

Framework for SASAC High-Level Capacity Strengthening Programme

**Directorate: Human and Infrastructure Capacity
Development (HICD)
Date: March 2018**

Table of Contents

1. Background.....	3
2. Objectives.....	4
3. Programme Modalities	4
4. Eligibility.....	5
5. Application Process	5
6. Attachments.....	5
7. Selection Criteria.....	5
8. Funding Details	6
9. Award Principles	7
10. Conditions of Award.....	7
11. Reporting.....	7
12. Contact Persons	8
Annexure 1: DST Collaboration with IIASA	9
Annexure 2: Schedule for the High-level Capacity Strengthening Programme	10

1. Background

The integrated approach of systems analysis¹ allows investigation at the nexus of global challenges, enabling synergies and trade-off among potential solutions to be considered and implemented. Applied systems analysis takes into account the interconnectedness of multiple development goals. It offers the best chance of overcoming the substantial barriers to sustainability, now and for future generations².

South Africa joined the [International Institute for Applied Systems Analysis \(IIASA\)](#) in 2007 as its National Member Organisation (NMO) through the [National Research Foundation \(NRF\)](#), supported by the [Department of Science and Technology \(DST\)](#). Since becoming a member, a range of research and capacity building activities have been developed by South African research partners and IIASA. The most notable activity was the [Southern African Young Scientists Summer Programme \(SA-YSSP\)](#), launched by the Minister of Science and Technology, The Honourable Naledi Pandor, in November 2011 and hosted at the University of the Free State from 2012 to 2015.

Building on the successes of the SA-YSSP, the DST and NRF took a strategic decision to continue investing in and expanding activities around systems analysis under the [Southern African Systems Analysis Centre \(SASAC\)](#) initiative. In 2015, a consortium of four universities, namely the Universities of the [Western Cape](#), [Limpopo](#), [Witwatersrand](#) and [Stellenbosch University](#) was selected, through a competitive call, to host SASAC during 2016 to 2018. The SASAC model takes cognisance of a wider framework of engagement, additional and multi-level systems analysis capacity interventions, and a comprehensive approach to policy-related activities in South Africa and the rest of the continent. The SASAC initiative is focused in the following areas:

- A dedicated bursary programme for South African PhD students based at South African universities to complete their studies with a supervisor experienced in systems analysis. For the 2018 intake, a total of 30 PhD students have enrolled;
- A two-month Systems Analysis Capacity Development Programme for these early stage PhD students, hosted at the University of the Western Cape and Stellenbosch University respectively;

¹ The concept of Systems Analysis for this programme is a broad one and not discipline specific. It aims at developing thinking in which a range of disciplines which can be positioned within a system e.g. a health system, a socio-economic system, a governance system, a mathematical and social system, an ecosystem services system and an engineering system. The key is to be transdisciplinary and to think across sectors.

² <http://www.iiasa.ac.at/web/home/about/whatisiiasa/research/what-is-systems-analysis.html>

- **A high-level systems analysis³ capacity strengthening programme** for emerging researchers; and
- An early postgraduate education programme aimed at developing a systems analysis component or module into selected Honours'-level programmes at designated institutions in South Africa.

2. Objectives

The objectives of this funding instrument are to:

- Build a new cohort of systems thinkers with the capacity to initiate new projects and supervise postgraduate students;
- Strengthen and extend collaborative links between the South African research community and IIASA NMO countries;
- Allow all collaborating scientists, and especially the participating scientists, to learn from the experience of their colleagues;
- Foster innovative systems analysis research in South Africa and Africa; and
- Publish manuscripts in the selected research areas of the participants.

3. Programme Modalities

The three-week SASAC **High-level Capacity Strengthening Programme** will be held in South Africa at the University of the Witwatersrand (Johannesburg) during **20 August to 07 September 2018**. Thirty (30) participants will be selected to attend this programme and participants from South Africa, the rest of the continent and other [NMO countries](#) are targeted in this call. The programme is aimed at providing a broadened perspective on systems analysis and will include (i) systems analysis case studies using simulation games and modelling activities (ii) a writing retreat; and (iii) advanced lectures covering themes in both the social and natural sciences, including policy dimensions. Keynote presentations will be delivered by national and international leaders in their respective research fields, drawn from IIASA's widespread network of alumni and collaborators, as well as from the extensive international networks of excellence of the NRF. The programme will be enhanced with cultural excursions, and opportunities for networking with national research programmes. A significant

³ High-level in this context means an advanced perspective on systems analysis to produce, practice and prototype novel system-analytical approaches which enable solutions for problems that cannot be addressed by using the existing tools, or which enable addressing the problems more efficiently.

amount of time will be allocated to writing academic papers based on research that the applicants have completed.

