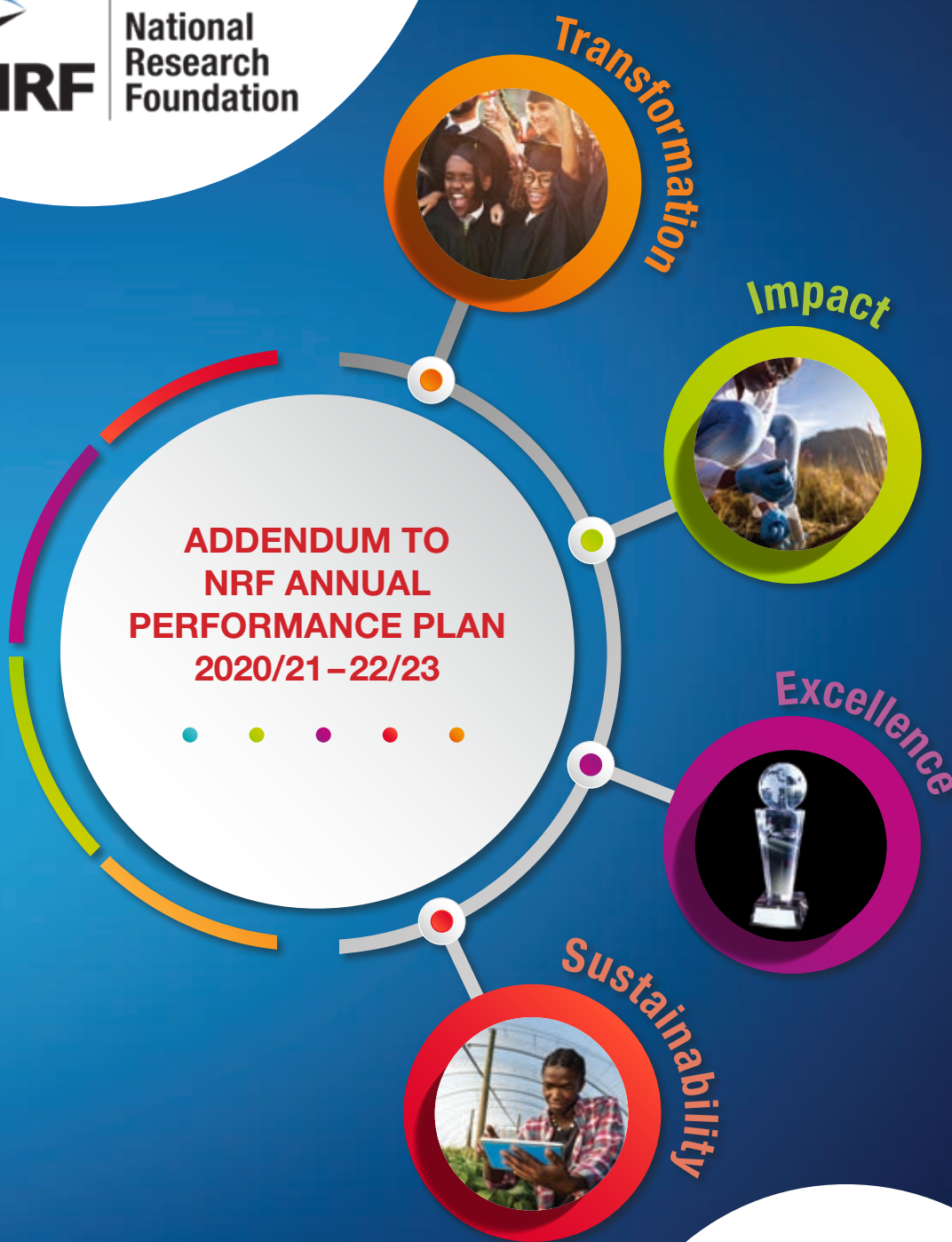




National  
Research  
Foundation



science & innovation  
Department  
Science and Innovation  
REPUBLIC OF SOUTH AFRICA

Amendments to 2020/21 performance plan and targets based on receipt of a revised MTEF allocation arising from budget reductions due to the COVID-19 pandemic

## OFFICIAL SIGN-OFF

### Official Sign-off

It is hereby certified that this addendum to NRF Annual Performance Plan for 2020 to 2023:

Was developed by the management of the NRF under the guidance of the Board,

Takes into account all the relevant policies, legislation and other mandates for which the NRF is responsible, and

Accurately reflects the amendments to the NRF performance and targets against pre-determined objectives for the first year (2020/21) of the MTEF period 2020/21 to 2022/23 as a result changes in the service delivery environment and budget cuts due necessitated by government's response to the COVID-19 global pandemic.

#### Mr B Singh

Chief Financial Officer

Signature:  \_\_\_\_\_

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Chief Executive Officer

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Chairperson of the Board

Signature:  \_\_\_\_\_

*Approved by:*

#### Dr BE Nzimande, MP

Minister of Higher Education,  
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Signature:  \_\_\_\_\_

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# 1 Introduction

The COVID-19 global pandemic has resulted in the declaration of national state of disaster by the President of Republic of South Africa in order for the country to manage the spread of infections, save lives and minimise the socio-economic damage. The measures that have thus far been enacted and which may continue for the most part

of the 2020/21 financial year have had a substantial impact on the economy, public finances and the immediate service delivery environment of many businesses and organs of state. This has necessitated the re-allocation of already stretched public financial resources towards emergency COVID-19 mitigation measures and the tabling of an updated budget by the Minister of Finance.

The NRF MTEF allocation has been revised as follows:

**Table 1: High level revised MTEF allocation due to COVID-19**

High level summary of revised MTEF allocation due to Covid-19 (R'000)				
	2020/21			
	Split per final MTEF allocation 16 Feb 2020	COVID-19 cut	Revised allocation	% Change
<b>Baseline allocation (PG)</b>	<b>966 097</b>	<b>(96 610)</b>	<b>869 488</b>	<b>-10%</b>
<b>D SI Contact allocation</b>	<b>2 824 035</b>	<b>(656 645)</b>	<b>2 167 390</b>	<b>-23%</b>
SARAO - SKA	780 778	(324 000)	456 778	-41%
Human Resource Development	1 569 775	(253 671)	1 316 104	-16%
Research Development Infrastructure	176 575	-	176 575	-0%
Science Missions	234 328	(36 974)	197 354	-16%
Science Engagement	62 579	(42 000)	20 579	-67%
<b>Total MTEF</b>	<b>3 790 132</b>	<b>(753 255)</b>	<b>3 036 877</b>	<b>-20%</b>

NRF's response in Government's interventions to the pandemic has been multifaceted inter alia, through management of National Ventilator Project (VNP) for the local design, development and manufacture of respiratory ventilators, as carried out by the NRF-SARAO; provision of assistance in setting up and operating data and modelling capability by NRF-SAEON; facilitation of the COVID-19 Africa Rapid Grant Fund through NRF-RISA and support to science journalist interns in their coverage of the COVID-19 pandemic in various South African languages through NRF-SAASTA. While these initiatives place the NRF at the forefront of initiatives

in combatting the virus, in implementing the cuts, the organisation has sought to preserve the long-term sustainability of the national science and innovation system, which is critical in finding fit for purpose solutions to South Africa's current and future societal challenges such as the COVID 19 pandemic.

