking systems for researchers and projects. This included that the FRD system ‘should be kept under review in relation to its advantages and disadvantages and the effect it may have on (i) the characteristics of

References:

156 Ibid, p 35.


those who receive research grants; (ii) the institutions in which grant-holders are located 
(iii) the issues to which research funding is committed and (iv) the potential beneficiaries 
of such research. ¹⁵⁹

This was partly a reference to imbalances in the tertiary sector in terms of the spread of 
rated individuals and associated research capacity, in terms of both race and gender. In 
particular, the historically black universities/institutions were not benefiting from the 
system, which seemed to reinforce historical divides rather than alleviate them. This was 

despite of the ‘corrective action’ measures such as the introduction of L Category and 
associated adjustments and new structures. ¹⁶⁰ The report noted that

‘[t]hough patterns of research support have been changing to recognise 
redress and equity, there continues to be a chronic under supply of black 
grant holders, black bursary holders at the higher postgraduate levels, 
research grants located in HDIs (historically disadvantaged individuals) and 
female grant holders. The need to improve the distribution of access, 
opportunity and participation has to be reconciled with the mission to fund 
research of the highest quality, which is presently based at established 
research institutions.’ ¹⁶¹

Among the key findings of this evaluation was, ‘[t]hat the NRF has not been very 
successful in increasing the number of black and women grant-holders (not including 
students) in the open and directed themes as a whole - apart from singular examples of 
such interventions (e.g. the Women in Research Programme).’ ¹⁶²

Important to this historical account is the section devoted to the 2000 Review of FRD 
programmes in the period 1995 to 1999.

3.2.5. The Review of FRD’s Open and Directed Programmes: 1995-1999

The 2000 Review echoed all previous reviews in observing that

‘[t]he grant holder community has, on balance, a very favourable view of 
the FRD. It is credited with sustaining and building science in South Africa, in 
an effective, responsive and administratively competent way. In particular 
the rating system for individual scientists is seen to have highlighted and 
promoted excellence, and is perceived as fair and accurate.’ (my emphasis)¹⁶³

¹⁵⁹ Ibid, pp3-4.
¹⁶¹ Ibid , pp 3-4.
¹⁶² Ibid, p 33.
It noted the FRD’s role in the overall funding stream available to researchers. Although FRD funding contributed a relatively small amount to institutional research budgets, it was still an indispensable part of the funding because the funds were available for less directed research than those from industry. In addition, such funding carried a high status which allowed it to leverage other sorts of funding. Funding for student support was consistently highly valued.\(^{164}\)

However, there were also a number of widely held and important criticisms of FRD programmes during this period.

The amount of money available ‘is wholly inadequate to achieve the task at hand’. While allowing for budgetary problems in state provision of funding, the Review blamed the FRD for not doing its best to access other funding sources or to utilise those which it already had in the most efficient way.\(^{165}\)

Internally, there had been a growth of bureaucracy which was disproportionate to the lesser growth of the monetary value of the grants. This lead to the reviewers’ opinion that the ‘amount of administration, which might have been acceptable five years ago, is now no longer tolerable with respect to the real value of the return, and leading researchers are wondering whether the gain is worth the effort’.\(^{166}\)

In this increasingly difficult situation, the FRD was caught between the expectations of various stakeholders - including government, the private sector and universities themselves. While government departments were not convinced that the FRD was a suitable agent for the disposal of the research funds, the private sector did not think that FRD’s Directed Themes were in touch with the needs, priorities or realities of industry and shared the perception of FRD as overly bureaucratic, with excessively high overheads. However, the Review acknowledged that the private sector appreciated the role which FRD played in evaluating researchers and supporting basic research.

In opposition to this, universities with an established research tradition felt that the FRD was contributing to the ‘erosion of fundamental and curiosity-driven research’ evident

\(^{164}\) Ibid, p 20.
\(^{165}\) - failure to access significant sources other than the Science Vote
- failure to meaningfully grow the Science Vote through advocacy
- unwillingness within the allocation system to say no
- diminishing resources spread ever more thinly over larger groups of beneficiaries, in becoming sub-critical for all.

From (2000) Evaluation of the programmes and activities of the former CSD and FRD. The report of the Review Panel aimed at stimulating and informing the discussions regarding the way forward for the NRF. April 2000’

\(^{166}\) Ibid, p 20.
locally and globally. In terms of the system used to allocate funds, the Review addressed itself to the MCDM – as follows:

“‘Micro-allocation’ as opposed to ‘macro-allocation of funds’ between projects and researchers within a programme was by and large seen as fair and transparent. ... [A]t the micro-allocation level the Multi-Criterion Decision Model was generally supported, but it needs to be within the mechanism that periodically reviews the weightings.’ (my emphasis)\(^{167}\)

One of the recommendations regarding funding for the combined CSD and FRD was the approach of ‘one focus, several implementations’, elaborated as follows:

‘Three parallel types of funding, building of the strengths of the former systems, with three associated but linked processes should be created. All researchers and all disciplines should be allowed to apply for support via any of them, simultaneously or sequentially. These three types are:

- individual funding (based primarily on individual rating)
- project funding (based primarily on quality of a proposal)
- group/unit funding (based on the strength of the team and area).

‘This will remove the tension of human scientists feeling they have to be rated (they can be rated if they wish to), [and] the problem which technikons have with basing everything on individuals whilst encouraging teamwork.’\(^{168}\)

The Review raised questions as to whether the researcher rating system had any real impact on either the amount of funding granted or the outcomes of the research. In what seemed to be an aside, it noted that the outcomes of research from rated researchers had not been tracked actively by the FRD; that despite having an extensive database of researchers and graduates, there had been very limited input on outcome criteria and no medium to long-term evaluation. This is a very significant point, since the FRD and the NRF have tended to measure the success of this system in terms of number and spread of awards of high levels of rating, and not on what had followed the awards; except in the processes of re-evaluating researchers (and their work) every five years.

The dual rating system (i.e. rating the individual plus the project, plus various other factors such as the team and corrective action) had diluted the direct impact of the rating system, away from its original intent. ‘If ratings do not correlate strongly with

\(^{167}\) Ibid, p 30.

\(^{168}\) Ibid, p 26-7.
outcomes, it is hard to justify the effort that goes into the rating system.’ 169

The raising of these issues regarding the effort associated with implementation of the rating system highlights the importance of considering the kinds of costs associated with the rating system, both financial and non-financial.

PART FOUR: EXPLORING AND BALANCING INCLUSIVENESS, EQUITY AND EXCELLENCE

4.1. The Focus Areas Programmes

The New Focus Areas Programme was announced in 2000 and implemented from 2002. 170 There was provision made for an introductory year of implementation during 2001, followed by a five-year term of full implementation. 171 The Focus Areas would provide a new research support framework, both for the natural sciences and engineering and for the social sciences and humanities. The 2005 Institutional Review described the purpose of the Focus Area Programmes as follows:

‘The Focus Area Programmes represent an important facet of the NRF approach to the steering of the research system in the direction of its missions. The merger within the NRF of the previous funding systems of the CSD and the FRD is reflected in the integration within the focus areas of themes that should permit both “traditions” to have access to resources and to develop a culture of inter-disciplinary project design.’ 172

4.2. Delinking funding and rating

By 2001, alongside the announcement of the new Focus Areas Programme, the direct link between rating and funding applications was to be entirely severed. The evaluation and rating of researchers and the appraisal of research plans became two separate processes. Rating would not be a prerequisite for funding, except for researchers who would have enjoyed proposal-based support for three two-year cycles. If a rating was assigned, the researcher would be eligible for funding for a longer (five-year) period. 173
This finally forced the question about the value of the rating system to researchers who would no longer gain any financial support from undergoing the fairly exacting process of evaluation.

