



# **NRF Communique on the 2015 Review**

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25<sup>th</sup> November 2016

## 1. Introduction

The National Research Foundation (NRF) is a statutory body established through the National Research Foundation Act (Act No. 23 of 1998). The mandate of the NRF is “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 of life of all the people of the Republic.” In executing this mandate, the organisation supports the constitutional commitment to “improve the quality of life of all citizens and free the potential of each person” (visit [www.nrf.ac.za](http://www.nrf.ac.za) for more information on the NRF).

A standard expectation and practice for strengthening the delivery of the mandate of the NRF, under the authority of the Minister for Science and Technology, has been that the organisation is reviewed, approximately every five years. The last 2 reviews of the NRF were undertaken in 2005 and 2010. This communique relates to the most recent review conducted in 2015. It presents, in brief, the process, key findings and recommendations, responses and undertakings of management of the NRF, and implementation, monitoring and reporting plans of the NRF, on the responses and undertakings.

All the panel review reports sited in this communique are available on the NRF website.

## 2. Review Process

The 2015 Review of the NRF was conducted through a process that was essentially similar to its two previous reviews (2005 and 2010), except for the overall management response which took a different approach.

The 10 NRF business units were reviewed by cluster-specific panels in the clusters as presented below:

### **Biodiversity and Environmental Sciences Cluster:**

- South African Institute for Aquatic Biodiversity (SAIAB)
- South African Environmental Observation Network (SAEON)
- National Zoological Gardens (NZG) of South Africa

### **Nuclear Sciences Cluster:**

- iThemba Laboratory for Accelerator Based Sciences (iThemba LABS)

### **Astronomy Cluster:**

- South African Astronomical Observatory (SAAO)
- Hartebeesthoek Radio Astronomy Observatory (HartRAO)
- South African Square Kilometre Array (SKA) Project in terms of its human capacity development and science engagement components only

### **Science Engagement Cluster:**

- South African Agency for Science and Technology Advancement (SAASTA)
- Science engagement activities of all NRF business units

### **Research and Innovation, Support and Advancement (RISA)**

- RISA is the NRF grant making pillar for research and scholarship support

Each cluster panel produced a review report for the cluster.

The management of the individual business units produced a business-unit-level management response to the respective cluster reports.

A “Synthesis Review Panel” considered all of the above reviews and management response reports, interviewed key individuals and delivered as an output, a “Synthesis Report”.

Whereas with the two previous NRF reviews the overall management response was confined to responding to the specific recommendations appearing in the Synthesis Report, on this occasion senior management chose to develop a more comprehensive and holistic response that looks beyond the period of focus of the Synthesis Report. This difference in approach, in addition to responding to the Synthesis Report, also considered: (i) matters raised in the cluster-level reports and management responses, which were not carried through to the Synthesis Report; (ii) matters with regard to the reviews, that were explicit or implicit in the Review Terms of Reference (ToR), which have not been addressed; (iii) dimensions of the review which were not included in the 2015 Review Terms of Reference but, with the benefit of hindsight, should have been included; (iv) prevailing, anticipated and future relevant policy and legislative environment; and (v) key circumstantial factors such as the National Development Plan (NDP - *Vision 2030*) and the National Transformation Agenda that is gaining momentum.

All relevant reports have been submitted to, and engaged by, the NRF Board and the Ministry for Science and Technology.

### 3. Key Findings and Recommendations

#### **Overall**

Overall, the 2015 review gives a favourable appraisal of the NRF but makes some recommendations on how the NRF should optimise its functioning and effectiveness through its current mandate, resources, structure and operations. It specifically recognizes a necessity and role for the NRF in re-shaping and strengthening the National System of Innovation (NSI), in collaboration with other national role players.

#### **Transformation**

The need to address transformation has been persistently highlighted in all three Reviews, including specific reference to the need to increase the rate of transformation among the research cohort within the National Research Facilities (NFs). The measures of transformation should be aligned and integrated with other components of the teaching and training system to ensure an integrated approach to transforming the scientific landscape.

#### **Role and Mandate for NRF**

The issue of apparent overlap of mandates between the Department of Science and Technology (DST) and the NRF has been raised repeatedly and the recommendation is that the Department, in consultation with the NRF, should clearly demarcate the spheres in which the NRF is to fulfil its mandate.

