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1. Strategic Background

1.1.Context

The *White Paper on Science and Technology* (1996) and the *National Research and Development Strategy* (2002) emphasised the need for South Africa to transform its Science, Engineering and Technology (SET) workforce. Other policy and strategies of government, including the *Human Resource Development Strategy* (2009) and the *Medium Term Strategic Framework* (2009), flagged the shortage of high-level skills as a significant constraint in the development of the economy and society. Accordingly, South Africa must produce a preponderance of highly skilled individuals; particularly in SET, to achieve the goal of “*an equitable, sustainable, and inclusive growth path that brings decent work, sustainable livelihoods, education, health, safe and secure communities, and rural development*”.

In order to achieve the above-mentioned goal, the South African Research Chairs Initiative (SARChI) was established in 2006 by the Department of Science and Technology (DST). This funding instrument is managed by the National Research Foundation (NRF) through a contractual agreement with the DST. SARChI is a strategic intervention of the South African government designed to attract and retain research excellence and innovation at South African public universities, Research Councils and National Research Facilities. In particular, SARChI is aimed at increasing scientific research capacity through the development of human capacity and stimulating the generation of new knowledge. SARChI is also intended to support and advance transformation of South African society in terms of demographics and the knowledge economy, so that there is equitable and inclusive participation in the generation of knowledge and the generation of such knowledge translates into socio-economic benefits.

For the purpose mentioned above and to date, 210 Research Chairs under the auspices of the SARChI were awarded and are operational in various disciplines and research fields at mostly South African public universities. Thus, the SARChI has been successful in retaining leading South African researchers and attracting leading foreign researchers and expatriate researchers to South Africa. However, the SARChI has not been as successful in ensuring racial and gender equity. For instance, females comprise 38% of the Chair-holders while Blacks; in particular Africans and Coloureds are grossly underrepresented, collectively accounting for only 14% of all Chair-holders.

It is in this context that the NRF has to constantly explore innovative approaches to grow and strengthen the SARChI, especially in the face of budgetary constraints. Consequently, the NRF has initiated the establishment of international bilateral chairs with other African countries (e.g. Namibia), European countries (e.g. United Kingdom and Switzerland) and has also established co-funded chairs in partnership with other government departments (e.g. Department of Higher Education and Training), other Science Councils (e.g. South African Medical Research Council) as well as the private sector (e.g. First Rand Foundation, Anglo American and Nedbank). To further strengthen this quadruple helix of collaboration between (i) the South African government departments and their respective implementing agencies or science councils, (ii) universities, (iii) private sector partners, and (iv) international partners; the NRF has explored establishment of co-funded chairs with respective universities to accelerate transformation at like-minded universities and within the National System of Innovation (NSI) through the SARChI.

1.2.Aims and Objectives of Africa-UK- Trilateral Chairs

The core focus of Africa-UK Trilateral Research Chairs is to establish research excellence and collaboration between Africa-UK and a third African Country (Country C). The principal investigators must be eligible to be SARChI Chair-holders working with Research Chairs or leading and/or established researchers in the UK and the African continent from

universities and other public research entities to help accelerate transformation, internationalisation of the work of the Research Chairs and to maintain research excellence consistent with requirements of the SARCHI in research areas aligned to Sustainable Development Goals (SDGs) and National Priorities such as the South Africa's Medium Term Strategic Framework (MTSF) priority outcomes and the DST driven Grand Challenges (Table 1). For this reason, the main aim of the Africa-UK Trilateral SARCHI Chair is also to strengthen their international acumen and improve research and innovation capacity of public universities in order to produce high quality postgraduate students and research outputs. The following are key objectives of the Africa-UK Trilateral Research Chair:

- Build research capacity across Africa by enabling mobility of African students / experts aligned to the research projects in South Africa, UK and in country C (other African country)
- Provide mentorship and support for postgraduate students with special emphasis on PhD co-supervision
- Contribute to increasing the output of PhD's in the continent
- Build new links between SA,UK and other African higher education/research institutions