4.3. Developing an inclusive rating system

During 2001 while the NRF was still in formation, the existing MCDM tool and CSD systems were used to evaluate research proposals from the social sciences and humanities.

In 2002, an evaluation and rating system for researchers in the social sciences and humanities was introduced which required that applicants indicate tangible research outputs of the past seven years. In this way researchers in the social sciences and humanities obtained their first NRF rating.

A uniform system of rating all applicants – in both science and engineering and in the social sciences and humanities - was implemented in 2003. 174

4.3.1. Strategic planning and the social sciences and humanities, 2001

To begin the process of including the social sciences and humanities, a task team had conducted consultations with 200 established researchers within the social sciences and humanities during visits to 17 universities and technikons during 2000. 175 In March the following year, the NRF Board discussed a document related to ‘the strategic plan of the Research Support Agency’ (RSA), and discussed the positioning of the social sciences and humanities (SSH) as well as evaluation and quality assurance. 176 However, the Board had not had time to peruse this version of the strategic plan and was not in a position to pass resolutions proposed in the document. While a ‘dedicated special meeting of the Board’


176 Extracts from two documents were made available to the author; both related to strategic planning in the NRF, the inclusion of the Social Sciences and Humanities, and an appropriate evaluation system. They are: National Research Foundation (2001) National Research Foundation: A strategic plan for the NRF Research Support Agency: Stage 2: Discussion Document, National Research Foundation, Pretoria. This is attached to an extract from document ‘7th Meeting of the Board of the National Research Foundation, 27 March 2001’.

was to be arranged to discuss ‘the issue of evaluation and quality and its impact on grants in more detail’, we have not been able to find any records of this discussion.

The Board noted that concerns had been raised about ‘proposed procedures that might undermine SSH because of differences in approach to research, the development of new researchers with no track record, and academics who might wish to resume a research career after absence from research’. Misunderstandings might occur ‘in the broader circles of what “granting” means and how to “cost” research proposals.’

A second and very similar discussion document for a strategic plan for the NRF Research Support Agency (NRF/RSA) in May 2001, revealed concerns about quality assessment, especially with regard to research and an appropriate or even common system of evaluation. These debates were placed in the context of ‘widespread concern about the status of the social sciences and humanities (SSH) in South Africa,… a key factor in the current climate in which the NRF/RSA was mapping its strategic role in research in South Africa’.

The discussion document outlined problems regarding research in SSH, noting that funding for SSH was far below that for the natural sciences and engineering (NSE), at a ratio of 1 to 10, and that the number of funding applications from the SSH was extremely low. It also listed a range of changes within and outside tertiary institutions which had had a negative impact on SSH.

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177 Extract from the 7th Meeting of the Board of the National Research Foundation, 27 March 2001, p 4.


180 ‘some of the backlog was the result of deliberate attempts by apartheid state to stifle any education encouraging critical thought
- shift towards market-driven higher education environment
- emphasis on service provision led to the erosion of a research culture
- shift towards problem-based research which has immediate utilitarian value does not create a climate conducive towards research on topics that seemed to have little immediate benefit
- other factors: increased emphasis on teaching and academic development, curriculum transformation, bias of the national subsidy against the SS&H, declining budgets in SS&H faculties, declining student enrolments in core disciplines and a widespread tendency to undervalue the role of SS&H in society.
When it focused on the issue of evaluation and applications for funding, the document urged the NRF Board to ‘exercise its mind’ (existing emphasis) on the issue of the rating system in relation to ‘the researcher with a track record, both established and with demonstrated potential to become established’. The Board had to consider ‘whether to introduce a system of project evaluation and funding or to adopt the approach of evaluation and rating of individuals linked to funding of a research plan’. The document noted that there were advocates of both systems on the Board.181

After careful consideration of the options, the Executive of the NRF/RSA proposed that the organisation should pursue an approach based on the principles of evaluation and rating for all the disciplines. The Executive reaffirmed its confidence in the principles and functioning of the evaluation and rating system, which were that:

- ‘the most significant element contributing to good research is the quality of the researcher or the research team;
- good research will be done by proven researchers whose creativity is given free reign with in a specific support framework;
- research that challenges the researcher is most satisfying to the researcher and hence will lead to a heightened level of productivity; and
- the support framework should be such as to allow researchers to attain their full potential, i.e. incentives to continually improve.’

The system of five-year large research grants allowed for flexibility and creative research by established researchers or researchers with demonstrated potential, either as individuals or as leaders of teams. This research could take place in a broad framework of national priorities as expressed in the Focus Areas. 182

The evaluation/rating system had proved itself as a significant stimulus to research in the natural sciences and engineering over the previous 16 years. It had highlighted the strength and weaknesses of institutions and pushed almost all of them towards strengthening their research capacity. It was ‘a valuable and objective benchmark and


instrument in a variety of respects, e.g. for the standing of individuals, disciplines and institutions.’

By this time the NRF was acknowledging the role the system was playing outside its own auspices, and used this to promote the extension of the system. It noted that being allocated a rating by the NRF enabled researchers to leverage research funds from elsewhere; and that other funders used it ‘to minimise the risk of investments’. As the Mackenzie Report of 1997 had noted, higher education institutions were using the NRF evaluation and rating system as a performance indicator of staff, including for the purposes of promotion.

Returning to the issue at hand – the application of the system to the SSH - the Executive noted that

‘in a recent discussion with some of the top researchers from the social sciences and humanities in higher education, the idea of an evaluation system for researchers in the SSH was welcomed with very few exceptions. Researchers indicated that there is a need for the development of a benchmarking instrument, which will produce greater rigour and enhance overall research productivity and quality.’

There had been some vigorous debate about the criteria, mechanisms and processes that might be used in a rating system for the SSH. Several researchers advised that a cautionary approach should be pursued in the development of a rating system.

4.3.2. The devil in the detail: Final workshop on rating system for the social sciences and humanities, February 2002

In February 2002, the NRF invited representatives from higher education institutions to a workshop on a proposed evaluation and rating system for human and social sciences. The system presented at the workshop was the result of ‘recommendations made by a task team in a series of meetings and discussions on the proposed evaluation and rating system which the NRF will be implementing in 2002’.\(^\text{183}\) They outlined the proposals for the rating system which comprised three entry points to funding and proposed ‘a two-tiered approach’ to assessing the quality of proposals:

- postal peer review of the scientific merit, feasibility and innovation; and
- panel meetings comprised of auspicious individuals from relevant fields, generalists, users etc to consider peer reports and to judge proposals in terms of relevance and other funding criteria.