#### **Peer Review and Individual Rating Systems**

There is recognition that robust peer review systems are central to research grant making agencies and thus there is an acceptance that this is central to the business of the NRF. In all reviews of the individual rating system over the past 15 years (as part of the NRF review or dedicated review of the rating system), the overall outcome was a recommendation that the system be retained but that certain specifics be addressed or improved. There is an acknowledgment that the NRF rating system is often used as a benchmark for quality and academic strength of an individual and has benefits for the institutions as well as individuals. Benefits cited include the ability to attract funding, increasing one’s prestige as a leader in one’s field of research, contributing to an institution’s research productivity and reputation, and enabling the researcher to reflect on their own research and to receive feedback.

Review matters highlighted as needing attention included increasing transparency, using reviewers more efficiently, improving the efficiencies of processing of applications, provision of feedback, and rating of individuals (current historical system) vs rating of research groups.

### **Science Engagement**

Areas of commendation were the following:

- SAASTA seen as having established a strong brand and being a lead institution in Africa for public engagement with science;
- Science engagement being elevated to corporate level within the NRF;
- Science engagement incorporated in the South African government policy;
- The wealth of programmes on offer within SAASTA; and
- The “Big Science” projects in Astronomy which offer science engagement platforms.

Areas of concern needing attention were the following:

- The absence of a clear mandate for science engagement in the NRF Act;
- The need for SAASTA to play a stronger role in facilitating, co-ordinating and entrenching science engagement and communication activities across the NSI.
- SAASTA should develop capacity for monitoring and evaluation using a wider range of indicators which address social, economic and scientific factors.

### **Structures**

The reviews highlighted the need for interrogation and resolution of the following matters which relate to organisational design as well as governance, management and advisory structures:

- At least the NZG research component if not the entire NZG, remaining within the NRF in the context of the proposal to transfer the NZG to SANBI;
- The establishment of a unified Radio Astronomy National Facility by bringing together existing related structures;
- The need for dedicated corporate level leadership for the NFs;
- The establishment of a policy advice function within the NRF which can provide strategic analysis and fore-sight capacity for the NRF; and
- The need to look into the establishment of advisory structures for the NFs.

### **Funding**

The reviews found that the budget allocation to the NRF (inclusive of all business units and NFs) is grossly inadequate and urgently needs to be reviewed. More specifically, it is felt that the parliamentary budget versus strategic allocations, need to be revised to ensure that the NRF can deliver on its mandate. It is further strongly expressed that Science Engagement will remain on the periphery, with lower priority, unless it is adequately resourced.

## **4. Responses and Undertakings**

### **Transformation**

In responding, the primary focus of the NRF is on addressing gender and racial imbalances in the S&T workforce, while not neglecting other dimensions of transformation (for example socio-economic status, disability, institutional, knowledge areas). Furthermore, the NRF's transformation agenda goes hand-in-hand with excellence and the transformation of the knowledge enterprise more broadly. While the NRF has made transformation a priority since

inception and while recognising the achievements over the last few years (Black NRF-rated researchers, number of PhD holders, etc.), this matter is of great importance given the modest change within that period.

The NRF recognizes that it will not be able to transform the science and technology system without the support or partnership with all players from the different sectors, particularly universities as the main producers of human capital. As a start in expressing its commitment to transformation, the NRF has set up a Transformation Task Team to define what we mean by transformation, identify appropriate indicators and ensure alignment of these with the teaching and training system as well as other national priorities such as defined in the NDP. In driving its transformation agenda, the NRF will build on historical successes and known challenges.

### **Role and Mandate for NRF**

The NRF has predominantly functioned and been viewed as a transaction-based organization which moves money from one entity (primarily the DST) to others, and the tendency to be reactive and by implication a follower, as opposed to being proactive and being a leader. This despite the fact that the NRF has shown over the last 15 years that it has high level knowledge and capacity of international standing at various national research facilities; good systems within RISA to deliver various funding and rating systems to the NSI, the fact that the NFs are now functioning at an internationally competitive level and the fact that, through its international unit it has relationships and partnerships with a variety of players in the global science system. What this all translates to is that the NRF has not optimised leveraging its strategic position in the NSI to advance delivering on its mandate. As a public entity that is designed to serve the South African society, it is imperative that we are able to influence and impact the society within the scope of our mandate, beyond the transaction interactions.