This addendum provides a summary of the impact that the change in the service delivery environment and the budget cuts will have on the service delivery programmes and performance targets for 2020/21 financial year. The full review and possible

amendments to the Strategic Plan and the outer years for Medium Expenditure Framework (MTEF) and Medium Term Strategic Framework (MTSF) will commence with development of the Annual Performance Plan for the next MTEF cycle.

This amendment to the APP for 2020/21 follows a format that includes brief outline of areas affected by the budget cuts, overview of implications on NRF programmes, assessment of anticipated changes to performance targets and ends with financial overview including the budget allocation per programme.

## 2 Areas affected by the implementation of the revised budget

The approach adopted by the NRF ensures that the reductions, are largely made up by deferring or postponing certain non-critical infrastructure projects, placing a temporary moratorium on filling of vacancies; reducing operating costs; cancelling public facing science engagement events and scientific conferences as large gatherings are prohibited; and application of differentiated cuts on research funding. Care has been taken to ensure that active graduate internships; postgraduate student bursaries; postdoctoral fellowships; and research grants made to early and emerging career researchers, are not unduly adversely affected. These cuts, if maintained for longer than 2020/21 will adversely affect the sustainability of the NRF's operations and programme delivery capacity, as well as curtail efforts to transform the national research and innovation system to become more inclusive and competitive, potentially leading to lower impact on national development by the NRF than desired.

## 3 Implications on NRF programme delivery in 2020/21

The key affected areas in the service delivery environment include the following:

- Extended closing of higher education institutions and Science Councils that receive funding from the NRF to perform predetermined research activities and postgraduate training.
- The compromised revenue earning ability of NRF – iThemba LABS from isotope sales due to travel bans and border closures.

- Restriction on physical contacts between people (social distancing), leading to cancellation of various science engagement and promotion activities, especially those involving large gatherings.
- The limited physical operations of the NRF and its network of collaborators.
- Challenges of working remotely, which is not entirely conducive to many aspects of the research enterprise.

### 3.1 Programme 1: Administration

Programme 1 is fully funded from the Parliamentary Grant (Baseline) allocation and provides for the fundamental shared services functions across the NRF. The total baseline reduction of R96m could not be fully absorbed across all business units of the NRF due to this source of funding being used mainly for fixed costs pertaining to salaries and operations. A significant portion of the cut amounting to R33m (34%) will be absorbed through further austerity measures and deferment of non-mission critical infrastructure to the outer years when funds may become available. These pertain to planned projects for renovation of buildings, IT hardware upgrades, sustainable and renewable energy initiatives etc.

#### People Management

The NRF in its strategy 2025 aims to achieve a diverse workforce; an equitable and accessible work environment; an inclusive environment where all employees are valued; a work environment free from discrimination; and a level playing field for employee success. In line with these objectives, the NRF needs to ensure that its staff complement is representative of the demographics of the country, is optimally capacitated and has the right capabilities to ensure high performance as well as have engaged employees with a high quality of work-life balance and commitment to the NRF as employer of choice for retention purposes. In the above regard among other priorities in the APP, particular attention had to be paid to the demographic profile of the leadership cohort and professional staff with regard to race, gender and people living with disabilities in the plans for recruitment. The organisation has identified this matter as being instrumental to its own sustainability and to ensuring that there is equity of opportunity for all. Another key strategic objective of the NRF is to advance a transformed, coherent, learning organisation that strives for excellence through its lived organisational culture. In order to realise all these critical performance objectives among other

interventions, the following planned APP deliverables are at risk of not being achieved or achieved at suboptimal levels:

- The plan to accelerate the achievement of employment equity targets and ensuring that the NRF succession pools are sufficiently diverse to ensure sustainability of diversity and inclusion, as well as achieve gender diversity in senior decision making positions.
- The introduction of the Employee Assistance Programme (EAP) in April 2020, that has proven to be just in time, relevant and very useful against the backdrop of the beginning and ongoing impact of COVID-19 pandemic, as well as the general NRF employee wellness challenges.
- Learning and development interventions to develop employees. Interventions planned include management and leadership development, mentoring and coaching, education assistance programmes to enable employees to pursue formal qualifications, and training and development short courses.
- Review of the NRF culture to ensure that the intended outcome of a lived culture is achieved. The review and development of a supportive and inclusive culture would ensure that the aspired diversity and inclusion through practical ways of living the NRF values by all, is attained.
- Development and maintenance of a harmonious Employee and Organised Labour/ Management Relations and lasting labour peace. In particular the potential pressure to relook the headcount flowing from budget cuts could potentially reverse for the worst, the current harmonious employee relations culture and climate. It is becoming evident that any further cuts or non-reversion to the status quo on this budget line, will lead to the unenviable situation. The NRF remuneration bill as a proportion to income has over time been fluctuating around 18 % but with the recent cuts it has already moved to 20.6%. The Board has determined the maximum threshold to be 22%.

To mitigate some of the negative impact of the budget cuts the following actions will be undertaken:

- Rethink and reshape the people management strategy to focus the available resources and refocus attention on activities that primarily ensures statutory compliance.

- Ensure business continuity by implementing a responsive moratorium on filling of vacancies to provide for critical and strategic positions to limit the negative impact on service delivery expectations and transformation.

## Corporate Relations

Building the NRF Brand within the NSI by increasing the NRF's media and public presence has proved to be challenging over this period. The restrictions on gatherings (events) has led to a significant decline in content output and engagement in this regard. However, during the lockdown period, focus will continue to be on profiling and raising awareness of the NRF's efforts in the fight against COVID-19. This includes issuing statements on the various projects undertaken by the NRF, such as the launch of the COVID-19 Africa Rapid Grant Fund, as well as various initiatives and projects to contribute to the national response to the resolution of COVID-19 pandemic.

The following noteworthy events planned for the 2020/21 period will be affected as the result of COVID-19 pandemic:

- The Nobel Inspired Lecture(s), which the NRF co-hosts with the Swedish Embassy in South Africa.
- The Science for Society Lecture (s).

To mitigate the effect of COVID-19 on the delivery of such events, online based technological platforms which includes the use of webinars will be explored.

In response to COVID-19 and related issues, NRF Research communications will focus on activities that address issues related to the pandemic, including:

- Production of a Special Issue of Science Matters, exploring COVID-19, the scientific tools being deployed in combating the pandemic and the psycho-social impact of the disease and associated containment measures.
- Publication of all the research being done by NRF funded researchers and NRF business units, with boilerplate descriptions of the research, its intended goals and likely impact on the management of the spread of the disease. This served both to build a positive reputation for the organisation and to advance science engagement / research communication.

### 3.2 Programme 2: Science Engagement

The budget for the main business unit that implements the mandate of Programme 2, the South African Agency for Science and Technology Advancement (SAASTA), has been cut by 47% overall, making precarious the ongoing sustainability of the usual portfolio of programmes susceptible this financial year. The revised activities for 2020/21 will be sustained through approximately R45m of carry forward of funds from 2019/20.