Table 1: International and National Priority Areas to which the Chairs must be aligned[#]

SDGs	MTSF Priority outcomes	DST's Grand Challenges
Goal 1: No Poverty		
Goal 2: Zero Hunger	Vibrant, equitable and sustainable rural communities contributing towards food security for all	Bio-economy: Agriculture
Goal 3: Good Health and Well-being	A long and healthy life for all South Africans	Bio-economy: Health Innovation
Goal 4: Quality Education	Quality basic education	
Goal 5: Gender Equality		
Goal 6: Clean Water and Sanitation		
Goal 7: Affordable and Clean Energy		Energy Security
Goal 8: Decent Work and Economic Growth	Decent employment through inclusive growth	
Goal 9: Industry, Innovation and Infrastructure	An efficient, competitive and responsive economic infrastructure network	Bio-economy: Industry and Environment
Goal 10: Reduced Inequality	A skilled and capable workforce to support an inclusive growth path	
Goal 11: Sustainable Cities and Communities	Sustainable human settlements and improved quality of household life	
Goal 12: Responsible Consumption and Production		
Goal 13: Climate Action	Protect and enhance our environmental assets and natural resources	Global Climate Change
Goal 14: Life Below Water		
Goal 15: Life on Land		
Goal 16: Peace and Justice Strong Institutions	A diverse, socially cohesive society with a common national identity	Human and Social Dynamics
Goal 17: Partnerships to achieve the Goal	Create a better South Africa and contribute to a better Africa and a better world	

[#]The Research Chair must be aligned to at least one SDG and at least one MTSF priority outcome and/or one DST's Grand Challenge listed above.

1.3. Guiding Principles

The following principles will inform the awarding of the Africa-UK Trilateral Chair:

- The host institution should make sure that the Research Chair will have long term-funding and each supported joint project should be a collaboration between established researchers and excellent early career researchers with direct industry linkage.
- The beneficiaries of the Africa-UK trilateral Research Chair will be bound by the terms of contract under the NRF Conditions of Grant (CoG) and will however, also be required to complete British Council reporting requirements and any other reporting as required by sponsors of the chair in Country C.
- Applications for the Chair is administered through an open call accessible to all eligible South African institutions. Where possible, applicant institutions should only nominate **female** and **Black** candidates, especially Africans and Coloureds. Nominated candidates must **meet the minimum requirements for a SARChI Chair** (Table 2). All applications will be subjected to the same robust peer-review and adjudication processes for the SARChI.
- The research proposal must be aligned to at least one SDG and at least one MTSF priority outcome and/or one DST's Grand Challenge (see Table 1 above) in relation to the priority areas mentioned in the call document.
- The applicant university/institution may nominate and submit a maximum of three (3) applications per call, who must either be from eligible females of any race, preferably Black, or Africans and Coloureds of any gender.
- Each application for the research Chair must be in alignment with the university's Programme and Qualification Mix (PQM) approved by the Department of Higher Education and Training;
- The lead Research Chair-holder and the core principal investigators should be able to split their time on agreed projects, that is, 20% in SA; 20% in UK and 10% in the third African country, over the project duration, conducting research and supervising postgraduate students as well as mentoring Emerging Researchers or Postdoctoral

Fellows. Demographics of postgraduate students supervised by the Chair at all levels must adhere to the Ministerial guidelines on improving equity.

- Proposals will be accepted for collaborations for 5 years at Tier 1;
- Sponsors will disburse the funds to the PI's once the conditions of grants have been signed and returned to the NRF.
- In instances where the third country has leveraged funding from their Science Granting Council or any other funder, a letter of support must be provided detailing the disbursement of funds to the project. Otherwise a letter of support from the institution will suffice

1.4.Accountability for Chairs

The Research Chair identified and appointed by the university/institution, at the level of a full Professor or Associate Professor benchmarked nationally will be considered. The Research Chair will fit into the normal management structures of the host institution. However, accountability for the Research Chair will reside with the Vice-Chancellor or Deputy Vice-Chancellor or equivalent responsible for research at the South African host university/institution.