Moving forward, the NRF plans to interact more closely with the policy environment and contribute to shaping dialogues and directions of the higher education landscape through the knowledge resources, networks and infrastructure to which it has access. The NRF sees this move as being a shift from a transaction organisation to a change agent and believes that in doing this we will improve our understanding and influence of the environment within which we operate and thus give more effective expression to our mandate. A key imperative to being an effective change agent is more effective integration and co-ordination of key NRF activities and a Strategy to hold this together. As part of this shift towards an agent of change, the NRF will intensify its activities designed to optimise synergies with the various other players and stakeholders (nationally and internationally) within the global science community. Discussions around effecting this shift will be driven at the level of accounting authorities (NRF Board and Minister for Science and Technology)

The NRF is pleased that the NRF Act is being amended such that Science Engagement and NFs are now explicitly expressed as part of the mandate of the NRF. These revisions will better enable the NRF to influence and impact the society within the scope of its mandate, beyond the transaction interactions.

The NFs are uniquely positioned as service providers and knowledge leaders with distinctive capability to contribute to relevant research capacity, human capital development and advancement of science. Their contributions to the total research ecosystem of the country and accessibility to everyone makes NFs a vital part of the NRF. The NRF further plans to play a more prominent role in the development and placing of national research infrastructure platforms across the NSI. The form of these new platforms may or may not follow the NF structure in that they may be virtual, dispersed, of specific fixed duration, or still at the stage of conceptualisation.

### **Peer Review and Individual Rating Systems**

In the area of reviewing of funding applications, the NRF has already started working on clustering and implementing calls and reviews for similar instruments. In addition, the concept and practice of virtual reviews for processing large numbers of scholarship applications, has been piloted. Operational benefits, efficiency gains and savings from these approaches have already been evident.

On the efficient utilisation of reviewers, the NRF plans to establish a College of Reviewers and Standing Review Panels for various disciplinary domains

The NRF management has reservations about providing anonymous verbatim review reports to applicants primarily because the research community of South Africa is a relatively small one and there is likelihood that anonymous reports may be recognisable and this in turn may impact on the willingness of reviewers to participate in reviews. The NRF will however explore this option, in consultation with the key role-players from the stakeholder community.

An NRF Rating has over the years become a brand that is unique and of high value, even without the provision of funding to the rated scientist at the time of being rated. South African institutions recognise this value through various means. The NRF will reflect on how to strengthen the system into the future.

The NRF acknowledges the potential benefit that could be gained from the rating of groups as opposed to, or in addition to, rating of individuals. The NRF undertakes to take a closer look at other best practices of the rating of groups as part of considering the addition of group rating for defined purposes.

### **Evaluation of the NRF**

The NRF has reflected on the practice of running the evaluation of itself. The view is that management needs to work with the NRF Board and the DST to interrogate this practice. Key aspects to be interrogated include the following:

- Stronger ownership of the institutional evaluation process by the Minister of Science and Technology as the custodian of policy that governs the NRF.
- Optimal use of appropriate evaluation and monitoring expertise.
- Strengthening the independence of the institutional evaluation exercise by considering contracting external experts to run these exercises as opposed to NRF using its own internal capacity and expertise.
- In the case of evaluation of performance of institutions, a clear distinction being made between scientific, operational and strategic management evaluation. In addition, a conscious and deliberate decision being made on whether these distinct evaluations are to be conducted jointly, simultaneously or separately.
- Formulating more bold and direct questions to be asked in the evaluation.

### **Science Engagement**

We believe it is important for the science engagement function to go beyond advocacy and the promotion of science at school, to the enhancement of engagement between science and society. Accordingly, the NRF welcomes the recently published Framework for Science Engagement, whose effective implementation will depend on being appropriately resourced. The NRF has in the interim developed a framework for Reporting on the Performance of the NRF which includes performance indicators on enhancing the engagement of science and society. This will enable the NRF to monitor its contribution and impact in changing and transforming the science and technology system in the sphere of science and society.