The COVID-19 regulations regarding social distancing and restricted travel, as well as the interruptions to the school calendar and the phased back to school reintegration programme which is still interrupted by infections of pupils and educators, have all had a serious impact on interventions that involve public and school participants. In this regard the following changes will be effected:

- Mass participation programmes such as Science Festivals and National Science Week have been cancelled or postponed, reducing person-to-person opportunities for science outreach with society.
- No new programmatic support will be made available to the approved network of Science Centres for 2020. Many of the smaller science centres rely heavily on the funded programmes for their sustainability. The on-site peer evaluation process that forms a crucial part of the Science Centre Accreditation process has also been halted as a result of lockdown restrictions.
- National Science Olympiads and Competitions are cancelled for the year, directly affecting overall learner and educator reach. Education programmes, such as role modelling campaigns and support for science clubs, have also been affected by the ongoing delays in the school calendar.
- The intake of youth to the National Youth Service Programme (NYS) will be reduced, thus affecting the number of unemployed graduates that will be taken up in work programmes.

To mitigate against the negative effects outlined on the service delivery outputs for this programme, a marked increase in the use of virtual platforms will continue to reach to as many beneficiaries as possible. This will include delivery of some Festivals, Science Centres' services, training of young science journalists (interns), public awareness lectures, matric classes, learner and educator support service using online and digital platforms.

### 3.3 Programme 3: Research and Innovation Support and Advancement (RISA)

In line with the NRF's commitment to its transformation agenda, no budget cuts were made against active graduate internships, postgraduate student bursaries, postdoctoral fellowships and grants to Emerging Researchers. As can be expected, the challenge in pursuing this principle will be the ability of these cohorts to timeously take-up and utilise the grants. Restrictions on research activities resulting from the national and global lockdowns may impact negatively on utilisation and uptake. Therefore, bursaries and research grants will be actively managed to minimise this impact. The total number of funded postgraduate students is estimated to be 10 200 for the 2020/21 financial year, including 4 350 honours, 3 500 masters and 2 350 doctoral students, based on the number of students who have accepted the bursaries as at 12 June 2020.

Budget cuts were applied differentially to grants for Established Researchers such as the Centres of Excellence (COEs), the South African Research Chairs Initiative (SARChI), the Competitive Programme for Rated Researchers (CPRR) and the Competitive Support for Unrated Researchers (CSUR). The total number of funded researchers is estimated to be 3 500 for the 2020/21 financial year, based on the number of researchers who have signed the conditions of grant as at 12 June 2020.

Unspent funds relating to national and international travel, conferences, meetings, workshops, etc. as a result of travel restrictions locally and abroad will partially absorb some of the budget cuts.

RISA is one of the key participants in NRF's contribution to tackling the COVID-19 pandemic, through the COVID-19 Africa Rapid Grant Fund, with the financial and in-kind support from a variety of international partners. The primary purpose of this collaboration and funding call is to support Africa's response to COVID-19, address research questions and implement science engagement activities associated with COVID-19.

#### Internships

The NRF/DSI internship programme (R59m) is funded by an allocation from the DSI postgraduate training and support budget (R36m) and by the allocation under the DSI ECSP programme (R23m). The R18m cut will be apportioned across both these



budgets and the remaining budget of R41m will fund 409 continuing interns in their second year of support and 33 new interns appointed at the DSI. Further intake of interns in the current financial year is not possible.

## Post Graduate Bursaries and Scholarships

The increase of R68m is due to unspent carry over of funds from the DHET Scarce Skills (R20m) and DSI HRD contract (R48m). The postgraduate scholarship allocation (R645m) supports free standing and grantholder-linked postgraduate students at the honours, masters and doctoral levels. Grant awards that were not taken up by June 2020 were cancelled and the released funding will be used for reallocation to registered students who do not have postgraduate funding for 2020. Extension of funding for completion of studies in 2021, for honours, final year masters and doctoral students will be considered and will require reprioritisation of savings from bursaries not taken up.

## Early Career and Emerging Researchers

Early Career and Emerging Researchers, inclusive of postdoctoral fellows are supported by an allocation from the NRF core grant and the HCD contract totalling R206m. The decrease is limited to R10,2m as carry forward from prior years (R34m) and additional Core Grant (R15m) has contained the total budget cuts of R59m. This budget supports Early Career Researchers through the Thuthuka Programme, Black Academics Advancement Programme (BAAP) which is co-funded with the First Rand Foundation, Postdoctoral Fellowships, Professional Development Programme (PDP) and the nGAP Research Development Grant. With the exception of nGAP, grant awards were made in 2019 and the 2020/21 budget is committed. All Thuthuka and BAAP grantholders are expected to take up their grant awards during this academic year. The R10m cost saving will accrue from cancellation of Postdoctoral Fellowships not taken up, deferment of nGAP grants to 2021 and lower grant expenditure in 2020 due to activities that could not occur during the National Lockdown.

In responding to NRF Strategy 2025 and the Board's expectation to support more Emerging Researchers, the funds that were previously allocated over a 15 year period towards the first cohort of six CoEs, were transferred to Emerging Researchers. If the NRF is expected to fully fund the first cohort of CoEs beyond 15 years, then such support will impact negatively on NRF's transformation agenda which focuses on, inter alia, young Black and Women Researchers. The NRF has

committed to support continuing masters, doctoral and postdoctoral students at these COEs. The estimated funding required will R76,4m over three years, which will be funded partially from budget cuts to Established Researchers funding and partially from cuts to total CoE Grants over the next three years.

## Established Researchers

Within the DSI HRD contract a cut of R56m was made against research grants. The impact of this cut on Established Researcher programmes has been limited to R30,2m, as the remainder was apportioned to Emerging Researchers and Strategic Initiatives. The core funding instruments of the Competitive Programme for Rated Researchers (CPRR) and Competitive Support for Unrated Researchers (CSUR) will be adversely affected by the budget cuts, most of which come from the human capital development contract. Current grant awards have been committed. However, a large percentage of grant-holder linked bursaries were not taken up by the deadline. These are unlikely to be awarded and taken up which will help alleviate the funding cuts. In view of the new Postgraduate Funding Policy, no new grant-holder linked bursaries will be awarded for CPRR and CSUR in the future. The Community Engagement and Blue Skies Research grants currently under commitment will be supported to the end of 2020. These two programmes will be discontinued. It is expected that within the planned NRF Research Agenda, new programmes and funding modalities/opportunities will be put in place, in line with the available budgets to support Established Researchers.

## Strategic Initiatives

In order to contain the budget cuts, the NRF has placed a moratorium on the establishment of all new Chairs or CoEs. However, the NRF may consider the establishment of new Chairs and CoEs if resources outside of the NRF become available. The operating costs (including Salaries and indirect overheads) for Research Chairs is R10m per annum and for CoEs is R11,5m per annum.