1.5.Profile of Candidates

The NRF will require that the nominated candidate be eligible to hold a Research Chair. The successful candidate will be expected to enter into a performance agreement in the form of '*Conditions of Grant*'. The NRF in consultation with its partners will evaluate the performance of the Research Chair against the proposed and panel approved research plan, stated objectives and targets. Therefore, the track record of the nominated candidate is very important to the selection process and success of the Research Chair.

1.6. Criteria for the selection

The broad objectives of these Research Chairs are to accelerate internationalisation and global recognition of the work of the Research Chairs and collaborating partners, and to also strengthen research and innovation capacity in areas aligned to SDGs and national priorities. Following the peer-review of the full proposal and the *curriculum vitae* of the nominated applicants and the Research Chair’s planned collaborative projects, the NRF will issue the award letter based on the panel recommendations. The nominated Research Chair criteria that must be met by nominated candidates for approval at the Tier 1 or Tier 2 level are detailed in Table 2 below.

Table 2: Criteria for SARChI Tier 1 and Tier 2 Research Chairs

Tier 1 Research Chairs	Tier 2 Research Chairs
<ul style="list-style-type: none"> • Should be appointable at the level of a full Professor benchmarked nationally; • Should be an outstanding and innovative researcher whose accomplishments have made a major impact in their field; • Should be recognised internationally as an undisputed leader in their field and/or have received substantial international recognition for their research contributions; • Should have a superior record in attracting and successfully supervising post-graduate students and postdoctoral fellows, taking into account the practices of the field; and • Should reside full time in South Africa for the duration of the Research Chair award. Candidates from abroad, specifically African scholars and Black South Africans in the diaspora that are willing to spend at least 50% of their time within South Africa are eligible for consideration. 	<ul style="list-style-type: none"> • Should be appointable at the level of an Associate Professor or full Professor benchmarked nationally; • Should be an established researcher, with a strong research, innovation and human capital development output trajectory; • Should have the potential to achieve substantial international recognition for their research contributions in the next five to ten years; • Should have demonstrated the ability to attract and successfully supervise postgraduate students and postdoctoral fellows; and • Should reside full-time in South Africa for the duration of the Research Chair award. Candidates from abroad, specifically African scholars and Black South Africans in the diaspora willing to reside full-time in South Africa for the duration of the Chair are eligible for consideration.

1.7. Application, Review and Selection Process

The Africa-UK Trilateral Research Chair will be awarded in an open and competitive call process. The application must include, (i) the motivation by the South African public university/institution to host the Research Chair and its proposed collaborative projects with the UK and other African countries institutions (ii) the suitability of the selected Research Chair candidate for award; (iii) a research and activity plan with concomitant budget drafted by the selected SARChI candidate and, the UK and African country partners. The application(s) must be authored by the candidate(s) in consultation with the university's/institution's Deputy Vice Chancellor or equivalent, responsible for research, the UK and other African country institutional partners. A letter and/or Memorandum of Understanding detailing the nature of the collaboration and the envisaged benefits and impacts for all institutions involved should be attached as well.

Each application should give details on:

- The readiness and commitment of the university/institution to provide an enabling environment to ensure the success of the Research Chair:
 - Office and/or laboratory space.
 - Infrastructure (equipment, IT facilities, etc.);
 - Academic support (information, resource facilities and related research groups);
 - Management and leadership; and
 - Financial support (direct and indirect);
 - Reporting lines and location of the Research Chair within the university/institution structure.
- Strengths, capabilities, strategic environment and competencies of the university/institution;
- The potential of the proposed Research Chair candidate to enhance the international research and/or innovation competitiveness within the discipline;

- The potential of the research project to impact on the social and/or economic development of the country;
- The research project focus of the Research Chair and identified partners from the UK and Africa; and
- Specific objectives, outputs and outcomes for the period of funding.

