

Call for Research Proposals in Artificial intelligence for Healthcare: Early detection, diagnosis and treatment of chronic diseases in Namibia.

CALL GUIDELINES

APPLICATION PERIOD: 13 August – 27 August 2024

FUNDING PERIOD: 9 months

1. INTRODUCTION

The Science Granting Councils Initiative (SGCI) was launched in 2015 and it seeks to strengthen the capacities of Science Granting Councils (SGCs) in Sub-Saharan Africa (SSA) to support research and foster evidence-based policies that will contribute to economic and social development. The first phase of this initiative lasted for 5 years (2015-2020). Phase 2 of the initiative which ran from 2018 to 2023, emphasised projects that promoted links with private and public sector actors as well as NGOs and local communities through research. Subsequent to this is now the Phase II + supported by the Swedish International Development Cooperation Agency (SIDA) and the International Development Research Centre (IDRC). Under Phase II Plus, the National Commission on Research, Science and Technology (NCRST) secured funding to invest on research projects that are responding to Namibia's national priorities. These includes Climate Smart Technologies, Renewable Energy, Artificial Intelligence, and Space Science. It is against this background that the Call below is issued.

The NCRST is therefore calling for research proposals **from research groups** in artificial intelligence for healthcare with a particular focus on early detection, diagnosis, and treatment of chronic diseases in Namibia.

2. BACKGROUND

Early intervention is one of the most effective methods of ensuring a functional health system. Diseases such as diabetes, cancer, heart disease and respiratory infections are the leading causes of death in Africa by 2030. According to the Namibia Statistics Agency report on mortality and causes of deaths in Namibia in 2016 to 2017, cardiovascular diseases, cancer, hypertension and diabetes were among the key causes of death during the period under review.

Through surveillance, such illnesses can be detected at an early stage, for better prevention and management of noncommunicable diseases in health systems and prevention of disease progression

for individuals. The National Health Policy Framework of Namibia calls for a cross-sectoral collaboration to operationalize the early warning system, preparedness and response for the health sector. This ties in with the aspirations of the Harambee Prosperity Plan no. 2, which aims to improve access to public healthcare through means such as improving and increasing public health infrastructure.

2.1 Rationale and scope of the call

Artificial intelligence (AI) is effective in early diagnosis of chronic diseases. The health sector produces enormous data that can be combined with other data to model diseases occurrence and prevalence and use necessary tools for targeted interventions. AI has an impact in cancer therapy, diabetes prevention, and heart disease detection for targeted drug delivery and testing.

Therefore, this call seeks to promote the use of emerging technologies such as AI to improve healthcare systems and service delivery as per the recommendations of the Namibia Task Force on 4IR with regards to the use, capacity and development of core technologies.

2.2 Thematic focus

Researchers in the area of artificial intelligence and predictive analytics in the fields of epidemiology, medical biology and related disciplines in Namibia to prepare research proposals focusing on the application of artificial intelligence and predictive analytics in early detection, diagnosis and treatment of chronic disease. Project proposals from **research groups** submitted under this Call may include, but are not limited to, the following research areas:

- toxicology;
- biostatistics;
- biophysics;
- physiology;
- engineering; and
- material science and computing.

2.3 Call objectives

The Call objectives seek to establish interventions that will improve the utilization of AI and predictive analytics in the above stated areas of the health systems of Namibia. Projects should also

aim, within their proposed duration, to enhance the capacity of researchers and the respective health sectors in the practicability of artificial intelligence. The objectives of the Call are to:

- To develop AI-based approaches to predict occurrence of selected chronic diseases
- To enhance understanding of human physiology for the application of AI in targeted drugs delivery and
- To develop methods for integrating AI and traditional methods for diseases detections

2.4 Expected results

It is expected that funded projects will develop and lead to the production, for national health system use:

- Clinical Prediction Models for Application in a respective national or provincial/regional setting(s)
- Effective and efficient treatment for certain chronic diseases such as diabetes, cancer, heart disease and respiratory infections
- Enhanced collaboration and knowledge sharing between academia and industry

3. AREA OF FUNDING

Proposals should employ AI and predictive analytics in the fields related to medicine / biology and should create solutions or methods for early detection, diagnosis, and treatment of chronic diseases in Namibia.