\(^{183}\) Van Guenewaldt, G (2002) Invitation to ‘ NRF workshop on the proposed evaluation and rating system for the Social Sciences and Humanities - 7 February 2002.’ Gerald Van Guenewaldt, Vice-President of the NRF, with accompanying PowerPoint presentation. There are no specific page references for the presentation.
In terms of ensuring quality, the applicant would be assessed in terms of peer review and research outputs.

‘Research outputs’ were not particularly different from those which had been required from applicants to the FRD.

- publications in peer reviewed journals;
- books/chapters in books;
- published peer reviewed conference proceedings;
- patents;
- technical reports;
- postgraduate students trained;
- artefacts; and
- any other research outputs that can be assessed

However, a qualifying comment recommended that ‘research outputs and their importance should be described and stipulated by the discipline’ as ‘they may differ considerably from discipline to discipline’.

The ‘critical factors’ which affected the evaluation of human and social sciences research were outlined as follows:

- the very large range covered by social sciences and humanities;
- the question of what comprises research in music, art and design;
- the conceptual and methodological diversity; and
- the permeability of disciplinary boundaries.

As a result, principles guiding the clustering of the disciplines for the human and social sciences were outlined as follows:

- ‘the specialist panels will be constituted along the lines of similar research traditions rather than on disciplinary lines
- the process can be phased in over a period of time and amendments can be made based on experience. There may be a number of panels within these areas, depending on methodology, discipline, research traditions and the number of applications received.
- Panel should not be too large (three to five people) but could be expanded for legitimacy issues as well as in a training role’.
In terms of peer review, concerns raised about the rather more complex and fraught nature of research in the human and social sciences became apparent. There was an acknowledgement that ideological differences within, and as well as, conceptual and methodological diversity could impact on the working of the peer review system. It was therefore proposed that

- ‘applicants should have the opportunity to nominate own peers
- [applicants should] indicate who should not be approached
- [there should be a] mix of national and international peers
- [as] ideological differences within disciplines in the social sciences and humanities could confound the selection of suitable peers, ... reports by peers in such instances should be identifiable and treated appropriately by wise panel members’ (my emphasis)

Applicants would be assessed on their track record over the past seven years.

*The definitions of rating categories presented at the workshop were almost exactly the same as those implemented in 2002 to apply to the social sciences and humanities.*

**Rating categories for researchers in the social sciences and humanities, 2002**

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition of category</th>
<th>Sub-category</th>
<th>Description</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>
<td>A1</td>
<td>A researcher in this group is recognised by all or the overriding majority of reviewers as a leading scholar in his or her field internationally for the high quality and impact of his or her recent research outputs.</td>
</tr>
<tr>
<td>B</td>
<td>Researchers who enjoy considerable international recognition by their peers for the high quality of their recent research outputs.</td>
<td>B1</td>
<td>All reviewers concur that the applicant is an independent researcher of high quality enjoying considerable international recognition with some of them indicating that he/she is a leading scholar in the field.</td>
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</tbody>
</table>

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<thead>
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<th></th>
<th></th>
<th>B2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All or the overriding majority of reviewers are firmly convinced that the applicant is an independent researcher enjoying considerable international recognition for the high quality and impact of his/her research outputs.</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>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.</td>
<td>C1</td>
<td>While all reviewers concur that the applicant is an established researcher (as described), some of them indicate that he/she already enjoys considerable international recognition for his/her high quality research outputs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C2</td>
<td>Reviewers are firmly convinced that the applicant is an established researcher (as described).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C3</td>
<td>The majority of reviewers concur that the applicant is an established researcher (as described).</td>
</tr>
<tr>
<td>P</td>
<td>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.</td>
<td></td>
<td>Researchers in this group are recognised by all or the overriding majority of reviewers as having demonstrated the potential of becoming future leaders in their field, on the basis of exceptional research performance and output from their doctoral and/or early post-doctoral research careers.</td>
</tr>
<tr>
<td>Y</td>
<td>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.</td>
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<tr>
<td>Y1</td>
<td>A researcher in this group is recognised by all reviewers as having the potential (demonstrated by research products) to establish him/herself as a researcher with some of them indicating that he/she has the potential to become a future leader in his/her field. (Applicants on the borderline between P and Y should be rated at this level.)</td>
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<td></td>
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<tr>
<td>Y2</td>
<td>A researcher in this group is recognised by all or the overriding majority of reviewers as having the potential to establish him/herself as a researcher (demonstrated by research products).</td>
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<tr>
<td>L</td>
<td>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</td>
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<td></td>
<td>This category was introduced to draw an increased number of researchers with potential from disadvantaged backgrounds as well as women into research. It also caters for persons previously established as researchers who have returned to a research environment after periods in industry or elsewhere. Applicants must demonstrate that they could not realise the potential or sustain their research ability by virtue of a lack of a research environment, or time spent in industry, or on maternity leave, or raising a family. For candidates to qualify for this category the employing institution must have demonstrated its financial commitment towards a development strategy for the staff member concerned.</td>
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</table>
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.

That same year the L category definition was adjusted for the natural sciences and engineering.

4.3.3. Introduction of a uniform system for evaluation and rating of all disciplines, 2003

In 2003, a uniform system for evaluation and rating of all disciplines was implemented. In the same year sub-categories A1, A2 and B3 were re-instated. 185

<table>
<thead>
<tr>
<th>Category</th>
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<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>
<td>A1</td>
<td>A researcher in this group is recognised by all the reviewers as a leading scholar in his or her field internationally for the high quality and wide impact (i.e. beyond a narrow field of specialisation) of his or her recent research outputs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A2</td>
<td>A researcher in this group is recognised by the over-riding majority of reviewers as a leading scholar in his or her field internationally for the high quality and impact (either wide or confined) of his or her recent research outputs.</td>
</tr>
<tr>
<td>B</td>
<td>Researchers who enjoy considerable international recognition by their peers for the high quality of their recent research outputs.</td>
<td>B3</td>
<td>Most of the reviewers are convinced that the applicant is an independent researcher enjoying considerable international recognition for the high quality and impact of his/her recent research outputs.</td>
</tr>
</tbody>
</table>

4.4. Assessing Peer Review Reports

Guidelines to committee members for the assessment of reviewers’ reports were adjusted almost annually and became more detailed between 2000 and 2005. This indicated ongoing problems with reviewer responses which further complicated an already overburdened system. It seems that reviewers themselves were showing signs of fatigue. In 2005, guidelines for specialist (selection) committee members were more detailed in outlining the possible issues which might arise in peer review reports.

‘Specialist Committee members must play an interpretive role when they assess reviewers’ reports. For example, if a reviewer states that the applicant is publishing in top journals, yet the journals are in the bottom tier of journals in the field, then the validity of the reviewer’s report must be called into question. Similarly Specialist Committee members should recognise the weakness of reviewers’ reports which overly praise the importance of the applicant’s work and where the work concerned is clearly not the calibre suggested in the report.’

It outlined the assessment and rating of reports by reviewers by Specialist Committees as follows: 186

1. **Good to excellent report.** Reviewer gives a critical analysis of the recent research outputs and comments critically on the quality of the research outputs of the last seven years as well as the international/national standing of the applicant. Reviewer has read the most important outputs of the last seven years.