The nominated candidate(s)¹ must use the NRF Online Submission System (<https://nrfsubmission.nrf.ac.za/>) to register and/or update her/his *curriculum vitae* and complete the application.

Each university/institution nominating a SARCHI candidate must submit the following documents through the online application:

- University/institution Research Strategy;
- The university's Programme and Qualification Mix (PQM) approved by the Department of Higher Education and Training;
- Details of current academic and research staff of the university/institution in the specific discipline; and
- Statistics on university/institution research outputs and postgraduate students trained and graduated in the specific discipline over the past five years (e.g. 2013-2017).
- A letter and/or Memorandum of Understanding detailing the nature of the collaboration and the envisaged benefits and impacts for all institutions involved.

¹ No commitment should be given to the candidate(s) by the university/institution before the NRF has officially informed the University/Institution of the Award by means of an award letter.

The selection of candidates will be based on the merits of each candidate's full research project proposal. This will include the strength of the candidate's profile, including her/his qualifications and experience, publications in the discipline of the Research Chair and postgraduate student supervision track records. This will also include an assessment of the candidate's research and activity plan in respect of its ability to deliver on SARChI objectives, as well as a proposed budget (see appendix A on eligible and ineligible costs).

The full proposal must be guided by:

- The value of collaboration which must be evident in the proposal, e.g., sharing of equipment not readily available in home country or having achieved an advanced stage of proposed research / technology development in area of common interest
- Proposals should be well defined, with specific timeframes and outputs for joint collaboration
- Proposals which include research to innovation capacity building, including building regional capacity in technology commercialization, would be an added advantage
- Lead applicants should have an agreement on joint IP or options to purchase IP reflected in support letters from participating institutions
- Where possible, a Community of Practice element would add value, that is, preference will also be given to proposals where the trilateral collaboration would benefit the development of a research network or support collaboration with other institutions through symposia which enables the sharing of best practices in a wider forum
- Proposals may also be multi- / inter-disciplinary, that is, the collaborating researchers can be addressing a common theme but using different approaches

2. Management of the Research Chairs

This section of the Framework and Funding Guide for Applications describes what follows after the Research Chair has been awarded to the university.

2.1. Duration of the Research Chair

The Chair will be awarded as a Tier 1 chair for a period of 5 years renewable for a further two cycles of five years. Eligibility for renewal will be entirely performance-linked and based on availability of financial resources from the co-funders of the chair. An end of project review will be conducted at the end of year 5 to determine the feasibility, relevance and impact of the initiative in future, or the need for continued funding.

2.2. Management of Research Chairs

The management of SARChI grants is described below and illustrated (Figure 1). On accepting the award and signing the Conditions of Grant (CoG), the newly appointed incumbent of the Research Chair will be required to deliver on the research activity plan that formed part of the accepted full proposal. At the end of each financial year the incumbent will be required to submit to the NRF an Progress Report (PR) addressing the milestones and expected outcomes as presented in the research activity plan in the application.

The Research Chair will be subjected to an in-depth evaluation undertaken by peers following the framework set out in the *SARChI Monitoring and Evaluation Framework*. Though this chair is not based on the standard framework of chairs, the evaluation will follow the principles as set out in the *SARChI Monitoring and Evaluation Framework*.