The NRF embraces the idea of strengthening its science engagement through more effective transfer of best practice by using science centres, the NFs and “train-the-trainer” approaches using educators. The NRF will also be taking a closer look at embedding science engagement within granting activities as was the practice in the Foundation for Research Development (FRD).

### **Structures**

It is common practice that a response to a comprehensive review of an organisation should include an assessment of its governance and management arrangements to ensure an improvement of “fitness-for-purpose” and optimisation of efficiency and effectiveness, as part of the implementation of the response undertakings. Working on this across the NRF is bound to be a difficult, sensitive and slow process as dealing with people is central to navigating this. The journey will touch on matters such as:

- Improving the clarification of demarcation of roles and responsibilities between the DST and the NRF especially with regard to human capacity development, infrastructure provision and science engagement;
- Strengthening the strategic role of the NRF Board and its fulfilment of this role;
- Strengthening the “One NRF” identity, behaviour and functioning (strategically and operationally), an achievement that is essential to enabling efficient use of all the resources available to the NRF. Interventions to pursue this will include: policy development to drive co-ordination but ensure transparency and accountability; rebranding the NRF as a single organisation and development of specific cross domain projects;
- Looking into the re-establishment of a Policy Advice Unit, or an equivalent; and.
- Reconceptualising structure at executive level.

### **Funding**

The ambitious intentions articulated in this review response will unlikely be realised without overcoming the resource constraints that have been recognised as a limiting factor which also threatens the medium-to-long term sustainability of the NRF. While the organisation will include aspects beyond finance (e.g. human resources and infrastructure) in dealing with resourcing, the financial aspect will be the priority focus as success in dealing with all the resourcing aspects is highly dependent on success with the financial aspect. Given the urgency of dealing with this subject, the organisation has already initiated a response and is taking an integrated two-part strategy approach – one that tackles the immediate demands and another that focuses on the immediate-to-long-term growth and sustainability of the organisation. The two key strategic initiatives that are expected to lead developing solutions for this challenge and threat are: (i) the Strategy for the Operational and Financial Sustainability of the NRF; and (ii) the development of a Strategic Resource Allocation Model (SRAM) to align a goal-oriented planning framework with resources, outputs and outcomes. Among others, it is anticipated that approaches will include the strengthening of mutually beneficial and sustainable partnerships which will include the private and public sector, international as well as domestic. These efforts will also build on some of the already existing partnerships such as the international bi- and multi-lateral science and technology collaborations that South Africa is a part of; the research collaboration partnerships at the NFs; and the Brazil, Russia, India, China and South Africa (BRICS) partnership. The NRF will also be conducting a thorough analysis of especially its science research and technical capacity to enable the NRF to put measures in place to ensure its long term sustainability.

## **5. Implementation, Monitoring and Reporting**

The NRF is committed to implementing the undertakings it has made in responding to the 2015 NRF Review. As part of rolling out this commitment, the NRF has triggered a structured monitoring and reporting process on progress with implementation of the undertakings. The plan is that this structured reporting will happen formally, at least twice per annum, at the level of the Executive top structure and the NRF Board. This reporting will also be the source material for reporting progress through the statutory NRF Annual Performance Report and accordingly to the public.



## **Annexure: List of Acronyms and Abbreviations.**

|              |   |
|--------------|---|
| BRICS        | Brazil, Russia, India, China, South Africa                  |
| DST          | Department of Science and Technology                        |
| FRD          | Foundation for Research Development                         |
| HartRAO      | Hartebeesthoek Radio Astronomy Observatory                  |
| iThemba LABS | iThemba Laboratory for Accelerator Based Sciences           |
| NDP          | National Development Plan                                   |
| NF           | National Research Facility                                  |
| NRF          | National Research Foundation                                |
| NSI          | National System of Innovation                               |
| NZG          | National Zoological Gardens                                 |
| RISA         | Research and Innovation, Support and Advancement            |
| SAAO         | South African Astronomical Observatory                      |
| SAASTA       | South African Agency for Science and Technology Advancement |
| SAEON        | South African Environmental Observation Network             |
| SAIAB        | South African Institute for Aquatic Biodiversity            |
| SARChI       | South African Research Chairs Initiative                    |
| SKA          | Square Kilometre Array                                      |
| SRAM         | Strategic Resources Allocation Model                        |
| ToR          | Terms of Reference  |