   ‘Note: A ‘good to excellent’ rating should only be awarded to reviewers who make it clear that they have actually read or have a sound knowledge of the applicant’s research outputs. Hence, care should be taken not to overrate reports which state, for example,

   - It appears that the applicant’s work is...
   - I believe...
   - I have heard from one of my colleagues...
   - I am told...
   - It seems that his/her recent research outputs are...
   - I have not read any of the publications...

My research is not in the field of Prof X but I will nevertheless try to address your questions…)

2. **Satisfactory report.** Reviewer gives an analysis of recent research outputs. Reviewer is familiar or has familiarised him/herself with some of the outputs of the last seven years (e.g. by having acquainted him/herself with at least two or three recent research outputs).

3. **Unsatisfactory report.** Report by reviewer is superficial, or contains sweeping and/or uncorroborated statements, or over-generalises, or provides irrelevant information, or fails to focus on last seven years.

(Note: Unsatisfactory reports should not be taken into account when deciding on a rating.)

4. **Inconclusive report.** Report which makes it difficult to decide whether the reviewer should be approached again in future. The reviewer has replied but cannot oblige with the present request for various reasons (ill, going abroad, going on sabbatical for a lengthy period, time constraints, etc.)

5. **Inappropriate report.** Report is inappropriate for a particular applicant, e.g. the reviewer is not active in the applicant’s field of research. Such a reviewer should not be approached again for the applicant in question.

6. **Inappropriate reviewer.** Reviewer should not be approached again for any applicant. Reviewers in this group include:

   • a reviewer whose report is not credible or is biased (whether positively or negatively);
   • a reviewer who is no longer active in the research field, e.g. as a result of retirement.”  

4.5. The 2005 Institutional Review of the NRF

‘The “rating system” used by the NRF for the “track-record” evaluation of researchers has been extended to all disciplines, but is the subject of intense contestation and debate in the higher education sector, varying from advocacy by institutions developing a research profile (as an indicator of progress, for example) to active opposition and doubts on the part of serious scholars in the system.”  

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In terms of the rating system, the tone and findings of the 2005 Institutional Review of the NRF differed considerably from any previous reviews. The gloves were off.

What follows is an outline of this Review’s predominantly critical approach to the system. Brief discussions with participants both within the NRF and outside it have indicated unhappiness with what is perceived as a problematic bias in the review. With that proviso, the Review is quoted below.

“We have found the rating system to be divisive in the scholarly community; have posed questions about its alignment with the NRF missions and the criteria used in the NRF’s research funding system, and have heard from many groups that the rating system was increasingly irrelevant because its only link to funding was eligibility for longer-term support; believe there is unevenness in the instruments used for rating and problems with the “one size fits all” assumptions; and are concerned about the system’s inherent bias and excessive operational complexity.

As a review panel, we are skeptical about the merits of the NRF’s rating system, and are in unanimous agreement that a fully merit-driven competitive process of awarding NRF grants on the basis of proposals, weighing track record into the evaluation, would be an improvement on the current NRF policy of using ratings as a gateway to longer-term and continuing funding. We are convinced, however, that a decision on the rating system should not be imposed, but should be developed in a fully consultative process driven by the research community itself.” (my emphasis)

In short, the rating system was no longer seen as part of ‘a robust and credible instrument for assessing research quality’.

The review honed in on the cornerstone of the rating system, what it perceived as the focus on track records of individual researchers rather than on individuals as members of research teams. It highlighted the fact that the focus on individuals remained unusual (rather than unique) in the assessment of research quality globally. Where there were separate systems for rating researchers, ‘ratings of individuals are part of the assessment of research quality for the purposes of allocating funds to higher education institutions.’

It noted that the original purpose of the system had been to reward proven researchers, assessed on recent output with large grants in a system with top-down priority setting.


190 Ibid, p 64.
The review implied that the system had been more acceptable to the scientific community, in spite of its uniqueness. It implied that it was the application of the system to other disciplines, such as the human and social sciences, which had provoked severe criticism and opened the whole system up to review.

'While well-established in the natural sciences, the extension of this rating system to other disciplines is more recent. Partly for this reason, and in view of the extent of the controversy surrounding the idea and operation of this system, it needs to be more thoroughly reviewed.' 191

The Review did not appear to be aware of how much debate there had been about the system from its inception, particularly with regards to the opaqueness of the categories within the rating system, the ways in which these were awarded and linking of funding to rating. It did note that ‘the views we heard expressed amongst researchers and ratings panel members also raise doubts about the extent of support for the rating system within other disciplines, including the natural sciences’. 192

It noted that with the delinking of funding and ratings, ‘the rating status is largely honorific, with the one important exception that eligibility for long-term (5 year) grants from the NRF is limited to rated scientists after an initial maximum of three two-year grants.’ 193

On the question of whether to re-instate the link between rating and funding, opinion was divided. Some supported the idea, as a way of rejuvenating interest among researchers in being rated while others opposed it, on the grounds that re-instanting the link would undermine the NRF’s efforts to spread research funding more widely across historically disadvantaged groups and to younger scholars who had not yet become established researchers.

The Review considered what it called the ‘extent of controversy and division provoked by the rating system’, noting that ‘[t]he issue of the rating system came up in almost all the interviews we conducted, which exposed us to a range of strongly held and very divided positions.’ 194

It observed that number of rated researchers outside the natural sciences was low. While there might be many reasons for this, there were questions about ‘the willingness of researchers across the board to participate in the system, and particularly in the social sciences and humanities (SSH). ... It is unlikely that a rating system can become fully

191 Ibid, p 64.
192 Ibid, p 65.
193 Ibid, p 64.
credible and legitimate without greater orders of trust and buy-in, particularly amongst those eligible for rating'.

'Researchers and members of ratings panels perceive tensions between central aspects of the NRF’s mission, and the current rating system. As a key aspect of its human capital mission, the NRF wishes to reward and give incentive to established researchers who draw younger scholars into bigger projects, in the interests of building research capacity and creating a lively research environment for groups or teams of researchers. *This is not a criterion in the rating process, however. Indeed, the prioritisation of high quality international publications may create disincentives to leading researchers to take on mentoring responsibilities which detract from their time to write and publish internationally.*

The Review makes the important point of what is seen as valorising international at the expense of local research.

‘A high rating requires evidence of the international standing of the research. Yet, in many disciplines, established researchers have stressed to us the importance of contributing to and shaping local debates, engaged with critical developmental issues. With leading researchers writing for local journals, *the international reach and impact of a piece of work may not be an appropriate yardstick of its scholarly quality. The case of law was often mentioned in this regard.*

The Review expressed concern about *unevenness in the rating instruments used*. The reviewers’ comments here are fundamentally about the way in which the system has always been open to interpretation. A number of previous reviews had grappled with the terminology used in the description of categories, as well as in areas like instructions to peer reviewers, selection committees and assessment panels. The fundamental point remained that the descriptions of the categories are open to interpretation.