3.1. Funding information

A total amount of N\$ 890,878.00 is available for funding this call, inclusive of all project research related costs and equipment. One project under AI will be funded for a duration of 9 months. This amount will cater for one project under any one or intersecting thematic focuses of this Call.

3.2. Allocation of funding

- Seventy percent (70%) for direct research and development related (manhours) activity costs.
- Ten percent (25%) for knowledge sharing and research uptake activities such as project workshop costs or conference travel and accommodation and subsistence allowance.

- Five percent (5%) indirect costs such as consultancy, other goods and services.

3.3. Student capacity building

- For Namibia, a maximum N\$ 150,000 (N\$ 50,000 per student) should be reserved to not more than three MSc and/or doctoral students for their field research activities within the capacity building component;
- The above mentioned should be budgeted under direct research activities.

3.4.4 Funds disbursements

Funds will be disbursed according to the table below.

Initial disbursement	Upon signature of agreement
Second disbursement	Upon approval of first technical and financial report (covering the first four (4) months of work)
Final disbursement	Upon approval of second technical and financial reports

3.4.5 Payment of funds

- Funds will be paid into the accounts belonging to the organisations/ institutions of affiliation of the Principal Investigators (PIs).

4. WHO MAY APPLY?

- The Call is open to consortia or research groups consisting of researchers, industry practitioners from universities, public/private research institutions and other relevant institutions in Namibia as applicable. OR any existing project within the subject area to be upscaled.
- Principal Investigators (PIs) must apply on behalf of their respective consortia/research groups. PIs must be an expert in the field and be in possession of a PhD degree or higher in the fields related to the solutions being investigated, such as in epidemiology, medical biology, chemistry, biostatistics, physics, and biomedical engineering. A PI in possession of a Master's degree may be considered based on relevant experience and team composition.
- PIs will be responsible for the overall project coordination and reporting (technical and financial).

- Masters and Doctoral students / research scholars, with at least 30% female representation working in relevant area from the academic institution, shall also be part of the development team as Project Associates, over and above the core team.
- Collaboration with medical professionals is required and may be supported by the grant under consultancy fees.
- The project's overall implementation must include a component of capacity building and for that reason, the project team must include MSc and/or Doctoral students (not more than three) and an early career researcher as co-researcher/ investigator and/or an innovator(s) if deemed necessary.

4.1. Eligibility criteria and submission procedure

- a. Namibian citizens or researchers with a valid work or study permit or permanent residence in Namibia may apply.
- b. The call is open to all researchers and groups of researchers or Namibian citizens who are employed on a permanent or contractual basis and affiliated to the following entities:
 - Accredited Public or Private Higher Education Institutions
 - Private/Public Research Institutions/Centres in Namibia
 - Offices / Ministries or Agencies (OMAs) in Namibia
 - Private Sector
 - NGOs
- c. Non-Namibians working under a contract with any of the above institutions are eligible to apply. However, the project must include a Namibian co-researcher/ investigator who is permanently working on the project from any institution in the country, well-versed with the project, to ensure its completion in the event the contract is no longer valid. The applicant's service contract must be valid during the period of the proposed project and contractual documents must be furnished as proof of employment for the period.
- d. Projects funded through this call should be located and carried out in Namibia unless otherwise indicated in the proposal or grant agreement. The project may contain eligible activities that can be carried out abroad when fully justified for addressing the objective(s) of this call.
- e. Principal Investigators may participate in any number of NCRST-funded projects at the same time but can only *lead* one (1) project at a time unless otherwise agreed on with the NCRST.

For additional information, consult NCRST's Grant Management Rules and Procedures document, available at gms.ncrst.na.

