

## **VLIR-UOS TEAMs Concept Note (2026 Call)**

**Project title: Strengthening Data Science and Analytics for Biomedical, Epidemiological, Ecological, and Translational Research: A Flemish–Kenyan Initiative**

**Lead institution (Global south): Kenya Institute of Primate Research (KIPRE), Ministry of Health, Kenya**

**Flemish partner Institution: Hasselt University (UHasselt)**

**Duration: 5 years      Indicative budget: €300,000**

### **1. Problem statement and context**

The Kenya Institute of Primate Research (KIPRE) is a leading Biomedical, Epidemiology, Ecology and Translational (BEET) research Centre. It was recently (2023) restructured as a Semi-Autonomous Government Agency (SAGA) under the Ministry of Health (MoH).

Since its establishment in 1958, KIPRE has advanced research in tropical and neglected diseases, non-communicable conditions, reproductive health and biology, and biodiversity conservation. Despite this long-standing scientific contribution, KIPRE currently lacks a dedicated Data Science and Analytics Centre (DSAC) capable of managing, integrating, and analyzing the rapidly expanding BEET datasets it generates.

This gap limits KIPRE's ability to harness data-driven approaches including biostatistics, bioinformatics, epidemiology, and data science, which are indispensable for advancing modern biomedical research, disease mapping and modelling, and strengthening public health surveillance and interventions.

Establishing a functional Data Science and Analytics Centre (DSAC) will bridge this gap by enabling KIPRE to systematically digitize and integrate its BEET datasets, apply predictive analytics, and generate policy-relevant evidence to guide decision-making within the MoH.

The initiative aligns with Kenya's Vision 2030, the Universal Health Policy (2020–2030), and the Digital Health and Innovation Strategy, all of which emphasize data governance, capacity strengthening, and digital transformation as key enablers of sustainable health outcomes.

By integrating Flemish expertise from UHasselt in quantitative and computational methods, the project will elevate KIPRE's analytical capacity, advance equitable North-South and South-South collaborations, and position KIPRE as a regional hub for biomedical data science in East Africa.

### **2. Overall and specific objectives**

#### **Overall objective**

To build a sustainable institutional framework for data science and analytics at KIPRE that strengthens BEET research, promotes integrated data-driven efforts, and informs evidence-based public health and conservation policies.

#### **Specific objectives**

1. Establish a fully functional DSAC equipped with modern digital infrastructure and staffed with competent data scientists, analysts, and ICT professionals.

2. Enhance human capacity in data science, biostatistics, epidemiology, bioinformatics and data science through targeted training, mentorship, and academic exchanges between KIPRE and UHasselt.
3. Digitize, curate, and integrate legacy and ongoing research datasets into standardized, interoperable repositories to enable efficient data access and reuse.
4. Develop and institutionalize data governance, ethics, and security frameworks consistent with FAIR (Findable, Accessible, Interoperable, Reusable) and GDPR (General Data Protection Regulations) principles.
5. Apply advanced data science and computational modelling approaches to priority research domains, including biomedical, epidemiological, ecological, and translational studies, with a focus on disease mapping and modelling, One Health surveillance, and drug discovery.
6. Strengthen collaborative partnerships and networks for knowledge exchange, joint research, co-supervision of trainees, and regional benchmarking in data science.

### **3. Expected outcomes and outputs**

1. A fully operational DSAC will be established and institutionalized within KIPRE, serving as a national hub for biomedical and ecological data integration.
2. At least 20 scientists and ICT officers will be trained in advanced data analytics, bioinformatics, and machine learning through structured mentorship and exchange programs.
3. A comprehensive data governance and ethics framework consistent with FAIR and GDPR principles will be adopted.
4. Legacy and ongoing research datasets will be digitized, standardized, and integrated into interoperable repositories.
5. The project will generate flagship data-driven studies supporting evidence-based policy and public health interventions for the MoH.
6. Sustained collaboration between KIPRE, UHasselt, and African partner institutions (University of Nairobi, Ardhi University, and Makerere University) will enhance regional research visibility and position Kenya as a data-enabled Centre of excellence in BEET research.

### **4. Added value of the Flemish–Kenyan partnership**

The partnership leverages UHasselt’s technical excellence in technology, data science and AI-driven analytics to strengthen KIPRE’s capacity for BEET data integration and advanced research.

UHasselt will co-design the DSAC training curriculum, provide mentorship in data-intensive modelling, and support the development of governance and ethics frameworks aligned with international standards.

KIPRE will host the Centre, coordinate implementation, and ensure that analytical outputs inform national health policies.

The collaboration promotes equitable capacity strengthening: Flemish researchers gain access to unique African BEET datasets, while KIPRE scientists acquire advanced analytical and computational skills.

Through joint supervision, collaborative research, and shared innovation, the partnership will build a sustainable data science ecosystem that enhances evidence generation, informs policy, and positions Kenya as a regional hub for integrated data-driven research and decision-making.

## **5. Sustainability**

The DSAC will be institutionalized within KIPRE's organizational structure, with dedicated personnel, infrastructure, and operational budgets integrated into the institute's long-term strategic plan.

The MoH will reinforce sustainability through policy adoption, budgetary support, and integration of DSAC outputs into national health information systems.

A structured mentorship and training framework with UHasselt will facilitate continuous skill transfer; ensuring technical capacity is retained and expanded beyond the project's duration.

Regional collaborations with the University of Nairobi (Kenya), Ardhi University (Tanzania), and Makerere University (Uganda) will foster South–South cooperation through joint proposals, shared data infrastructure, and collaborative research.

By embedding digital infrastructure, data governance, and human capital development within KIPRE's institutional framework, the project will enable the DSAC to evolve into a self-sustaining national and regional Centre of excellence for biomedical and ecological data science.

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