The net budget adjustment of R140,4m is due to the SARChI actual carry forward funds brought from 2019/20. The adjusted Research Chairs grant budget reflects a significant cut of R80m. Consequently, awarded running grants will have to be cut. The Research Chairs cannot be sustained on an allocation of R518m per annum. The cut of R75m was agreed to as a once-off decrease. These are 10 year commitments and unless the entire programme is reviewed and existing

grant-holder allocations are cut going forward, a minimum amount of R590m is required annually.

For the CoEs, the budget cuts amount to R45m on the DSI HRD Contract. Therefore, further funding of the first cohort of six CoEs will be at lower levels. Funding for all other CoEs will also be reduced in the 2020/21 financial year. The total amount awarded to the 'newer' CoEs is R95,4m (without any escalations) and the expectation of funding for the first cohort of CoEs is between R45m and R60,5m. The adjusted budget is Core R60,2m and DSI HRD Contract R49,3m (i.e., R109,2m), which is less than the total proposed awards. It will therefore be necessary to reduce the awards to all CoEs. We will be reconsidering the current payment model of bi-annual payments in advance to lessen the impact of the reduced awards.

In view of the budget cuts to the Science Missions contract, it is expected that within the Global Change Research Plan category of research support and human capacity development, there will be a drop of approximately 25% of the students that were planned to be supported through the funding cycle up to 2022. The set target of 207 students and fellows has been adjusted to 157. Similarly, in terms of the research outputs, it is expected that the publication outputs will be adjusted downwards because of fewer grants in the outer years.

With respect to other strategic areas such as human and social dynamics, there will not be drastic changes. The 75 grants currently funded, will run through the funding cycle up to 2022. The 34 grants currently committed to the South African National Antarctica Programme (SANAP) will be readjusted to 15 in the latter years of the funding cycle of 2021 and 2022.

The Research and Technology Fund (RTF) expects to fund 32 grants, primarily to persons from designated groups. The indigenous knowledge systems (IKS) programme currently has 32 grants, most of which will conclude in 2022. No new grants are anticipated to be awarded by the NRF because no new funding is anticipated from DSI. It is our understanding that the research funding will be moved to the National Indigenous Knowledge Systems Office (NIKSO). There is also a request by the DSI to fund the establishment of a CoE in IKS hosted at UKZN. Regrettably, no resources have been allocated to the NRF for this CoE.

## International Agreements and Collaboration

The net budget decrease is R26,1m which results from a R10m cut to the STAF budget (mainly in respect of travel and conferences), and the balance to the OR Tambo chairs. It is important to ensure that the NRF and DSI (South Africa) maintain its reputation with its foreign partners. In doing so, no new bilateral agreements without clear funding commitments should be entertained.

## Travel Training and Conferences

The R9,6m cost savings will result from the cancellation of conference and travel grants that could not be taken up during 2020. In addition, new travel grants were not approved for 2020. Instead applicants were afforded the opportunity to amend the application and submit for the 2021 academic year. However, the implication of the cancellation of travel grants has meant a loss of 270 grants that would have contributed towards the 2020 grants targets. Due to the budgets cuts, close to 30% of the targets for planned travel grants in outer years 2021 and 2022 will be reduced.

### 3.4 Programme 4: National Research Infrastructure Platforms (NRIP)

The National Research Facilities serve as the extension of the research infrastructure of the higher education institutions (HEIs). They are responsible for (i) providing high-end research platforms to researchers and postgraduate students; conducting original research in partnership with researchers from HEIs; (iii) training of the next generation of researchers and postgraduate students through co-mentorship and co-supervision respectively; (iv) providing platforms for the public to engage with the science that they perform; as well as (v) undertaking technological development and innovation derived their science. With the closure of public operating spaces broadly, but in the research and higher education system in particular, it is thus anticipated that there will be significant disruption of the ability of the National Research Facilities (NFs) to discharge the above functions.

At a generic Programme 4 level the cuts have been applied largely to savings on operational and travel costs due to the COVID-19 restrictions. Furthermore cuts have been applied to collaboration and bilateral arrangements, particularly in the case of Astronomy-related projects under the BRICS framework. However, there have not been any cuts applied to budgets associated with South Africa's membership of

multilateral global research infrastructures, such as the Joint Institute for Nuclear research (Russia), the European Centre for Nuclear Research (CERN) and the Europeans Synchrotron Radiation Facility (ESRF). The nature of these obligations does not lend itself to cancellation or postponement as these facilities have to be run, operated and maintained regardless of circumstances.

Most of the NFs, do not have a dedicated research budget and have to raise same from open competitive sources within and outside the NRF. One of these sources, the Research & Innovation Reward Programme (RIRP) has been cut by approximately 75% in the 2-year period 2019-2021. Unspent funds and reduced travel will help through this year, but there will still be expected moderate drop in student numbers and papers from next year onward. If the situation stays this way, however, a 50% drop in student numbers in 2-3 years can be expected for some NFs, and as much as 50% drop for research publications in 3-5 years (impact is delayed due to nature of work).

In the overall, performance targets for 2020/21 are unlikely to be significantly impacted, other than the fact that postgraduate students are unlikely to complete this year and will require extension support next year. Also, the moratorium on staff appointments will likely impact performance targets related to improvement in representation of employees from designated groups.

The disruptions by COVID-19 induced budgets cuts and their impacts are discussed below generally and in the context of each NF.

### **South African Astronomical Observatory (SAAO)**

At SAAO, the MTEF baseline grant covers almost exclusively salaries and does not leave much room to cover operational requirements. Therefore the cut implemented on the MTEF baseline grant for 2020/21 will be only manageable internally at SAAO mostly from savings due to frozen positions and, secondly, savings from travel related expenses. The cuts place the sustainability and effectiveness of operations even closer to the margin.

However, if the same level of cuts continue for the whole MTEF cycle, the impacts are more drastic. Frozen positions include critical IT, Astronomy, and Instrumentation personnel. This risks stability of operations and development, meaning further *decrease in research output and efficiency*. While the COVID-19

has forced upgrades to remote observing capabilities (thereby saving on travel) staff are still needed to operate, run, and develop the software and hardware for it to work efficiently.

Furthermore, such longer term cuts would very likely lead to significant steps *backward in the transformational profile progress* of the recent years. This is due to the fact that many of the new younger employees from the designated groups in engineering and astronomy will simply be discouraged by lack of future career prospects, while simultaneously tending to be the most employable elsewhere. There has already been evidence of this kind of trend. Staff attrition will be very negative for both transformation goals and operational efficiency.

Due to restrictions on large gatherings, on the science engagement front, the SAAO will likely incur an estimated R1m loss of income from Sutherland tours and visitors. Furthermore, the SAAO's performance in the area of reach for the general public, educators and learners will be severely compromised as its science engagement programmes have been brought to a halt by the COVID-19 restrictions.

A mission critical component to the existence of SAAO is the continuing NRF/ DSI contribution to the SALT Operations Levies. It is extremely important these continue to be funded at the required level. The commitment in 2021 has been possible to meet through redirection of funding cuts from other aspects of research infrastructure funding. However, this obligation will be due and payable next year still and going forward.