At various points the historical reviews covered attempted to deal with this in various ways, including attempting to quantify the system more directly, hoping to make it more objective and predictable. They have also noted that the system is painful not only in the underfunding researchers, but in the demotivating effect of the allocation of scores below B. Other approaches have included after-the-fact measurement of the level of consensus achieved within selection committees, between selection committees and

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197 Ibid, p 66.
award committees and in relation to Executive Evaluation Committee.

The Review noted the enduring problem of concerns and, more importantly, perceptions, relating to the composition of panels and the evaluation process. It should be noted that these views were sometimes countered by those who had served on project review panels and so saw the process as fair.

‘As with other issues raised in this section, the review panel recognises that some of the concerns raised here are based on a less than full understanding by stakeholders of the NRF’s approach to panels or may relate to assumptions made on the basis of poorly crafted feedback to applicants.’

While much of what was raised might be valid, it is difficult to assess the basis on which the Institutional Review came to these conclusions, beyond accumulating, selecting and organising a series of opinions. The marshalling of opinions was a methodology common all three previous external reviews, each of which set great store on interviewing a wide range of people and quoting from them quite liberally and selectively. However, in the case of the Hawkins and MacKenzie reviews and, to a lesser extent, the 2000 CSD/NRF Review, there were also attempts to marshal and interrogate data, in order to show the limits and strengths of the system, and to provide suggestions for alternatives.

A lesson from this historical account might be to highlight the limitations and costs of survey/interview/ approach. Perhaps stakeholder interviews should be correlated with more rigorous (and possibly creative) qualitative and quantitative interrogation of data and trends. Ironically, the social sciences and humanities have a great deal to offer in this regard.

4.6. The NRF Response to the 2005 Institutional Review

The NRF’s response to this evaluation of the rating system was short and quite muted, though it was clear in its belief in the enduring quality of its assessment tools It was also clear that sufficient broad-based discussions with stakeholders had taken place during and after the fusion of the CSD and FRD, before the implementation of a single new system of evaluation. It re-emphasised its own active and driving role in developing new methods of evaluating research quality.

At the time of this response (November 2005) the NRF had produced an extremely detailed brochure on the evaluation system entitled The NRF Evaluation and Rating System: Facts and Figures 2005. This document was not a response to the Institutional

Review, however, but rather was an attempt to outline in the most user-friendly fashion various aspects of the evaluation system. In so doing, it addressed some of the concerns of the Review.

It marshalled a vast array of facts and figures to indicate various trends in the number of rated researchers in disciplines and institutions from 1986 to 2002/3 (see Part Five: Concluding Remarks). In a sense it can perhaps also be seen as a second internal review, following on the 2004 RISA Self-Evaluation Report, mentioned in the Institutional Review.

PART FIVE: CONCLUDING REMARKS

5.1. NRF interaction and responsiveness to review and critique

The Institutional Review noted ‘that it was premature for the NRF to conclude that ‘despite some reservations still held by researchers within the system, there has been a very positive response by the SSH community in embracing this system’ quoting from the 2004 RISA Self-Evaluation Report.’

Without intending to, the 2005 Institutional Review highlighted an ongoing problem throughout the conception and implementation of the system: an apparent unresponsiveness on of part of the NRF to engage with criticism aimed at the heart of the rating system or with proposed alternative models. While previous reviews were generally supportive of the perceived impact of the system (such as the increase in rated researchers), they had raised serious concerns about the system itself and, as importantly, perceptions of it, and made concrete proposals for alternative ways of dealing with the issues raised.

From evidence available, it seems that the FRD/NRF had to respond to a range of pressures, of which the findings of the review processes were but one among many. The FRD/NRF fiercely defended the rating system and reaffirmed its confidence in it perhaps because it was a constant within a rapidly changing set of programme and evaluation approaches, procedures and tools. A consequence has been that the system was adjusted rather than interrogated. Changes took place in three areas: the award categories, in terms of numbers of categories, terminology and numeric allocation; in the number of peer reviewers selected, and in the rating of peer reviewers’ reports. In general, however, the reviews from 1991 did not seem to have a serious impact on the NRF’s direction in terms of the rating system. Of course this historical document forms part of a major response to the 2005 institutional review.

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The inclusion of the social sciences and humanities provided stakeholders and the NRF itself with an opportunity to reconsider and interrogate the evaluation system. The fact that the system did not change substantially tells us something about the perceived reliability and applicability of the system, and therefore about the system’s enduring nature. Certainly, between 2000 and 2002, there was a considerable amount of consultation and debate around the system itself and its applicability to the social sciences and humanities. On the evidence available, key stakeholders, both in the social and sciences and humanities and in SET, took the system on board in 2002. This is a point which is neglected in recent criticisms of the system.

There are indications of discussions at Board level in early 2001 about the system, but this information is not available. The strategic planning document of 2001 quotes the NRF executive at length in asserting the advantages and validity of the system.

Possibly the most significant change to the system was provoked by the restructuring of the NRF in response to major political change. The subsequent implementation of the MCDM tool began a move away from individual researcher evaluation and marked the beginning of the delinking of individual rating from funding. At the time of writing funding and rating have been completely delinked, though, as the NRF points out, project proposals involving the participation of rated researchers are more likely to be successful in being granted funding. Nevertheless, this indicates a significant move away from Prof De Wet’s hierarchical rewarding of excellent researchers supported in doing ‘free research’.

5.2. The independent life of the rating system

As has been noted in this account, the rating system developed a life outside of the NRF. It has been used both positively and negatively in the lives of individual researchers, by institutions involved in research, and by those who benefit from it, such as the state and private enterprise. The NRF actively acknowledges this and, in turn, has harnessed this independent functioning in its own arguments to encourage participation in the process of becoming a rated researcher.

The 2000 article, *The South African System of evaluating and rating individual researchers: its merits, shortcomings, impact and future*, suggested that the system bore the brunt of unintended uses. The authors proposed that ‘the rating of researchers was criticised and sometimes stigmatised for reasons external to the system itself, because the ratings were sometimes used in contexts and for purposes not initially intended by the FRD.’ They cite the example of performance appraisals which they place in the context of ‘few other performance measures exist[ing] in higher education [such that] the FRD ratings were used as a performance indicator in the evaluation and promotion
of academic staff at universities and technikons. *Undue importance* was thus attached to the FRD rating of researchers’ (my emphasis). 202

However, five years later this unintended use of the system came to be given a more positive spin. In addressing the question of why researchers should apply for evaluation and rating, *The NRF Evaluation and Rating System. Facts and Figures 2005* noted that ‘[s]everal higher education institutions use the NRF’s rating system as a benchmark to determine the quality of their research staff and provide incentives for researchers to obtain high ratings’. 203

It also reported that the rating system ‘has been used extensively by several higher education institutions to position themselves as research-intensive institutions, in promotion of academic staff, as well as in recruitment of leading researchers. Several research institutions have used the outcome of evaluation and rating of researchers as a tool in staff development.’ 204 In addressing the question of why researchers should apply for evaluation and rating, *The NRF Evaluation and Rating System. Facts and Figures 2005* gave the following as a rationale:

‘Science is a competitive activity and the evaluation and rating process can therefore serve as a benchmarking tool that provides tangible objectives for researchers who aspire to maintain or improve their standing as researchers. Some researchers find that a valid NRF rating enhances their credibility and standing as researchers for other funding applications, while others may also benefit from the feedback extracted from the reviewers’ reports.’ 205

5.3. Blaming the messenger

It might be the case that the rating system has become something of a scapegoat for the results of the very competitive and sometimes cruel nature of intellectual endeavour and research. Many of the problems raised by the 2005 Institutional Review could be said to apply to the whole nature of this endeavour, both in South Africa and internationally. It is impossible to have a system which is completely objective and not open to interpretation. A brief review of literature on the measurement of individual

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204 Ibid p 16.