5. SUPPORTED ACTIVITIES

The following specific activities under the project will be funded:

- Data collection through laboratory, desk or field research, payments to people who gather data or provide casual labour;
- Consumables, for example laboratory reagents/supplies and non-capital equipment for projects;
- Reference materials, for example books and articles related to the project;
- Stakeholders' consultations and field visits (in country travel);
- Exchange visits in case of meetings, research visits and exchange of scientists, personnel and experts, as well as reciprocal visits undertaken as part of research and the attendance of seminars, symposia and other meetings funded under this call;
- Subsistence allowance for workshops and seminars, local or international, subject to the percentage limits provided;
- Equipment rentals for seminars and conferences and printing, and any other activity necessary for a proper implementation directly related to the proposed research project in consultation with the NCRST;
- Project indirect cost, which may include stationery, and telecommunications, stipend and benefits of personnel supporting the project, such as Secretaries, Clerks and Accountants;
- Contingency: contingency reserve not exceeding 5% of the project cost may be included in the budget

The following costs are not eligible under this call:

- Purchases of fixed assets;
- Currency exchange losses;
- Direct or indirect taxes, including VAT;
- Overheads;
- Tuition fees;
- Salaries and continuous stipends

6. HOW TO APPLY

The proposal should be submitted as follows:

- Applications must be submitted via the online NCRST Grant Management System at <https://gms.ncrst.na>. A guide on how to use the system is available on the NCRST website www.ncrst.na.
- Applications that are not submitted via the online application system shall not be accepted.
- It is advisable that applications be endorsed by the research office or its equivalent authority at higher education or research institutions / departments or centres
- The NCRST will not be held responsible for non-submission
- No submission of hard copies will be accepted
- Upon registration, call guidelines will become available for download.

7. EVALUATION CRITERIA

The evaluation of the research proposals will be organised by NCRST. The following will be considered:

Criteria	Score (%)
1. Scientific quality and innovativeness of the research proposal	15
2. Feasibility of the research proposal <ol style="list-style-type: none">Practicality, realistic, feasibility and consistency of the proposed activities with the objectives of the callClarity and feasibility of the methodology providedAddressing contemporary challenges	20
3. Added value and capacity to be expected from the collaboration	10
4. Gender consideration and inclusivity within the project team	5
5. Competence, expertise and experience of the principal investigators and scientists/researchers involved;	10

6. Clear deliverables	10
7. Relevance and impact of the research <ul style="list-style-type: none"> a. Industrial development; b. Capacity building (institutional and/or human); c. Commercialization of research results; d. Potential impact on the end-use (market needs). e. Technology capability (is there a prototype, or proof of concept that is illustrated and has been proven to work). 	20
8. Budget <ul style="list-style-type: none"> a. Consistency to budget ratio or percentage given by the call guideline b. Does the proposed expenditure reflect the true cost of the proposed activities? 	10
TOTAL SCORE	100

8. PROJECT REPORTING

Progress technical and financial reports will be submitted to NCRST every three (3) months. The project's Phase 1 costs as projected through the proposal and grant agreement will be paid out upon contracting as the grant initial fee. The initial fee may not exceed 30% of the total budget. Thereafter, disbursements will be done upon progress and completion of identified project milestone. Failure to submit reports will result in the withholding of further disbursements and be construed as violation of the contract. A final technical and financial report will be submitted to NCRST by the Principal Investigator at the end of the project. A format will be provided for this purpose.

Whereas disbursement of funds will be after satisfactory cost acquittal of previous Phase activities by the project team and concurrence by the grants management office of NCRST. This is to be at six months intervals, however, flexibility for shorter duration where agreed milestones is realised before six months will be provided.

9. INTELLECTUAL PROPERTY

- Intellectual Property Rights (IPR) means any and all patents, patent applications, know how, unregistered and registered trademarks, trademark applications, trade names, registered designs, unregistered design rights, semiconductor topography rights, copyright, database rights or any other similar intellectual or commercial rights in Namibia or anywhere in the world;
- Intellectual Property will be dealt with in accordance with the provisions made in the contract agreement between the funding institutions and the grant recipient.

10. SUBMISSION DATE AND ACCEPTANCE OF THE GRANT OFFER

- Proposals should be submitted not later than 23h59 on 26 August 2024 onto the NCRST grant management system.
- Applications received after this date will not be considered.
- The successful applicant must accept the grant offer within one week after notification of award and start with the project within one (1) month

The table below indicates the timeline of this project.

Key milestones	Date
Deadline for submission of application	26 August 2024
Notification of award	10 September 2024
Contract signing	15 September 2024
Disbursement of first instalment	20 September 2024
Project completion	31 July 2025

CONTACT DETAILS

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