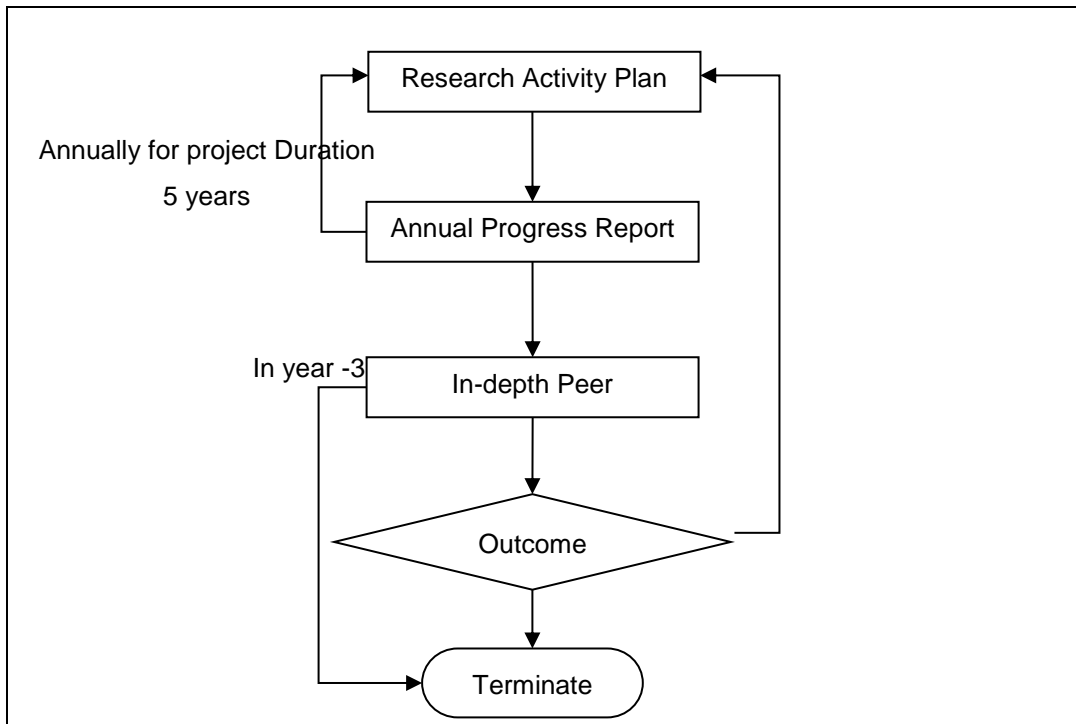


Figure 1: Management of Research Chairs over the tenure of the Research Chair

2.3.Funding Levels

The Africa-UK Trilateral chair will cover the core components of the principal investigator’s participation from each country (these will be aligned to each funder’s eligible costs for funding, keeping in mind that the chair is funded on a 50/50 basis); postdoctoral fellowships, mobility and or bursaries for postgraduate students; research operating costs; research equipment & infrastructure, and overheads for host institution.

The proposed budget must illustrate what each principal investigator will require for the running of this project, as well as provide a consolidated budget for the whole project. The budget will be approved at the commencement of the funding cycle. The incumbent will be given an opportunity, at the end of each calendar year, to make budget adjustments for the subsequent year, in consultation with the Research Chairs and Centres of Excellence (RCCE) Directorate of the NRF and the UK British Council.

Tier 1 Chairs are not eligible for additional NRF parliamentary core grant funding, except in respect of Incentive Funding for Rated Researchers. Incumbents must apply for grants for large equipment through the NRF Infrastructure Funding Instrument.

The Chairs are therefore strongly encouraged to attract additional funding for research and human capital development from other national and international funders and donors to supplement the SARChI grant.

2.4. Payment of Grants

The operational value of the grant for year 1 of the awarded Research Chair will be released to the host institution in South Africa upon receipt of the signed NRF '*Conditions of Grant*' by the incumbent and paid upon the claim of expenses by the university/institution. Student funding will be made available to successful nominated postgraduate students and postdoctoral fellows. Grants will thereafter be disbursed to the universities/institutions on an annual basis, for the approved funding period, subject to the appointed Chair meeting the '*Conditions of Grant*' and submitting a PR.

2.5. Evaluation and Impact of Research Chairs

A baseline study of Research Chairs, their institutional and intellectual environments will be conducted with each round of new awards. These studies, together with the university's/institution's Strategic Research Plans and the Research Chair's activity plan, will serve as the baseline to evaluate impact on the discipline and at the institutional level.

3. NRF Contact Persons

- Dr Nana Boaduo, Director: Research Chairs and Centres of Excellence, Tel: 012 481 4326; E-mail: nana.boaduo@nrf.ac.za
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