### **South African Institute for Aquatic Biodiversity (SAIAB)**

The provision of existing Infrastructure Platform services/operations have been adversely affected by reduction in the MTEF baseline budget, with significant implications for users and/or beneficiary categories, particularly with regard to the future in relation to Transformation and Excellence. All Institute running budgets have been cut which will impact on the ability of the Institute to deliver on specific projects. Internally funded projects from the MTEF baseline budget have been cancelled or reduced in scope. The performance targets associated with peer reviewed research output, student numbers and student demography will mainly be felt in 2021/22 and 2022/23, with projected declines of as much as 50% if the funding cuts lead to re-baselining of the budgets going forward.

The maintenance and operation of key research platforms has had to be cancelled or postponed, which includes universal access to the Institute, research vehicles, Collections office upgrades etc. The cut in African Coelacanth Ecosystem Programme (ACEP) funds will result in far fewer sea days, postponement of research projects to 2021/22 and reduction in equipment replacement in key platforms such as the Acoustic Telemetry Array Programme (ATAP) and the Marine Remote Imagery Programme (MARIP).

The long awaited employment of three young black scientists at SAIAB as part of its Transformation Programme has been cancelled due to the budget cuts. This has been a long-term programme and the identified candidates have just graduated with their PhD's. This has had a massive impact on SAIAB's internal transformation initiative.

### **iThemba Laboratory for Accelerator Based Sciences (iThemba LABS)**

The COVID-19 restrictions and associated budget cuts will significantly undermine iThemba LAB's flagship project, the South African Isotope Facility Project (SAIF), a renewal and sustainability strategy for the NF to ensure its future survival, relevance and value proposition.

The travel bans and border closures and operational shutdowns in the international isotope markets will have a drastically negative impact on iThemba LAB's revenue earning ability. Much of this funding was aimed at sub-venting the costs of the implementation of the SAIF Project, particularly in relation to establishment of research and innovation infrastructure.

The general economic meltdown globally has led to significant collapse in the value of emerging market currencies, with the South African Rand being one of the hardest hit. This has led to escalation in the Foreign Exchange denominated components of the cost of the SAIF Project.

The COVID-19 budget cuts, together with the global market and currency meltdowns, therefore have become part of a perfect storm for iThemba LABS which threatens to undermine its ability to deliver the SAIF Project successfully. Equally important, the moratorium on filling of vacancies will affect the acquisition of personnel to implement the project, and affect scientific productivity in terms of research outputs and student training, especially in subsequent years.

### **South African Radio Astronomy Observatory (SARAO)**

As a result of COVID-19, SARAO returned R324 million to the National Fiscus for 2020/21. The opportunity to return these funds was as a result of delayed financial obligations to the international SKA project, a delay in the acquisition of the SKA Visitor's Centre, and a small cash surplus. The delayed financial obligations to the international SKA project will commence from 2021/22, subject to the Intergovernmental Organization (IGO) financial schedule approval. Should the R324 million not be returned, South Africa would fail to meet its financial obligations to the international SKA Observatory. A decision to continue with the SKA Visitor's Centre project will be subject to a final costing and additional budget availability going forward.

The resulting impact on SARAO with respect to delivery against key performance indicators related to the operational and scientific performance of the SARAO research infrastructure platforms is negligible. However, the subsequent moratorium on recruitment could potentially impact progress with internal transformation objectives.

SARAO was mandated by the Minister of Trade, Industry and Competition to manage and coordinate the National Ventilator Project, the main objective of which is to design, manufacture and deliver ventilators to the national health sector for the treatment of COVID-19 positive patients. The first 10,000 ventilators are due to be available by the end of August. No funding was made directly to SARAO for this activity, and existing engineering and project management resources were utilised. The manufacturing and distribution of the ventilators is funded by the Solidarity Fund.

### **South African Environmental Observation Network (SAEON)**

Budget cuts to projects under the South African Research Infrastructure Roadmap (SARIR) have been made possible for 2021 due to longer take up of activities and roll out of the projects. The funding however, will be required in the following years. Cross-funding between MTEF baseline and contractual obligations makes budgeting for SAEON complicated and further complicates implications and impacts of budget cuts. The greatest impact will be felt in restricted funding for maintaining the research platforms and may cause discontinuities in long term data capture and provision, as well as student projects and their completion.

## 4 Review and amendments to 2020/21 performance targets

The contents of the following Table 2 and 3 supersedes content in Table 4 and 5 of the approved NRF APP for 2020 to 2023 related to 2020/21 targets.

**Table 2: Amendments to 2020/21 annual performance targets**

Strategic outcome	Output	Indicator count	Output Indicators		Prog	Original	Amended	Comments
						Annual Targets		
						2020/21	2020/21	
A transformed (internationally competitive and sustainable) research workforce	A transformed profile of NRF funded postgraduate students	1	Profile of NRF funded post-graduate students	Black	Prog 3	80%	75%	The reduction in the number of students awarded bursaries and the lower uptake of bursaries will impact on the transformation profile of NRF-supported students
		2		Women	Prog 3	57%	57%	No change
	A transformed profile of NRF funded researchers	3	Profile of NRF funded researchers	Black	Prog 3	42%	40%	The reduction in the number of research grants awarded will impact on the transformation profile.
		4		Women	Prog 3	41%	41%	No change
Enhanced impact of the research enterprise	Knowledge produced by NRF supported researchers	5	Proportion of peer-reviewed publications produced by NRF supported researchers relative to the number of peer-reviewed publications produced by all researchers in the NSI		Prog 3 and Prog 4	41%	35%	The impact of the COVID-19 lockdown as well as a possible increase in the number of COVID-19 related publications cannot be estimated at this stage.
Enhanced impact of science engagement (SE)	A fit-for-purpose capability for science engagement and engaged research	6	Proportion of investment in science engagement		Prog 2	3.5%	2,1%	Significant reduction of contract funding as well as the closure of schools and the moratorium on public events.

Strategic outcome	Output	Indicator count	Output Indicators		Prog	Original	Amended	Comments
						Annual Targets		
						2020/21	2020/21	
A transformed organisation that lives its culture and values	A transformed leadership and management cohort	7	Proportion of employees from designated groups at Peromnes levels 1-7	Black	Prog 1	47%	46%	Moratorium on vacancies this year will result in the status-quo being maintained.
		8		Women	Prog 1	28%	28%	No change
	Predictable and sustainable resourcing of the NRF mandate	9	Organisation overheads as a proportion of total expenditure	Prog 1	<10%	<10%	The forced reduction of shared services and operational costs will ensure that overheads remain in the target range	

**Table 3: Updated quarterly performance targets for the 2020/21 financial year**

Indicator count	Output Indicators (refer to TID)		Programme	Reporting period (Quarterly or Annually)	Annual Target	Quarterly Targets			
					2020/21	Qtr 1	Qtr 2	Qtr 3	Qtr 4
						2020/21	2020/21	2020/21	2020/21
1	Profile of NRF funded post-graduate students	Black	Prog 3	Quarterly	75%	75%	75%	75%	75%
2		Women	Prog 3	Quarterly	57%	50%	57%	57%	57%
3	Profile of NRF funded researchers	Black	Prog 3	Quarterly	40%	35%	40%	40%	40%
4		Women	Prog 3	Quarterly	41%	35%	41%	41%	41%
5	Proportion of peer-reviewed publications produced by NRF supported researchers relative to the number of peer-reviewed publications produced by all researchers in the NSI		Prog 3 and Prog 4	Annual	35%	-	-	-	-