205 At the time of publication, several higher education institutions in South Africa had recently merged or were in the process of merging. This publication uses the names by which they were known at the time of data collection.
achievement through, for example, citation indexes, reveals the ways in which apparently objective measurements of research impact may be manipulated, may misrepresent the importance of certain research and intensify competition and division rather than collegial co-operation. In that sense Prof de Wet’s ideas of the ‘good researcher’ being judged by a jury of his (sic) peers seems quite naïve, in any context, local or international. However, ‘peer review’ of one sort or another has long been a constant factor in the evaluation of researchers in academia and in the professions closely related to academia such as medicine and engineering.

In South Africa, the complex political economy inherent in strengthening research in institutions and disciplines which have been unequally funded for many years, in an emerging democracy which in turn prioritises measurable deliverables and seeks to be competitive globally, has been covered at length elsewhere. Perhaps the enduring and dynamic tension between equity and excellence has simply been highlighted by, among other things, the rating system.

5.4. Ways forward: research on research

This historical account has attempted to show the ways in which the NRF and its predecessors responded to processes of review in the context of a series of political and economic imperatives - within the apartheid era, through the period of transition and within the current context in which institutions are adjusting to new priorities. The fundamental shift from the focus on the privileged position of the brilliant individual researcher as envisaged by Prof de Wet, to peer and project-based assessment was initiated as early as 1995.

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.

In compiling this historical account, we have become aware of how one of the enduring strengths of the system, its reliance on researchers themselves, has become problematic. The documentation available to us has repeatedly emphasised how a substantial portion of the time and effort in implementing the rating system falls on academics in tertiary institutions. Their work is regarded as ‘voluntary’, or a matter of choice, in that some academics choose not to participate, and appears to be seen as a predominantly ‘social cost’ rather than a financial one. However, since they are employed by tertiary institutions, which make some provision for funding the expenses of staff associated with the support of academic endeavour in general, it seems important that the time and efforts of ‘voluntary’ participants in writing peer reviews, participating in selection committees etc., should perhaps be quantified and analysed over a specific period of years. Conclusions could be drawn about the impact on university resources both directly and indirectly, both financial and social. It is not in the brief of this document to comment further on this point, except that it bears further consideration or research.
In 1991, Douglas Hawkins recommended that the FRD pay attention to research on its own research. By that he meant that the FRD should be more rigorous in substantiating it claims that the MRSP had had substantial impact on SET research output. In 2000, the evaluation of the CSD and FRD noted that the outcomes of research from rated researchers had not been tracked actively by the FRD. It noted that the FRD had an extensive database of researchers and graduates but there had been very limited input on outcome criteria and no medium to long-term evaluation.

In 2007, this significant point needs to be reiterated, since the NRF appears to have continued to limit the measurement of the success of this system by confining this measurement to two 'indices': the number and spread of awards of high levels of rating; and the different kinds of access to other options provided by the allocation of a high rating category. The notion of NRF conducting research on its own research, if somewhat different in form from that envisaged by Hawkins, remains challenging and relevant. 206

To some extent, the issue is being addressed by the Rich Data Mine Project.
REFERENCES

(2000) Evaluation of the programmes and activities of the former CSD and FRD. The report of the Review Panel aimed at stimulating and informing the discussions regarding the way forward for the NRF. April 2000’.


Extract from the ‘7th Meeting of the Board of the National Research Foundation, 27 March 2001’.


Van Guenewaldt, G (2002) Invitation to ‘NRF workshop on the proposed evaluation and rating system for the Social Sciences and Humanities - 7 February 2002.’ Gerald Van Guenewaldt, Vice President of the NRF, with accompanying presentation.
APPENDIX ONE: CLASSIFICATION OF RESEARCHERS 1984 – 2003


1984 Announcement of the following directive for the classification of researchers (A, A/B, B, C, D, E, Y):

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category*</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0/0</td>
<td>Researchers who are without any doubt accepted by the international community as being amongst the leaders of their field.</td>
</tr>
<tr>
<td>A</td>
<td>1/0</td>
<td>Researchers who are accepted by the international community as being amongst the leaders in a rather narrow field, or others with a broader range with strong claims to a leadership role.</td>
</tr>
<tr>
<td>B</td>
<td>2/0</td>
<td>Others, not in category A, but who nonetheless enjoy considerable recognition as independent researchers of high quality.</td>
</tr>
<tr>
<td>B</td>
<td>2/3</td>
<td>Researchers on the borderline between 4 and 5.</td>
</tr>
<tr>
<td>B</td>
<td>3/0</td>
<td>Proven researchers who, as individuals</td>
</tr>
<tr>
<td>Level</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>or as members of a team, have maintained a constant level of research productivity and whose work is regularly made known internationally.</td>
<td></td>
</tr>
<tr>
<td>5/0</td>
<td>Researchers, not in C, but showing promise of qualifying for support in the future.</td>
<td></td>
</tr>
<tr>
<td>5/6</td>
<td>Level of recent work does not justify support.</td>
<td></td>
</tr>
<tr>
<td>6/0</td>
<td>Young researchers who are potential high fliers.</td>
<td></td>
</tr>
<tr>
<td>7/0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9/9</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
Other categories used during the evaluation and rating process:

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>v/v</td>
<td></td>
<td>Insufficient information received to be classified in one of the existing categories.</td>
</tr>
<tr>
<td>g/e</td>
<td></td>
<td>Did not submit documents for evaluation or submitted documents for evaluation too late.</td>
</tr>
</tbody>
</table>
1985 Revised descriptions of categories A/B, C, Y, D and E in the directive for the classification of researchers. Changes below indicated in italics:

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0/0</td>
<td>Researchers who are without any doubt accepted by the international community as being amongst the leaders in their field.</td>
</tr>
<tr>
<td></td>
<td>1/0</td>
<td>Researchers who are, like those in category A, accepted by the international community as being amongst the leaders in a rather specialised field, or others with a broader range with strong claims to a leadership role.</td>
</tr>
<tr>
<td>A/B</td>
<td>1/2</td>
<td>Others, not in categories A or A/B, but who nonetheless enjoy considerable international recognition as independent researchers of high quality.</td>
</tr>
<tr>
<td></td>
<td>2/0</td>
<td>Researchers on the borderline between 4 and 5.</td>
</tr>
<tr>
<td>B</td>
<td>2/3</td>
<td>Proven researchers who, as individuals or as members of a team, have maintained a constant level of research productivity and the work is regularly made known internationally OR proven researchers, whose current production in terms of publication of additions to existing knowledge is low but who are actively engaged in publishing books at levels near the present frontiers of knowledge, which contribute significantly to an overall synthesis of existing knowledge, and is recognised by the research</td>
</tr>
<tr>
<td></td>
<td>3/0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3/4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4/0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4/5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5/0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5/6</td>
<td></td>
</tr>
</tbody>
</table>
Researchers who show real promise of achieving the status of proven researchers in the foreseeable future, in terms of an already existing record of publications, OR proven researchers with an established track record, but who are currently less productive.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>6/0</td>
</tr>
</tbody>
</table>
|   | Candidates where the expectation of qualifying as a proven researcher in a finite time is small.