4. Eligibility

To be eligible to participate in this programme, applicants must:

- Be postdoctoral fellows, novice supervisors, or early-career academics;
- Outline the value to be derived from participation in the programme and the potential for establishing new research projects which involve systems thinking;
- Have the ability to work independently and interact with other scientists;
- Be fluent in English and have the ability to communicate in a scientific environment;
- Be willing to participate in a range of scientific approaches related to systems analysis; and
- Have completed research which is in a near-ready state for publication.

5. Application Process

Applications for funding in 2018 must be submitted through the NRF Online Submission System by accessing the following link: <https://nrfsubmission.nrf.ac.za/>. Further instructions on the application process are available in the **2018 Application and Funding Guide for SASAC High-Level Capacity Strengthening Programme** which must be used in conjunction with this framework document.

6. Attachments

Each application must include the following attachments in PDF format:

- Copy of Passport or ID document (for South African citizens/permanent residents);
- A full *Curriculum Vitae* including a list of recent publications;
- Line manager or supervisor letter of reference
- A draft manuscript

7. Selection Criteria

All applications will be screened based on the eligibility criteria and application requirements. Should an application not be eligible it will be rejected without review. All eligible and appropriately completed applications are subjected to a competitive merit review process. The reviewers are selected by the NRF from existing reviewer databases and other sources and may include reviewers suggested by the applicant. In assessing the proposals, the reviewers'

reports are referred to and, agreed assessment criteria are applied in the form of a scorecard during the panel review process.

Table 1: Scorecard for the assessment of proposals for the SASAC High-Level Capacity Strengthening Programme

Criteria	Description	Weight
Details of Research:	<ul style="list-style-type: none"> • Description of rationale including a literature review with references • Description of the aims and objectives of the study • Alignment of applicants research area with systems analysis methodologies • Anticipated output • Clear impact of research to society • Alignment with one or more National Research Strategies 	60%
Academic/Professional Record	<ul style="list-style-type: none"> • Recent publication • Recent presentation • Student supervision 	30%
Transformation and Diversity	<ul style="list-style-type: none"> • In general, priority will be given to applicants who are female. Applicants from institutions in South Africa that are categorised as historically disadvantaged will also be prioritised (i.e. Universities of Fort Hare, Limpopo, Venda, Walter Sisulu, Western Cape and Zululand). 	10%

8. Funding Details

The NRF will cover the financial costs to be incurred by the programme as follows:

- **South African candidates:** travel costs for one local cheapest economy return trip to Johannesburg and accommodation and meals for the duration of the programme;
- **Candidates from the African Continent:** travel costs for one cheapest economy return trip to Johannesburg and accommodation and meals for the duration of the programme
- **IIASA member-country candidates outside Africa:** accommodation and meals for the duration of the programme. Travel costs to and from Johannesburg must be

covered by outside sources identified by the candidate. Some IIASA NMOs will provide travel funds, and candidates will be apprised of those opportunities by IIASA.

9. Award Principles

To ensure a rich international mix of participants and allow for exchanges and collaboration on projects that address global and regional challenges, the principal intake for the programme from South Africa (55%) and the rest of the African continent (20%) will be complemented with 25% of placements reserved for young scientists from other IIASA member countries.

10. Conditions of Award

- Successful applicants are required to complete and sign an agreement (Statement of Acceptance) that will be shared by the SASAC management team at the time of the award.
- During the programme, participants commit to completing the draft manuscript for publication. All participants must bring relevant documents (such as key references, data, graphics etc.) with them in order to complete the manuscript. The completed manuscript must be submitted for publication, by 05 November 2018, with copies of the manuscript sent to Professor Mary Scholes (mary.scholes@wits.ac.za).
- In preparation for the programme, awardees are required to prepare a five (5) minute power point presentation on their current research work.