Indicator count	Output Indicators (refer to TID)		Programme	Reporting period (Quarterly or Annually)	Annual Target	Quarterly Targets			
						Qtr 1	Qtr 2	Qtr 3	Qtr 4
					2020/21	2020/21	2020/21	2020/21	2020/21
6	Proportion of investment in science engagement		Prog 2	Annual	2.1%	-	-	-	-
7	Proportion of employees from designated groups at Peromnes levels 1-7	Black	Prog 1	Annual	46%	-	-	-	46%
8		Women	Prog 1	Annual	28%	-	-	-	28%
9	Organisation overheads as a proportion of total expenditure		Prog 1	Annual	<10%	-	-	-	<10%

## 5 Updated Financial Overview

### Introduction

The NRF MTEF allocation reduction in 2020/21 of R753 million (20%) comprises of R96 million (10%) Parliamentary Grant (baseline) cut with the balance of R657 million (23%) affecting DSI contract funding. This adjustment arising from the impact of COVID-19 is in addition to the original baseline reduction of R20 million which had already been factored into the approved APP prior to the commencement of the financial year. The amendments to the APP pertains only to the 2020/21 figures as the impact on the outer years of the MTEF period has not yet been confirmed.

The NRF's baseline has been historically underfunded and is under severe strain from past reductions due to fiscal constraints and austerity measures. This round of cuts affect all business units, particularly those funded from the baseline as this source of funding caters for the foundations core operational costs, which is largely

fixed. The decrease in DSI contract income will have an impact on Programme 3 and 4, which manage projects and directed programmes from the DSI.

The pandemic and resultant national lockdown not only affected the MTEF allocation, but also other non-governmental revenue streams. In particular, the demand for radio-isotopes produced by iThemba LABS dropped significantly, while the supply chain to international clients was severely disrupted as a result of the cancellation of international flights. In addition, the reduced funding level will result in lower interest earned on deposits as well as lower management fees earned on contract funding.

Budget cuts were apportioned across the organisation to ensure that its core mandate activities remains a priority, albeit applied differentially based on the principles adopted in this regard to ensure business continuity and support of science system.

**Table 4: Consolidated budget 2020/21**

<b>Income statement for the year ending 31 March 2021 per programme</b>							
<b>Category</b>	<b>Programme 1 Corporate</b>	<b>Programme 2 Science engagement</b>	<b>Programme 3 RISA</b>	<b>Programme 4 National research facilities</b>	<b>Total Revised budget 2020/21</b>	<b>Variance</b>	<b>Total Original budget 2020/21</b>
	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>R'000</b>	<b>%</b>	<b>R'000</b>
Parliamentary grant	65 156	27 013	470 242	307 076	869 487	-10%	966 097
DSI contract income	8 854	20 579	1 539 323	598 634	2 167 390	-23%	2 824 035
Other contract income	-	5 781	198 761	61 729	266 271	-0%	265 641
Other income*	26 711	6 746	13 051	175 957	222 468	-4%	231 096
<b>Total revenue</b>	<b>100 742</b>	<b>60 122</b>	<b>2 221 377</b>	<b>1 143 396</b>	<b>3 525 616</b>	<b>-18%</b>	<b>4 286 869</b>
Grants and bursaries	-	13 753	2 259 903	90 866	2 364 522	-6%	2 512 767
Operating expenditure	60 963	31 238	100 599	780 681	973 481	-6%	1 036 290
Salaries	80 307	33 993	122 363	627 770	864 433	-2%	881 790
Capital expenditure	28 962	8 805	11 002	307 507	356 276	-8%	387 593
Depreciation	-	(1 873)	(16 776)	(275 932)	(294 581)	-0%	(294 511)
<b>Total expenditure**</b>	<b>170 232</b>	<b>85 916</b>	<b>2 477 091</b>	<b>1 530 892</b>	<b>4 264 131</b>	<b>-6%</b>	<b>4 523 929</b>
Opening accumulated fund	4 604	(2 638)	(8 795)	12 394	5 565		-
Contract income carry forward	1 618	25 806	264 509	370 102	662 035		212 035
Transfer from infrastructure fund	63 289	2 626	-	5 000	70 915		25 025
<b>Net unspent funds</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>		<b>-</b>

\* Includes internal transfers

\*\* Includes internal transfers, accumulated funds and carry forward fund spending



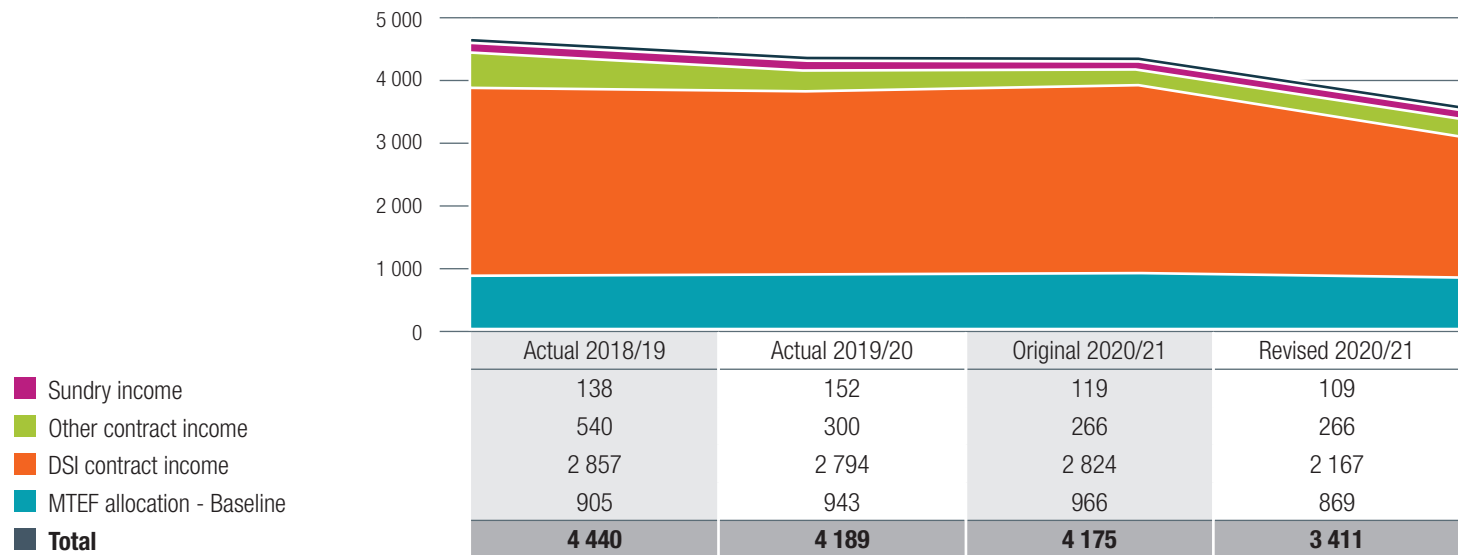
The revised budget of the NRF, as reflected in the above table, taking into account all sources of funding and implications, will result in a total reduction of R761 million from R4,28 billion to R3,52 billion when compared against the original approved budget. The corresponding expenditure is much higher due to the application of ring-fenced funds carried forward from the prior year for incomplete projects.

departments and entities (8%), and income generated internally through sales and interest accrued (3%). The Board controlled element of income remains at 25% of total income. This is further reduced to 21% when one considers that certain grants funded from the NRF baseline such as Centres of Excellence (CoE's) and the Science and Technology Agreement Fund (STAF) is determined by the DSI.