Young researchers who are less than 34 years of age, and permanent members of staff, not yet Ds or higher, who are highly likely to achieve C status in a finite time.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>7/0</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>9/9</td>
</tr>
</tbody>
</table>
1986: *P* category formally introduced in the directive for the classification of researchers.

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>9/0</td>
<td>Researchers younger than 35 who already have obtained PhD degrees, and who have shown that they possess exceptional potential as researchers.</td>
</tr>
</tbody>
</table>

And

Descriptions of categories A, E and Y in the directive for the classification of researchers revised and descriptions for categories Z and X are introduced. Changes below are indicated in italics:

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0/0</td>
<td>Researchers who are without <em>any</em> doubt accepted by the international community as being amongst the leaders in their field.</td>
</tr>
<tr>
<td></td>
<td>1/0</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>7/0</td>
<td>Candidates who, <em>according to their recent track-record, are not likely to prove themselves or re-establish themselves as researchers.</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Normally young researchers who are less than 35 years of age, who are highly likely to achieve C status</td>
</tr>
<tr>
<td>6/6</td>
<td>by the end of the support period.</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Candidates whose submission for evaluation is premature.</td>
<td></td>
</tr>
<tr>
<td>10/0</td>
<td>Candidates who cannot be evaluated as researchers.</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1990: Introduction of sub-category 6/5 in the Y category, and discontinuation of E, X and Z.

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>6/5</td>
<td>Researchers younger than 35 years who as individuals or as members of a team exhibit an increasing level of research productivity and whose work is regularly made known internationally.</td>
</tr>
<tr>
<td>Y</td>
<td>6/6</td>
<td>Young researchers normally younger than 35 years of age who, on the basis of their recent output, show promise to establish themselves as recognised specialists within the period until the next evaluation (i.e. within a period of about four years).</td>
</tr>
<tr>
<td>P</td>
<td>9/0</td>
<td>Researchers younger than 35 years of age who have shown exceptional potential as researchers, or are accepted by the international community as being amongst the leaders in their field, or enjoy international recognition as researchers of high quality.</td>
</tr>
</tbody>
</table>

1993: Revised description of rating categories Y and P. Changes below are indicated in italics:

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Description</th>
</tr>
</thead>
</table>
| Y        | 6/5 and 6/6  | Researchers (normally younger than 35 years of age) who have obtained their doctoral degrees within the past five years and who, on the basis of the recent research output emanating from their doctoral studies and early post-doctoral research careers, show promise
Researchers (normally younger than 35 years of age) who have obtained their doctoral degrees within the past five years and who, on the basis of exceptional potential as researchers during their doctoral studies and early post-doctoral careers, are highly likely to be recognised by the international community as being amongst the leaders in their field, or as enjoying considerable international recognition as researchers of high quality by the next evaluation (i.e. within a period of about four years).
1995: Revised description of rating categories as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>A1</td>
<td>Researchers who are without doubt accepted by the international science, engineering or technology community as being amongst the leaders for the high quality of their research outputs⁷.</td>
</tr>
<tr>
<td></td>
<td>A2</td>
<td>Researchers on the borderline between A and B.</td>
</tr>
<tr>
<td></td>
<td>A3</td>
<td>Researchers on the borderline between A and B.</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>B1</td>
<td>Researchers who enjoy considerable international recognition as independent researchers for the high quality of their research outputs.</td>
</tr>
<tr>
<td></td>
<td>B2</td>
<td>Researchers on the borderline between B and C.</td>
</tr>
<tr>
<td></td>
<td>B3</td>
<td>Researchers on the borderline between B and C.</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>C1</td>
<td>Established researchers who as individuals or as members of a team produce research outputs of an international standard which are appreciated by the science, engineering or technology community either internationally or locally.</td>
</tr>
<tr>
<td></td>
<td>C2</td>
<td>Researchers (normally younger than 35 years of age) who have obtained their doctoral or equivalent degrees during the past five years and who, on the basis of exceptional potential as researchers during their doctoral studies and/or early post-doctoral careers, are highly likely to be recognised by the international community as being amongst the future leaders in their field or as enjoying considerable international recognition as independent researchers of high quality by the next evaluation.</td>
</tr>
<tr>
<td></td>
<td>C3</td>
<td>Researchers (normally younger than 35 years of age) who have obtained their doctoral or equivalent degrees during the past five years and who, on the basis of exceptional potential as researchers during their doctoral studies and/or early post-doctoral careers, are highly likely to be recognised by the international community as being amongst the future leaders in their field or as enjoying considerable international recognition as independent researchers of high quality by the next evaluation.</td>
</tr>
</tbody>
</table>
Researchers (normally younger than 35 years of age) who have obtained their doctoral or equivalent degrees during the past five years and who, on the basis of the recent research output emanating from their doctoral studies and/or early post-doctoral research careers, show promise of establishing themselves as researchers by the next evaluation.

Researchers who have demonstrated potential in their careers, but who were impeded by external factors from realising their potential, and who show promise to establish themselves as researchers within the period until the next evaluation.

1995: Discontinuation of sub-category 6/5 in the Y category.
1997: Revised description of rating categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition of category</th>
<th>Sub-category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Researchers who, without doubt, are accepted by their peers as being world leaders for the high quality and impact of their recent research outputs.</td>
<td>A1</td>
<td>A researcher in this group is typically</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- a world leader in a broad area, or</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- regarded as the world leader in a specialised field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A2</td>
<td>A researcher is this group is</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- considered amongst a group of world leaders but not necessarily top ranking in this group, or</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- a world leader in a narrowly specialised area and recognised as such by peers in a somewhat broader area.</td>
</tr>
</tbody>
</table>

All reviewers (or at least a vast majority) concur that the candidate is a world leader.

All reviewers concur that the
Researchers who enjoy considerable international recognition as independent researchers for the high quality and impact of their recent research outputs.

B1

Candidate is an independent researcher of high quality enjoying considerable international recognition with some of them indicating that he/she is a world leader. (Researchers on the borderline between A and B will be rated at this level.)

B2

Reviewers are firmly convinced that the candidate is an independent researcher enjoying considerable international recognition for the high quality and impact of his/her research outputs. (On re-evaluation an improvement in international stature on a previous rating of B3 would result in a B2 rating or higher.)

On balance reviewers’ reports clearly indicate that the applicant is an independent researcher who enjoys considerable international recognition for the high quality of his/her research outputs.

B3

While all reviewers concur that the candidate is an established researcher (as described), some of them indicate that he/she already enjoys some international recognition for his/her high quality research outputs. (Researchers on the borderline between B and C
Established researchers who, as individuals or members of a team, produce research outputs of an international standard which are appreciated by the science, engineering or technology community either internationally or locally.