11. Reporting

Participants are expected to submit a draft manuscript at the end of the three-week programme. Participants are also required to contribute to the evaluation of the programme by completing a survey. A report on this High-Level Capacity Strengthening Programme will be included in the SASAC annual progress report submitted to the NRF.

12. Contact Persons

For funding instrument related enquiries, please contact:

Dr Priscilla Mensah

Director: Human and Infrastructure Capacity Development (HICD)

Telephone: 012 481 4396.

E-mail: priscilla.mensah@nrf.ac.za

For Grant Management and System Administration related enquiries, please contact

Mr Stephen Dlamini

Professional Officer: Grants Management and Systems Administration

Telephone: (012) 481 4037

E-mail address: dlamini@nrf.ac.za

For technical online enquiries, please contact the NRF Support Desk during office hours from 08:00 to 16:30 Monday to Friday.

Tel: 012-481 4202

E-mail: supportdesk@nrf.ac.za

Annexure 1: DST Collaboration with IIASA

IIASA is an independent international non-governmental research organisation, headquartered in Laxenburg, Austria, that provides science-based insights into complex global, regional, and national problems. IIASA conducts policy-oriented scientific research in three global problem areas:

- i. Energy and climate change
- ii. Food and water
- iii. Poverty and equity.

Its three cross-cutting research areas are:

- i. Drivers of global transformations
- ii. Advanced systems analysis
- iii. Policy and governance.

The following are IIASA's current Research Programs:

- i. Advanced Systems Analysis
- ii. Ecosystems Services and Management
- iii. Energy
- iv. Evolution and Ecology
- v. Mitigation of Air Pollution and Greenhouse Gases
- vi. Risk, Policy and Vulnerability
- vii. Transitions to New Technologies
- viii. World Population
- ix. Water

South Africa's engagements with IIASA and specifically with regard to SASAC relate primarily to the DST's 'Ten-Year Innovation Plan,' which has identified five 'Grand Challenges' of which the latter three are particularly relevant for SASAC, serving as enhancements and being complementary to IIASA's research areas:

- i. Farmer to Pharma
- ii. Space Science
- iii. The Global Change
- iv. Energy
- v. Human and Social Dynamics.

Annexure 2: Schedule for the High-level Capacity Strengthening Programme

The intention of the SASAC high-level capacity strengthening programme for emerging researchers is to:

- Expose participants to experts in systems analysis and big ideas in a rural environment (Wits Rural Facility, Acornhoek – 20th Aug – 31st August) and an urban environment (Wits University, Johannesburg 31st Aug – 7th Sept).
- Expose participants to modelling approaches and tools used in systems analysis.
- Explore the city and the rural environments of South Africa through visits and social engagements.
- Leave the programme with a draft manuscript ready for publication and a number of new proposed research projects which involve systems thinking.

Date	Activity
20 Aug	Travel to Wits Rural Facility (WRF) and opening ceremony
21 Aug	Introduction to the WRF Interdisciplinary perspectives on systems analysis with a rural perspective (e.g. health, migration, risk and vulnerability urbanization, water and natural resource management) 5 min talks by participants
22 Aug	Systems thinking on risk and vulnerability Simulation games as new methods for understanding stakeholder interaction and decision –making in complex systems 5 min talks by participants
23 Aug	Introduction to Causal loops and systems thinking
24 Aug	Excursion to local communities and Acornhoek
25 Aug	Introduction to writing
26 Aug	Visit to the Kruger National Park
27 Aug	Systems thinking and natural resource management Systems thinking, health and migration studies Systems within a Criminal Justice Context

	Modelling exercises
28 Aug	Modelling Case Studies
29 Aug	Conceptualize problem areas and road map visioning
30 Aug	Conceptualize problem areas and road map visioning Selecting the correct journal for publication
31 Aug	Writing workshop
1 Sept	Travel to JHB and settle in
2 Sept	Shopping, tourism and relaxing and meeting Wits and NRF staff and SASAC consortium
3 Sept	Systems analysis and interdisciplinary perspectives and case studies Systems Ecology Health Systems Time for writing and reflection
4 Sept	Systems analysis and interdisciplinary perspectives and case studies Governance Urban development Time for writing and reflection
5 Sept	Systems analysis and Interdisciplinary perspectives and case studies Systems engineering Psycho-social systems Time for writing and reflection
6 Sept	Leadership Manuscript completion
7 Sept	Closing ceremony and departures