## Sources of Income

NRF funding is primarily received in four income streams: the parliamentary grant (25%); DSI contract funding (64%); contract funds from other government

**Figure 1: Comparison of net new funding 2018/19 -2020/21 [excluding internal transfers]**



**NRF parliamentary grant** (baseline allocation), which is appropriated for the delivery of the organisational mandate, is set to decrease by 10% against the original budget and by an effective 14% in real terms when compared against 2019/20 income. Noting that the baseline allocation is used to fund the core

operations of the NRF as well as a portion of student bursaries and researcher grants and a range of science engagement activities – the cuts will certainly affect the financial sustainability of the organisation not without detrimental consequences to the organisation and its mandate going forward.

In order to absorb the impact of the cut, due consideration was given to savings during the lockdown period, introduction of further austerity measures, and deferment of non-mission critical infrastructure projects. A temporary moratorium on filling of staff vacancies has already been invoked, whilst the organisation has taken a decision, where possible to save all active jobs. This will require ongoing focus and close monitoring of the key cost drivers without prejudicing the scientific and platform operations. A particular area of focus will be the salary bill where past increases have outpaced inflation over the years, whilst income remains constrained.

**DSI contract income** revenue stream is projected to decrease with 23% from 2019/20, due partially to the NEP programme funding of R160 million being funded every second year resulting in fluctuations year-on-year. In this regard, the corresponding grant expenditure has been adjusted accordingly in view of the lead times to source, procure and commission specialised research equipment by grant-holders. The DSI contract funding reduction of 23% due to the COVID-19 pandemic was largely absorbed by accumulated funding due to the delays in South Africa's international SKA obligations and spending lag on the MeerKAT extension project

amounting to R324 million. These funds will, however, be required in 2021/22 to cover cash outflows when these obligations fall due.

Other significant reductions affected the DSI Human Resource Development (HRD) and Science Engagement contracts to the tune of R254 million and R42 million respectively. The HRD funding cuts are directed towards Centres of Excellence, SARChI, Established Researchers including the Internship programme. The Science Awareness allocation reduced in line with the constraints of COVID-19, resulting in the cancellation of mass participation events.

**Other contract income** includes contracts with other public entities, private companies as well as international organisations, including government departments such as the Department of Higher Education & Training and the Department of Agriculture, Forestry and Fisheries. No change is expected in this funding stream.

**Sundry income** which comprises of income generated internally through sales and interest accrued is expected to reduce due to decreased cash-holdings and the reduced sales of radio-isotopes to the international market due to limitations on demand and distribution brought upon by COVID-19 pandemic.

**Table 5: Split of NRF MTEF Parliamentary Grant allocation by Programme**

Programme	NRF baseline allocation from DST	2019/20 Actual	2020/21 Original Budget	2020/21 Revised Budget
		R'000	R'000	R'000
1	Corporate services	97 646	93 166	85 156
2	Science Advancement	26 366	27 213	27 013
3	RISA	502 107	515 242	470 242
4	National Research Facilities*	317 266	330 476	312 076
	Deferred infrastructure projects			(25 000)
	<b>Total NRF Parliamentary Grant</b>	943 385	966 097	869 487
	<b>Year-on-year baseline movement</b>	4,3%	2,4%	-7,8%

\* National Research Facilities figure includes SAEON

The total DSI contract income for 2020/21 based on the 5 consolidated contracts is reflected in the table below.

**Table 6: DSI Contract Funds allocation by Programme**

Programme	NRF contract income allocation from DSI	2019/20 Actual	2020/21 Original Budget	2020/21 Revised Budget
		R'000	R'000	R'000
2	Science Awareness	62 579	62 579	20 579
3	Human Resource Development	1 498 421	1 569 775	1 316 104
3 & 4	Research Development Infrastructure	299 185	176 575	176 575
3 & 4	Science Missions	231 978	234 328	197 354
4	Square Kilometre Array (SKA) project	686 974	780 778	456 778
	<b>Total MTEF contract income allocation</b>	<b>2 779 137</b>	<b>2 824 035</b>	<b>2 167 390</b>
	<b>Year-on-year DSI contract income movement</b>	9%	1,6%	-22%

## Expenditure

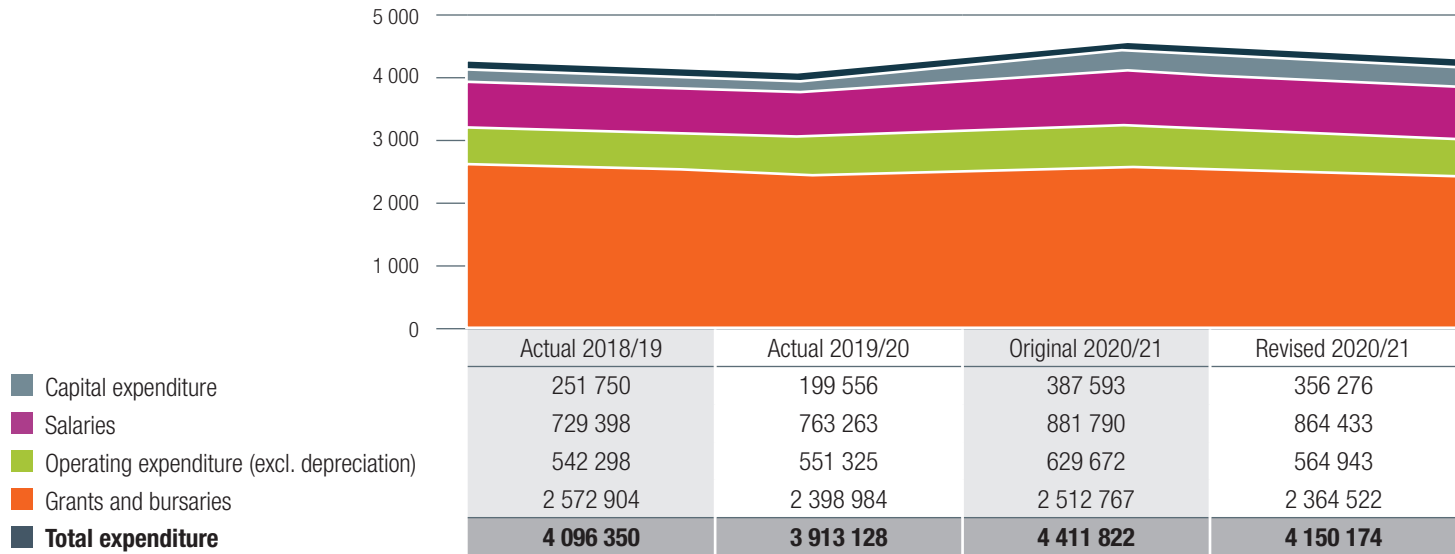
In the light of the NRF MTEF allocation falling below inflation levels, the NRF is forced to ensure that it remains sustainable over the medium term with particular focus on carefully managing the:

- Movement in the overall salary bill and its staffing establishment;
- Operational cost which generally exceeds inflation such as utilities and maintenance on specialised scientific equipment;

- Impact of foreign exchange volatility and
- Lack of flexibility in initiating necessary bold new initiatives and its impact on targets.