Reviewers are firmly convinced that the candidate is an established researcher (as described). (On re-evaluation a candidate may progress from a C3 to a C2 rating when reviewers indicate an improvement, which however does not yet indicate considerable international recognition.)

The majority of reviewers concur that the candidate is an established researcher (as described).
Young researchers (normally younger than 35 years of age), who obtained their doctoral (or equivalent) degrees not more than five years ago and who, on the basis of exceptional potential as researchers during their doctoral studies and/or early post-doctoral careers, as indicated by their research outputs, are recognised internationally as having the potential to become future leaders in their field.

Young researchers (normally younger than 35 years of age) who have obtained their doctoral (or equivalent) degrees not more than five
years ago and who, on the basis of their performance as researchers during their doctoral studies and/or early post-doctoral research careers, as indicated by their research outputs, are recognised as showing promise of establishing themselves as researchers within a five-year period after evaluation.

Members of the science, engineering and technology community who have demonstrated potential as researchers in the past and who can demonstrate that they were prevented from realising that potential, but who now can show promise of being able to establish themselves as researchers within a five-year period after evaluation.

**L category is only applicable to**

South African citizens or other persons who have been in South Africa for at least five years during which time they were prevented from realising their potential. It includes persons previously established as researchers who have recently returned to the academic environment after lengthy periods in industry, etc.

In all instances where candidates qualify for this category the employing institution will be called upon to demonstrate its commitment towards a growth strategy for the staff member concerned.
**2000:** Level Y1 and Y2 introduced in the Y category as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition of category</th>
<th>Sub-category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Young researchers (normally younger than 35 years of age), who obtained their doctoral (or equivalent) degrees not more than five years ago, and who are recognised as having the potential (demonstrated by research products) to establish themselves as researchers within a five-year period after evaluation based on their performance as researchers during their doctoral studies and/or early post-doctoral careers.</td>
<td>Y1</td>
<td>A researcher in this group is recognised by all reviewers as having the potential (demonstrated by research products) to establish him/herself as a researcher with some of them indicating that he/she has the potential to become a future leader in his/her field. (Candidates on the borderline between P and Y should be rated at this level.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y2</td>
<td>A researcher in this group is recognised by all or the over-riding majority of reviewers as having the potential to establish him/herself as a researcher (demonstrated by research products).</td>
</tr>
</tbody>
</table>
2002: Revised definition of L category (natural sciences and engineering):

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition of category</th>
<th>Sub-category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Persons (normally younger than 55 years) who have previously demonstrated either research potential or research practice through their own accomplished research products, and who can now show promise of being 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 were unable to realise their potential as researchers.</td>
<td></td>
<td>This category was introduced to draw an increased number of researchers with potential from disadvantaged backgrounds as well as women into research. It also caters for persons previously established as researchers who have returned to a research environment after periods in industry or elsewhere. Applicants must demonstrate that they could not realise that potential or sustain their research ability by virtue of a lack of a research environment, or time spent in industry, or on maternity leave, or raising a family. For candidates to qualify for this category the employing institution must have demonstrated its financial commitment towards a development strategy for the staff member</td>
</tr>
</tbody>
</table>

Candidates who are eligible for this category include those who

- are black researchers
- are females researchers
- are employed in a higher education institution that lacked a research environment.

- were established as researchers before and who have returned to a research environment.
**2002:** Announcement of the definitions of rating categories for the evaluation and rating of researchers in the social sciences and humanities:

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
<th>Sub-category</th>
<th>Description</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>
<td></td>
<td>A researcher in this group is recognised by all or the over-riding majority of reviewers as a leading scholar in his or her field internationally for the high quality and impact of his or her recent research outputs.</td>
</tr>
<tr>
<td>B</td>
<td>Researchers who enjoy considerable international recognition by their peers for the high quality of their recent research outputs.</td>
<td>B1</td>
<td>All reviewers concur that the applicant is an independent researcher of high quality enjoying considerable international recognition with some of them indicating that he/she is a leading scholar in the field.</td>
</tr>
</tbody>
</table>
Established researchers with a sustained recent record of productivity in the field who are

All or the over-riding majority of reviewers are firmly convinced that the applicant is an independent researcher enjoying considerable international recognition for the high quality and impact of his/her research outputs.

While all reviewers concur that the applicant is an established researcher (as described), some of them indicate that he/she already enjoys considerable international recognition for his/her high quality research outputs.

Reviewers are firmly convinced that
Young researchers (normally younger than 35 ears 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

C1
the applicant is an established researcher (as described).

The majority of reviewers concur that the applicant is an established researcher (as described).

Researchers in this group are recognised by all or the over-riding majority of reviewers as having demonstrated the potential of becoming future leaders in their field, on the basis of exceptional research performance and output from their doctoral and/or early post doctoral research careers.

A researcher in this group is
and/or their research outputs in their early post-doctoral careers are considered likely to become future leaders in their field.

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.

A researcher in this group is recognised by all or the over-riding majority of reviewers as having the potential to establish him/herself as a researcher (demonstrated by research products).

This category
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 was introduced to draw an increased number of researchers with potential from disadvantaged backgrounds as well as women into research. It also caters for persons previously established as researchers who have returned to a research environment after periods in industry or elsewhere. Applicants must demonstrate that they could not realise the potential or sustain their research ability by virtue of a lack of a research environment, or time spent in industry, or on maternity leave, or raising a family. For candidates to qualify for this category the employing
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.

The institution must have demonstrated its financial commitment towards a development strategy for the staff member concerned.
2002: Alignment of rating and proposal processes.

2003: Adoption of a uniform system for evaluation and rating for all disciplines

2003: Sub-categories A1, A2 and B3 re-instated in the definitions of rating categories as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
<th>Sub-category</th>
<th>Description</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>
<td>A1</td>
<td>A researcher in this group is recognised by all the reviewers as a leading scholar in his or her field internationally for the high quality and wide impact (i.e. beyond a narrow field of specialisation) of his or her recent research outputs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A2</td>
<td>A researcher in this group is recognised by the over-riding majority of reviewers as a leading scholar in his or her field internationally for the high quality and impact (either wide or confined) of his or her recent research outputs.</td>
</tr>
<tr>
<td>B</td>
<td>Researchers who enjoy considerable international recognition by their peers for the high quality of their recent research outputs.</td>
<td>B3</td>
<td>Most of the reviewers are convinced that the applicant is an independent researcher enjoying considerable international recognition for the high quality and impact of his/her recent research outputs.</td>
</tr>
</tbody>
</table>
APPENDIX TWO: RGD/FRD/NRF Research Programmes 1983-2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>Main Research Support Programme introduced</td>
</tr>
<tr>
<td>1990</td>
<td>Core Programmes commenced (announced in 1989)</td>
</tr>
<tr>
<td>1996</td>
<td>Open Research and Directed Programmes commenced (announced in 1995)</td>
</tr>
<tr>
<td>2002</td>
<td>Focus Area Programmes commenced (announced in 2000)</td>
</tr>
</tbody>
</table>