**Figure 2** on the next page is a graphical representation of the distribution of projected expenditure in key expense categories for 2020/21. Research grants and bursaries account for 57% of the total NRF expenditure, which is invested through research grants, scholarships and bursaries at universities through various funding instruments.

**Figure 2: Graphical representation of the distribution of projected expenditure in key expense categories for 2020/21**



**Capital expenditure** compares favorably against the prior year as expenditure towards two big initiatives, namely the South African Isotope Facility (SAIF) and MeerKAT Extension+20 antennae are incurred. Overall at other business units, capital expenditure is provided at a bare minimum in order to maintain operations based on limited resources. Some non-mission critical capital projects are delayed to outer years based on reduced funding allocated.

**Grants and bursaries** are directly linked to the movement in funding, mainly in line with DSI contract income and baseline funding. Major fluctuations in 2020/21 are attributable to the alternative year funding of the NEP programme in addition to areas affected by the budget cuts.

**Operating expenditure** for 2020/21 remained constant across the business units and these are primarily fixed, except for SARAQ which transitions into operations following the commissioning of MeerKAT, before the budget cuts. The budget cuts will be absorbed through curtailments in travel, subsistence and accommodation attributed to the pandemic, the postponements of events as well as across the board cost containment measures.

**Employee's remuneration** is forecast to increase in line with a cost-of-living adjustment awarded earlier this year before the budget cuts were made. The prior year wage freeze for senior officials has marginally reduced the impact on future recurring costs. In the same vein, the reduction in the revised salary budget is due to a temporary moratorium on the filling of staff vacancies.

## Key Challenges arising from the COVID-19 cuts

### Research Innovation Support & Advancement (RISA)

RISA's main business activity is grant funding, which comprises 91% of RISA expenditure. This expenditure in reality is characterised by investments in research grant funding, bursaries and scholarships and research equipment grants.

Over the medium-term period, the impact of the funding cuts will affect the size and number of research grants, which could have systemic repercussions with negative reputational implications. The NRF has protected the funding awards already made for student bursaries and which have been taken up as at the end of June 2020.

### National Research Facilities

The primary cost drivers at the National Research Facilities are associated with maintaining its massive research infrastructure with its unique capability to contribute to relevant research capacity, human capital development and advancement of science. The primary source of funding at the research facilities is limited to the parliamentary grant (baseline funds) and the negative income trend leaves no room for any replacements, whilst costs for maintenance and upkeep continue to increase due to their specialised nature, thus threatening the future sustainability and relevance of national facilities.

Most of the funds are used for management, operations and maintaining the respective infrastructure platforms which are largely fixed by their nature. The adjusted cut, where feasible, will be absorbed through the delay in the filling of vacancies, stringent cost containment measures in operating expenditure, a reduction in outreach activities and curtailments in travel. The delay in essential development plans can undermine the long-term viability of the National Research Facilities. Reduced operational capacity will result in reduction of generation of desperately needed income from isotope sales, which places the SAIF project at risk since the project was approved by the NRF Board based on part of its funding stream being derived from increased isotopes sales.

### Science Engagement

The cancellation of mass participation events, reach with educators, learners and public audiences will be very limited in 2020/21 due to the significant budget cut

in this area and also the significant impact of the pandemic in this key mandated area of the NRF.

In line with the DSI directive, the NRF through its business unit, SAASTA must assume a system wide coordinating function and in 2020 the SAASTA Business Review and Organisational Design project will be completed to finally inform this overarching role. If NRF is expected to give life to this model, then the budget for Science Engagement has to be increased by a substantial amount in the outer years. The budgets cuts resulted in the investment in Science Engagement activities dropping from 3,5% to 2,1%.

## Conclusion

Based on the above, the NRF has applied the cuts across all of its business units, projects and programmes for the 2020/21 financial year. It is, however, imperative that the baseline allocation of the NRF be reinstated in the outer years. If not, the sustainability of the NRF will be at severe risk. The NRF and its business units are, however, in a position to barely manage with available resources in the current year.

## LIST OF ACRONYMS

ACEP	African Coelacanth Ecosystem Programme	NIKSO	National Indigenous Knowledge Systems Office
APP	Annual Performance Plan	NRF	National Research Foundation
ATAP	Acoustic Telemetry Array Programme	NSI	National System of Innovation
BAAP	Black Academics Advancement Programme	NYS	National Youth Service Programme
BRICS	Brazil, Russia, India, China and South Africa	PDP	Professional Development Programme
CERN	European Centre for Nuclear Research	PG	Parliamentary Grant
CoE	Centre of Excellence	RIRP	Research and Innovation Reward Programme
CPRR	Competitive Programme for Rated Researchers (CSUR).	RISA	Research and Innovation Support and Advancement
DHET	Department of Higher Education and Training	RTF	Research and Technology Fund
DSI	Department of Science and Innovation	SAAO	South African Astronomical Observatory
EAP	Employee Assistance Programme	SAASTA	South African Agency for Science and Technology Advancement
ECSP	Economic Competitive Support Package	SAEON	South African Environmental Observation Network
ESRF	Europeans Synchrotron Radiation Facility	SAIAB	South African Institute for Aquatic Biodiversity
HCD	Human Capacity Development	SAIF	South African Isotope Facility Project
HEIs	Higher Education Institutions	SALT	Southern African Large Telescope
HRD	Human Resource Development	SANAP	South African National Antarctica Programme
IGO	Intergovernmental Organization	SARAO	South African Radio Astronomy Observatory
IKS	Indigenous Knowledge Systems	SARCHI	South African Research Chairs Initiative
IT	Information Technology	SARIR	South African Research Infrastructure Roadmap
iThemba LABS	iThemba Laboratory for Accelerator Based Sciences	SE	Science Engagement
MARIP	Marine Remote Imagery Programme	SKA	Square Kilometre Array
MTEF	Medium-Term Expenditure Framework	STAF	Science and Technology Agreement Fund
MTSF	Medium-Term Strategic Framework	TID	Technical Indicator Description
NEP	National Equipment Programme	UKZN	University of KwaZulu-Natal
NFs	National Research Facilities	VNP	National Ventilator Project
nGAP	New Generation of Academics Programme		



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